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The Cedar Point Meeting

The Central Electric Railway Association has chosen a very appropriate time for its first fall meeting, which will be held at Cedar Point, near Sandusky, Ohio, on Wednesday and Thursday of the fourth week of this month. Heretofore it has been customary for this representative organization to have but one outing meeting each year, and that has been held just previous to the summer vacation season. The new plan of two outing meetings, one at the beginning and one at the end of the summer vacation season, has received widespread approval. As a class, electric railway men have very little opportunity during the summer months for either recreation or technical discussions of electric railway subjects such as occur at conventions. But by the latter part of August the summer schedules should be running smoothly, and there are usually a few days before Labor Day when the pressure of local work lightens up sufficiently to allow a short absence from home. Hence the days selected for the Cedar Point meeting should be convenient to most of the members. The Central Electric Railway Association holds meetings every two months, and the August meeting is so timed that neither it nor the October meeting, two months later, will conflict with the Atlantic City convention of the American Association. The program announced for Cedar Point is an excellent one and the attendance should be large.

Advertising Car Construction

A series of novel advertisements recently published in the Chicago daily papers by one of the large steam railroads offers a suggestion to electric railway companies. Many railroad advertisements in the past have called attention in general terms to the safety of travel on the lines advertised, but in this series people are told of the means taken for safeguarding them in the event of car derailment. Attention is called to the company's new all-steel cars, with their rugged framework and cast-steel members, which extend from the ends of the platforms to points well inside of the king pins. These cast substructures are connected by heavy steel sills, and the combination underframe supports a steel plate body of heavy design. This construction is made clear to the untechnical public by the use of cut-away or X-ray views of the cars, and, in general, greater stress is laid upon the security from injury which the passengers enjoy than upon the riding qualities of the car. The advertising campaign mentioned suggests the thought that the public as a whole probably has little conception of the attention which has also been given in electric car construction to increasing the safety of passengers. This topic has been foremost in all technical discussions on car design, but while those

in close touch with the subject are conversant with the progress made, this is not true of those not well acquainted with railway matters. It might not be advisable for the electric railway company to go so far as to show views of car bodies that had proved their strength in derailments, but those roads which have designed cars for withstanding heavy buffing strains could present strong arguments based on this safety feature. Another argument that might properly be introduced in such a series of advertisements would be to refer to the benefits from the safety standpoint which are obtained by the high braking power used on electric cars and the possibility of stopping electric cars in much shorter distances than steam trains are stopped.

Proposed Universal Transfers in New York

The replies of the principal railway companies in New York to the request of the Public Service Commission asking them to state the rates upon which they would establish through routes are published elsewhere in this issue, and outline an interesting departure in electric railway operation. Heretofore the idea of through routes on the lines of one or more companies within a city has been so closely associated with the idea of free transfers that it has seemed impossible to divorce them in the minds of the public or even of railway operators. It is true that in a few instances an extra charge has been made for transfers, notably in Philadelphia, where for many years a charge of 3 cents was made, almost without exception, for transferring from one car to another. The plan now proposed by the railway companies in New York is similar to that adopted a few months ago to cover the special case of the Fifty-ninth Street line, and probably the same general type of ticket will be used. The question of the division of the receipts will be taken up later, presumably after some data are obtained as to the average length of ride on each system by transfer passengers. It is satisfactory that a solution of this problem has at last been proposed. We admit that there is an apparent injustice, we are not prepared to say a real injustice, in a rule which compels one man to pay 10 cents or 15 cents for a ride on the surface railways within a city which is shorter than that which a man going in another direction can purchase for 5 cents, where each route is to an equal extent a natural artery of travel, simply because, many years ago, the franchise for the first route was awarded to several companies which have not consolidated, and that of the second route to several companies which have consolidated. There is no doubt also that such a condition of affairs is detrimental to the real estate values of certain districts within the city, and that it unduly favors other districts. At the same time the establishment of the same rate of fare for both distances is not within the power of the railway companies, unless they equalize the conditions by increasing the fare on the cheaper route. The proposed plan is necessarily a compromise. It is proposed for tentative use only by at least several of the companies and has not yet been accepted by the Public Service Commission. But it is worth a trial, and if successful it may offer a solution for a similar condition of affairs in other cities where there is a demand for through transportation but where the issue of free transfers has become too costly.

RAILWAY ELECTRIFICATION IN SWITZERLAND

An important and valuable paper on this topic was presented last month before the Institution of Mechanical Engineers by E. Huber-Stockar, of Zurich, better known in this country as E. Huber, who, from his long experience in the Oerlikon Company and in directing no meager part of this work, is qualified to speak with more than usual authority. The discussion is confined chiefly to the electrical equipment of roads once operated by steam, or roads which on account of their general character might properly enough be operated by steam so far as topographic and engineering conditions are concerned. In other words, the author bars out from consideration street railways, urban and interurban, rack and funicular roads, and all service of a purely local character. He does not, however, consider that the gage is a feature that has any bearing on the classification of railways for this purpose, since there are in Switzerland important narrow-gage steam lines which bear a traffic and run trains as heavy as are found on ordinary standard-gage lines. In point of fact the work of electrification in Switzerland has progressed rather slowly, extraordinarily slowly considering the fact that all the coal for the Swiss railways has to be imported and that the country is rich in water-powers. On the other hand, the traffic, although in places liberal, is not dense from the standpoint of ordinary railway operation, and therefore the burden of fixed charges would be heavily felt in a change of motive power.

More electrical work has been done on privately owned railroads than on the Swiss federal system, and all told the showing for railway electrification is better than appears from a first glance at the figures. In the proportion of railroads electrified, on a mileage basis, Switzerland indeed is easily first, for the total mileage is nearly 400, being a little over 14 per cent of the full mileage of the country. Of the narrow-gage lines, 1 m being the usual standard for this class of construction, almost exactly one-half the total mileage is electric.

The first attempt of serious importance in the way of electrification was the Burgdorf-Thun line, a branch of a privately owned standard-gage railway some 25 miles in length. This line was equipped on the three-phase system, at 40 cycles and with 750 volts to 800 volts on the working conductor, and has now been in operation for a dozen years. It has proved successful from both an engineering and an operative standpoint.

A little later the Freiberg-Murten line, originally operated by steam and about 25 miles in length, was electrified on the third-rail system with direct-current motors worked at 750 volts to 800 volts. It was a comparatively small installation, utilizing but four motor cars, but has proved thoroughly operative, useful and generally satisfactory. This was the first instance of direct-current operation in a general electrification to be found in Switzerland and still remains the only example of third-rail practice. There have been several very successful long electric lines in the Alpine country built since and operated by high-voltage continuous current, 750 volts to 1000 volts, on the overhead trolley. One line, indeed, about 20 miles in length, has carried the direct-current voltage to 1500 with excellent results. The only three-phase electrification following the

Burgdorf-Thun line was the beautiful installation in the Simplon tunnel. This has been so often described that there is little need here for more than a brief statement that the line itself is little in excess of the length of the tunnel, slightly over 12 miles, that the contact voltage is 3000 and the locomotives, of which the recent ones are of rated horse-power as high as 1700, are gearless and operate at 15 cycles per second. The installation has been a highly successful one from every point of view. The most recent important Swiss railways have generally been of the single-phase type, working at from 25 cycles down to 15 cycles, which seems to be the favorite frequency, and with contact voltages as high as 15,000.

In fact, Mr. Huber-Stockar was one of the early sponsors for the single-phase system and has done, as his modest report indicates, sterling work in the development of the system. The first line so equipped was between Seebach and Wettingen. Two locomotives from the Oerlikon Company were put in service on this line in 1905 and a Siemens-Schuckert locomotive was added a little later. All had geared motors wound for about 300 volts, and while the two former locomotives were rated at 500 hp, the third was of nearly double that power. Though somewhat experimental in its character, this was a genuine electrification of a section of the federal railways and from an operative standpoint proved highly successful. The line was operated at 15 cycles with 15,000 volts on the working conductor, and the results gained demonstrated once and for all the thorough applicability of the system to large railway work. The success of this installation was so notable as to encourage the adoption of the same system for the Spiez-Frutigen line, the initial section of the important Lötschberg tunnel line, which will eventually form a section of the very important main line of traffic running from Milan up through the Simplon Tunnel into and through central Switzerland. This line has been so recently described in our columns as to call for little comment here, except to direct attention to the fact that the single-phase system has been selected here, although the Lötschberg line is to be essentially an extension of the Simplon railway, now equipped with the three-phase system. Evidently the difficulties of having different electric systems on two distinct sections or locomotive divisions of the same through line do not possess the terrors for Swiss engineers that they have for many people in this country.

A still more important project than the Lötschberg line to be put through doubtless within a comparatively brief period is the electrification of the St. Gotthard Railway, now operated by steam. This road is 170 miles long and carries a traffic which is limited only by the difficulties of operating over the enormously heavy grades with steam locomotives. The time has come when a change to electric traction is greatly to be desired. There is ample water-power along the line to run the whole system. At the present time the electrical problems have already been solved, so that the question becomes practically one of costs. Sufficient studies have been made on this side of the matter to make it clear that the time is very near, and perhaps has now arrived, when the volume of traffic justifies the change to electric traction. We hope within

a short period to be able to report the initiation of this notable project. From present indications when attempted it will be a straightforward case of traction by alternating current. The tendency would indicate the use of single phase at low periodicity and with something like 15,000 volts working pressure.

ARBITRATION IN STRIKES

The declaration of a strike is nearly always immediately followed by a demand on the part of the strikers for arbitration, and this demand is usually echoed by the public if the strike is long or if the community is put to any serious inconvenience on account of it. The word "arbitration" is popular at present, and deservedly so because of the general approbation of the treaties of arbitration between the United States and Great Britain and the United States and France. With this meaning of the word in mind a great many people have difficulty in understanding why a proposition which seems very reasonable when applied to the settlement of the disputes of nations and of individuals in the law courts should not be equally effective and equitable in industrial conflicts. Hence, when a railway company declines to arbitrate its labor troubles or declares that there is nothing to arbitrate, as the Coney Island & Brooklyn Railroad did this week, a considerable number of well-meaning citizens undoubtedly consider this attitude as open to criticism.

But arbitration between two nations or between two individuals engaged in a lawsuit and arbitration as usually understood in labor troubles mean two entirely different things. In the former case it presupposes a condition of equality between the contestants so far as responsibility and a readiness to carry out the decision of the arbitrators are concerned. In a labor dispute, however, where it is impossible to assess damages against the employees if they have been found to be wrong, or even to require a specific performance of their duties from the individual employees, arbitration is usually a farce. Since there is only one responsible party, the arbitrators are practically prevented from judging the question before them on its merits. Instead, they must almost necessarily devote their energies to endeavoring to secure as large a concession as possible from the employer, whether any concession is warranted by the facts or not. It is no wonder under these circumstances that in labor disputes in this country the term is looked upon as a misnomer and the plan to arbitrate is so frequently rejected. Until some method is devised by which a ruling based on the merits of the question involved may be made enforceable against both sides there is little chance of creating much enthusiasm among employers over the principle of arbitration.

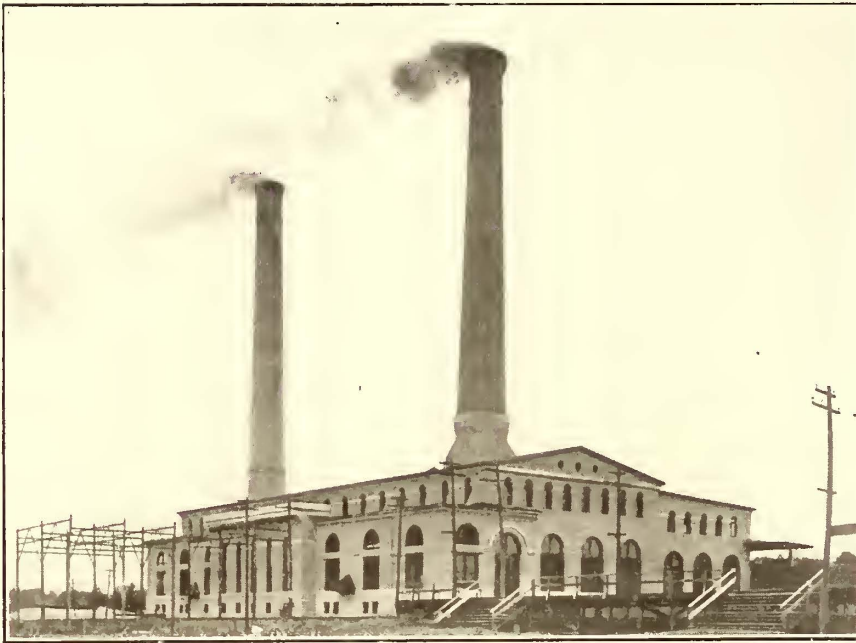
According to the reports from Des Moines, a still different method of settling disputes of this character has been initiated there. The accounts received as yet in regard to the legal points involved are so meager that it is difficult to render a decision upon them. It would seem strange, however, if the courts, after a careful investigation, should uphold a condition which existed temporarily because municipal authorities charged with the maintenance of public order failed to discharge this duty, or would require an employer to keep men in his service against his will.

Power Generation and Distribution System of the Aurora, Elgin & Chicago Railroad

This Article Also Includes Notes About a New Exhaust Steam Turbine, a New and Reconstructed Boiler Plant, Transmission-Line Reconstruction and the Supply of Energy for Lighting to Municipalities and Farmers.

An account was published last week of the development of the Aurora, Elgin & Chicago Railroad and of the service given by that company. A description follows of the company's power station and distribution system.

additional capacity, an order was placed with the General Electric Company for a low-pressure turbo-generating set. A high-vacuum surface condenser outfit of the Worthington type and additional boilers were also purchased.



Aurora, Elgin & Chicago—Main Power Station

All of the energy for operating the Aurora, Elgin & Chicago Railroad system and three connecting trolley lines, as well as lighting several cities, is generated in a large plant located near the Batavia terminal on the Fox River. At this point coal is obtainable over a nearby steam road and condensing water is taken from the river. The power plant includes several interesting additions made since it was described in the *STREET RAILWAY REVIEW* for August, 1902. It now has a daily average summer load of 115,000 kw-hours.

The station building as originally constructed included an engine room, 198 ft. x 94 ft. in plan, and a boiler room, 198 ft. x 47 ft. in plan. The boiler room section has been lengthened 66 ft. to house additional equipment installed during the past year. The generating equipment as first installed included three 1500-kw, 2300-volt, three-phase, 25-cycle, revolving-field General Electric alternators driven by Cooper-Corliss horizontal cross-compound engines supplied with steam from eight boilers. As the load grew it became necessary to install a fourth engine unit and two additional boilers, thus completing the station as originally planned. All of the horizontal engine-driven units are still in active service and in addition a 3700-kw low-pressure turbine is operated.

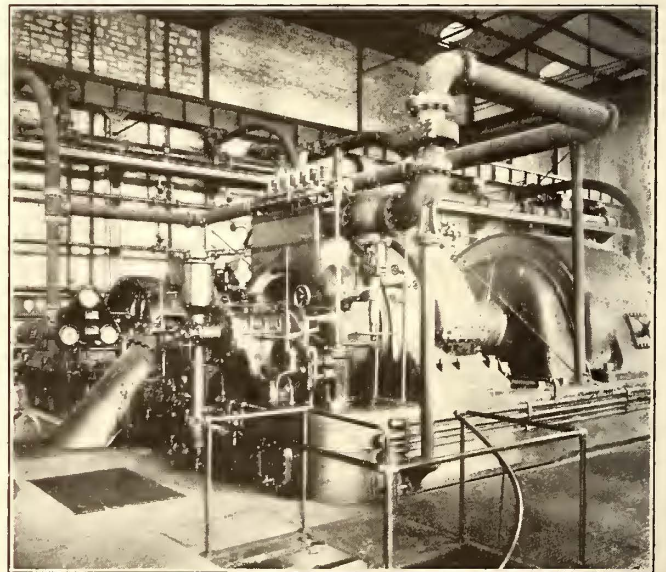
The original boiler equipment with the additions for the fourth engine unit consists of ten Edge Moor boilers, each of 500-hp capacity, designed to operate at 180 lb. gage pressure. Each boiler has a 200-tube Green fuel economizer of 2700 sq. ft. heating surface located between the boiler and the main flue. Green chain grates with an area of 95 ft. each were installed with the boilers.

In 1909 the load had reached the capacity of the station, and as the result of a study of various plans for obtaining

LOW-PRESSURE TURBINE

The new turbine is of the mixed-pressure type so connected that a supply of steam at boiler pressure is available for immediate use by means of a special governor and set of valves. This system, when required, makes up deficiencies that may occur in the amount of exhaust steam from the engine-driven units which ordinarily operate the turbine. In case of emergency it is possible to operate the turbine entirely by the high-pressure supply and at an economy slightly less than that obtained with the condensing engines alone. At present the high-pressure system is used only for starting, and as soon as the turbo-generator has been synchronized with the engine-driven units the high-pressure steam supply is cut off and the unit is run on the exhaust from any two of the four reciprocating-engine sets.

The low-pressure turbine is located in the center of the engine room and takes its supply of steam from a 22-in. exhaust header which extends the full length of the plant and into which all four engines exhaust. By means of suitable motor-driven sectionalizing valves in this exhaust header it is possible to obtain any combination of two engines supplying steam to the



Aurora, Elgin & Chicago—Low-Pressure Turbine in Main Station

turbine, allowing the other two to operate independently on their own condensers. The turbine was selected of such a capacity as to be able to handle all of the exhaust steam from two of the reciprocating engines. Preliminary tests

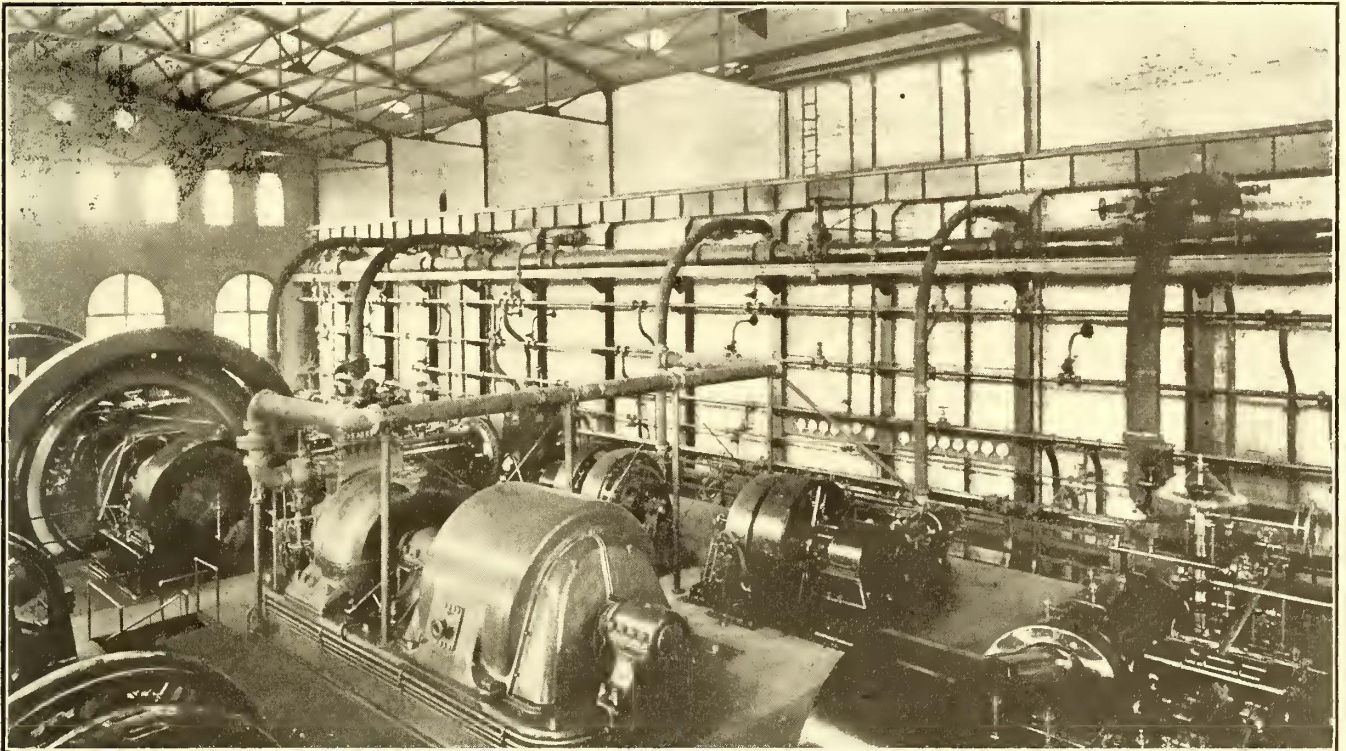
which have been made up to date would indicate that there is approximately an 18 per cent saving in the operation of the low-pressure turbine in connection with reciprocating engines over the same amount of output by the reciprocating engines alone. The company's engineers contemplate making exhaustive tests of this power installation in the near future and these will be made the subject of a separate article.

The new low-pressure turbo-generator was purchased as a 2500-kw machine on the old railway rating of a 35-deg. C. rise for continuous operation. This corresponds to approximately 3700-kw rating on the basis of the so-called "maximum continuous load." This machine has carried the latter load for considerable periods and more than 4000 kw for short intervals. When operating normally all speed regulation for the system is done by means of the engine governors, but it is an interesting fact that with the turbine floating on the system the fluctuations in speed are very much decreased and the voltage regulation corre-

for handling the exhaust gases from four more boilers when installed. The new stack was built of common hard-burned brick, exactly duplicating in design the original stack, and was made by the Heine Chimney Company. It has a height of 225 ft. above the boiler-room floor and its flue has a diameter of 11 ft. at the top. The power-plant equipment includes a Schaeffer & Budenberg stack-draft recording gage installed in the chief engineer's office.

BOILER PLANT CHANGES

In order to obtain the highest possible capacity from the older boiler plant several successful changes have been made in the installation. The stokers on the first eight boilers are being replaced by others of the chain-grate type, but having a larger grate area and being standard with those earlier mentioned for the new boilers. Suspended igniting arches 6 ft. long have also been installed. Another change which brought about improved combustion conditions was the lowering of the grates about 18 in. to increase the height between the grates and the lower



Aurora, Elgin & Chicago—Main Generating Station, Showing Low-Pressure Turbine in the Foreground

spondingly improved. This seems to be due to the fact that the turbine absorbs most of the load fluctuations and thus allows the engines to run at approximately uniform loading.

BOILER PLANT IMPROVEMENTS

At the time the low-pressure turbine was installed the boiler house of the plant was extended to permit the installation of an additional equipment of four 500-hp boilers of the same manufacture as the original boilers. The new boilers were all equipped with Green chain-grate stokers, each having a 6-ft. flat arch and a grate area of 106 ft. This is an increase in grate area of approximately 11.6 per cent over that of the earlier installation of boilers of the same horse-power rating. The new boilers are fifteen tubes high instead of twelve, and are installed without economizer equipment. Instead a Hoppes open feed-water heater was installed to utilize the exhaust steam from certain auxiliaries which formerly were electrically driven or exhausted to atmosphere.

The installation of the new boilers necessitated the construction of a second stack, which was built at the end of the new boiler-house extension and has sufficient capacity

tubes to 5.5 ft. In this way the combustion chamber was considerably enlarged. This reconstruction work, however, required a lowering of the boiler-house floor, and this work was carried forward at the time the new stokers were installed. When the new stokers were installed the fireboxes were extended forward to form a half Dutch oven and at the same time new steel bunkers were erected to give additional coal storage capacity inside the plant. These improvements, together with better draft conditions, due to the addition of the second large stack, make it possible easily to obtain 75 per cent over-rating from the boilers.

The new boilers have been equipped with water backs which supply water to the feed-water heater at about the boiling point. In installing the new chain grates coal pockets were provided in the floor in front of the boiler settings so that fine coal which leaks through the chain grates may be reclaimed into cars in the basement and thus save handling with shovels in the boiler room.

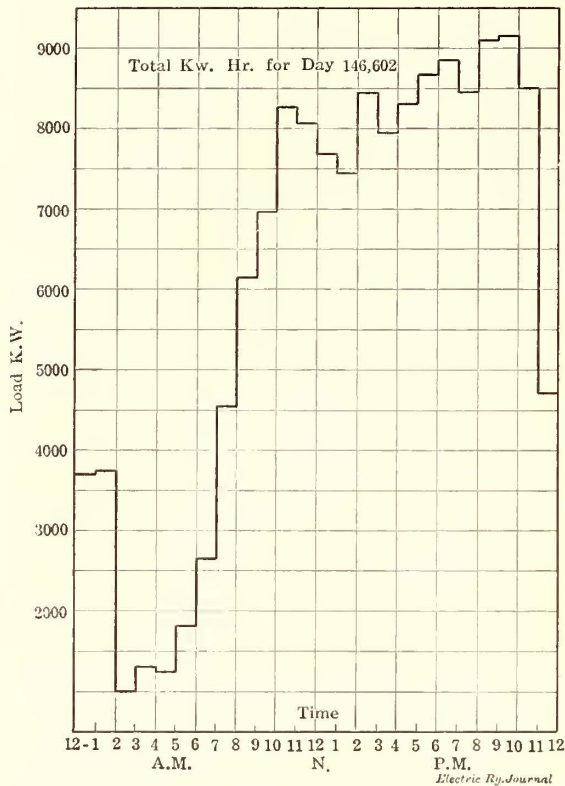
Owing to the growth of the load it has been necessary to discard the original motor-driven triplex boiler-feed pumps and in their places have been installed a steam-

driven duplex boiler-feed pump of the pot-valve type and an Alberger steam turbine-driven 6-in. centrifugal, four-stage boiler-feed pump, either one of which has sufficient capacity to handle the entire boiler feed-water requirements for some time to come.

ment other than the addition of control panels for the new turbo-generator and the installation of a 2400-amp, 125-volt exciter driven by a 450-hp, 2300-volt General Electric induction motor.

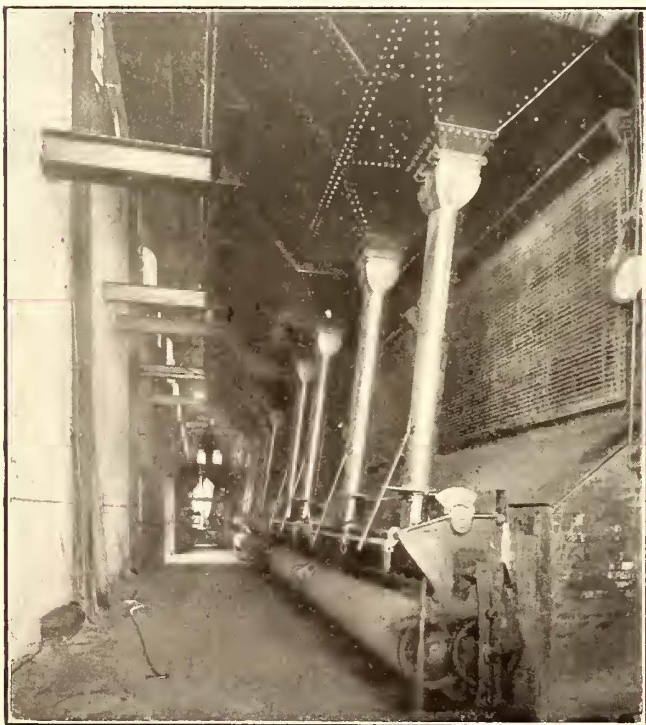
A small machine shop has been added on the gallery at one end of the engine room so that most of the repair work on the engines and power-plant equipment can be done by the station employees.

This power house is now feeding 175 miles of track for



Aurora, Elgin & Chicago—Load Curve for July 4

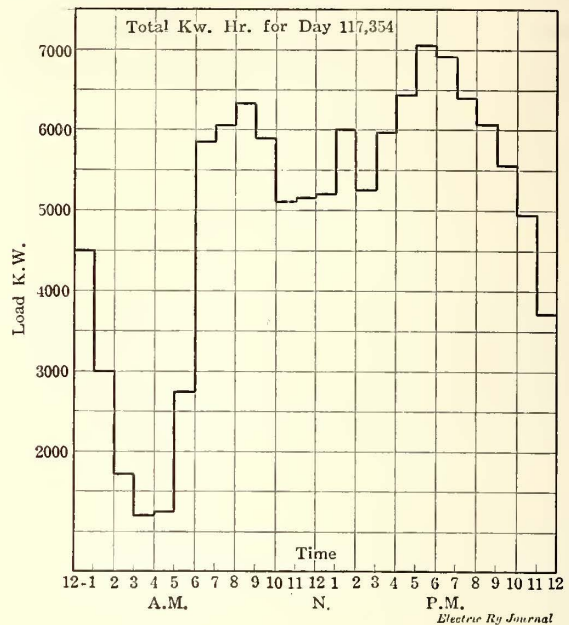
Other miscellaneous improvements in the power plant included the installation of motor-operated valves with remote control for the high and low-pressure steam lines.



Aurora, Elgin & Chicago—New Boilers, Bunkers and Dutch Ovens

By the use of these valves it is possible to shift the turbine steam supply conveniently and quickly from one group of reciprocating engines to another.

But few changes have been made in the electrical equip-



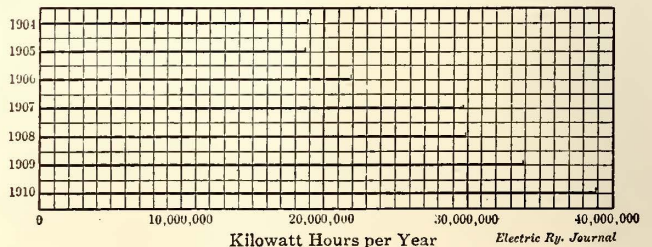
Aurora, Elgin & Chicago—Typical Weekday Load Curve for Generating Station

the Aurora, Elgin & Chicago line, 28 miles for the Aurora & DeKalb line, 34 miles for the Elgin-Belvidere line and 11 miles for the Aurora-Joliet line. In addition it supplies current for all the lighting in the city of Elgin, for seven smaller municipalities and for a number of small motor installations fed from the 600-volt distribution lines, as described later. The accompanying diagram shows the growth of the total output of the generating station since 1904. During that year the output of the plant was 18,667,000 kw-hours. Last year the output was 38,764,000 kw-hours.

Accompanying load charts show the typical power-station loading for a weekday and also show the load for the Fourth of July this year. The shape of the curve is controlled very largely by the service on the third-rail divisions, but the lighting and street railway service assist materially in increasing the daily load-factor.

POWER DISTRIBUTION

Energy is distributed from the main generating station of the Aurora, Elgin & Chicago Railroad at 26,400 volts. It is transmitted over three aluminum-cable, high-tension



Aurora, Elgin & Chicago—Diagram Showing Total Output of Generating Station by Years

transmission circuits extending one each to the north, east and south. The general arrangement of the transmission system is in the form of a triangle with an extension from each corner. Any side of this triangle may be opened

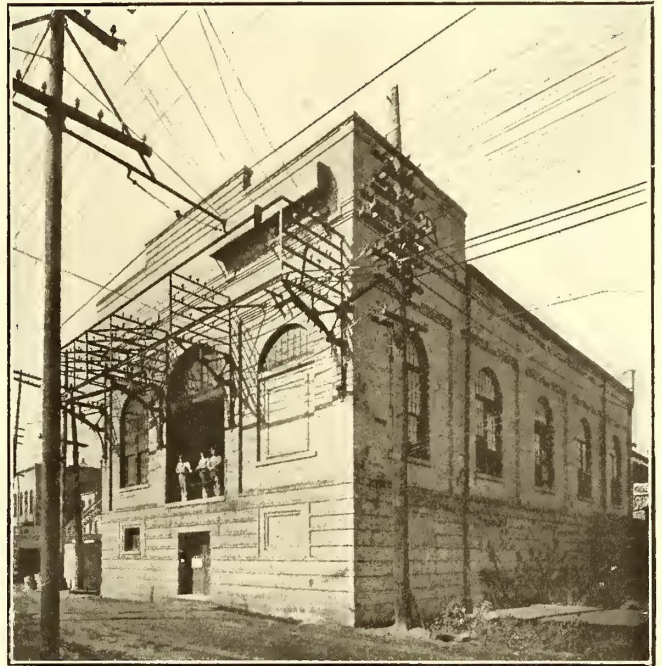
and yet all substations receive current. One line extending north runs across country to connect with the Geneva branch near West Chicago, and the Elgin branch at Ingalton, from which point it branches in both directions following the right-of-way to Elgin and through Wheaton to Lombard. A second transmission line extends across country south from the power plant to Aurora. The third line extends eastward along the interurban right-of-way through Wheaton to Lombard, where it is joined by the line which follows the Elgin branch from Ingalton. The duplicate lines are carried on the same poles between Wheaton and Lombard. From Lombard a single transmission line extends east to Maywood.

The company plans to build during the coming year a duplicate pole and transmission line from Ingalton to Elgin. This will insure, when completed, a continuity of supply for the lighting substation at Elgin, which now is fed over the present single line and consequently has been subject to temporary interruptions. It will also be of assistance in maintaining continuous power supply for the Clintonville railway substation, which supplies power for the Elgin city lines and interurban lines in that vicinity.

As originally installed the high-tension transmission line had a 30-in. equilateral triangular spacing, but this has been increased to 65-in. spacing. It was found with the smaller spacing that the line wires could be easily short-circuited from accidental causes or by maliciously inclined persons, and the 26,400-volt arcs in many cases would hold long enough to burn in two the wires or to blister them so that the first cold snap would part them. Since the reconstruction of the line very few interruptions have taken place.

The high-tension line was reconstructed without impairment to the service. On the triangular loop, which has earlier been described, the work of reconstructing the line was carried on in the daytime. One side of the loop can be cut off at any time and still all substations be supplied.

were the Locke No. 307, a three-part porcelain type which now is obsolete. For present maintenance and extension work on the 26,400-volt lines the Ohio brass No. 9413 insulator is used. This also is a three-part insulator weigh-

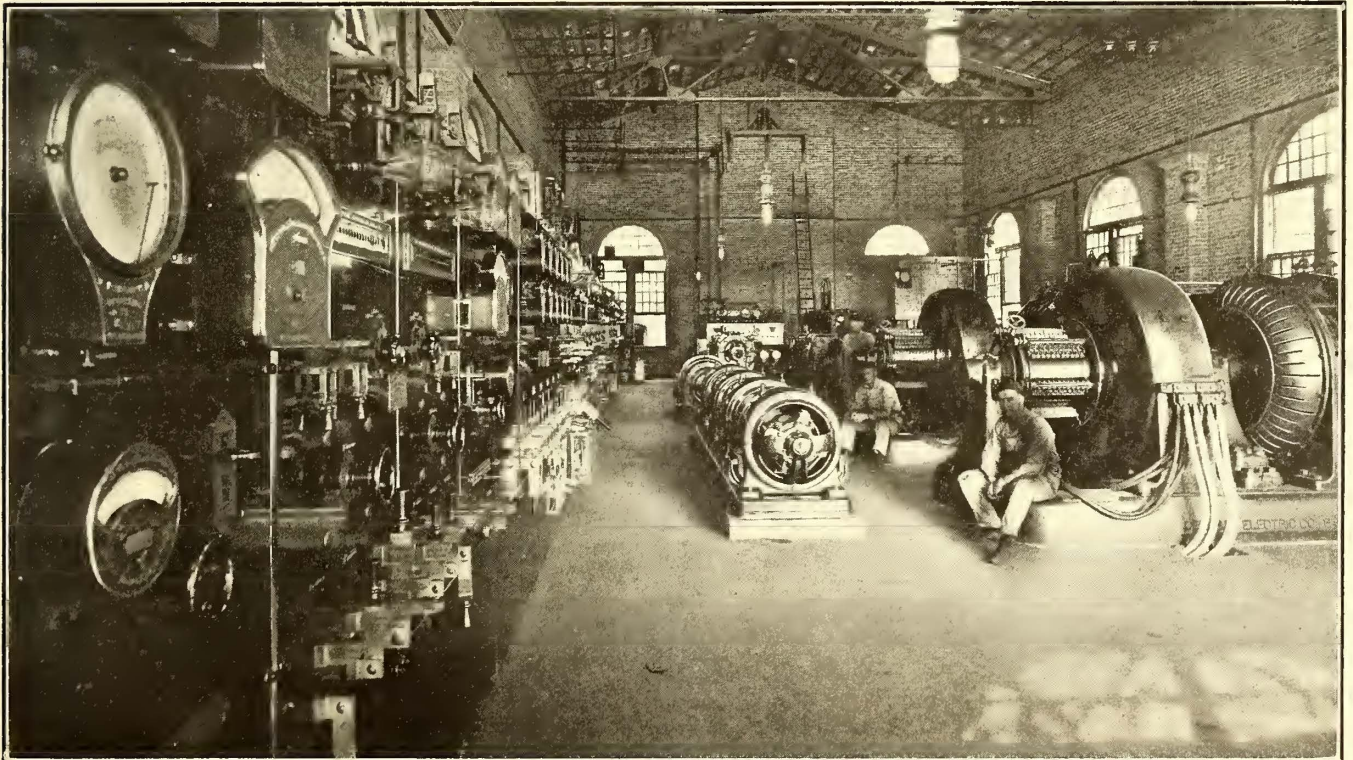


Aurora, Elgin & Chicago—Elgin Substation

ing 8¼ lb., designed for 35,000-volt line voltage and 90,000-volt test voltage.

ROTARY CONVERTER SUBSTATIONS

The third-rail division of the Aurora, Elgin & Chicago



Aurora, Elgin & Chicago—Substation at Elgin

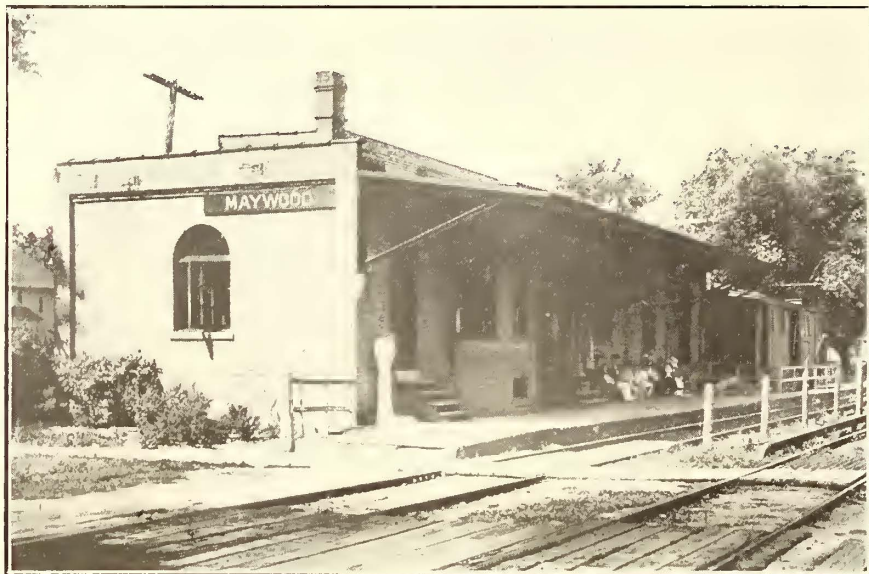
The reconstruction work on the extensions from the corners of the loop was done by working three hours each night when car service was lightest.

The insulators installed at the time of reconstruction

is supplied with 600-volt current by seven rotary converter substations, two of which—those at Clintonville and Aurora—also feed the Fox River trolley line and the local street railway systems. The power-plant installation in-

cludes a rotary converter substation equipment for feeding both the third-rail division and the Fox River line. The total rotary converter capacity is 8500 kw.

No new railway substations have been added to those originally built, but it has been necessary from time to time to increase the equipment in each substation as demanded by the increased train service. The original



Aurora, Elgin & Chicago—Substation, Depot and Portable Substation at Maywood

equipment of each substation included two 500-kw General Electric rotary converters with accessory apparatus. A third 500-kw unit has been installed in each of three of the substations, while in another—that at Lombard—one 500-kw rotary has been replaced by a 1000-kw rotary. The Maywood substation carries the largest load, and this has three 500-kw rotaries and is assisted by a portable substation having one 500-kw rotary. The company has

THIRD-RAIL DETAILS

Some of the standards of construction on the 600-volt distribution system may be of interest. The type of third-rail was described in the issue of this paper for Aug. 5. The third-rail, of 100-lb. section of soft steel, is electrically continuous throughout the length of the road and is subdivided at the switchboard feeder panels only. On the Wheaton-Chicago double-track section the two third-rails are operated in multiple and thus furnish a carrying capacity approximately equivalent to 4,000,000 circ. mil cross-section of copper. No supplementary feeders are used on the third-rail division, and this road, by reason of the large carrying capacity of its third-rail, is particularly fortunate in being thus able to maintain high average voltage conditions. Tests made over considerable sections of tracks, including numerous highway crossing cables, show the third-rail leakage to average 0.6 amp per mile of track on 600 volts. This leakage is practically the same in wet and dry weather. All new work and replacements are being done with the Ohio Brass Company's porcelain insulators.

THIRD-RAIL HIGHWAY CROSSING CABLES

On the third-rail division it is necessary, of course, at all street and highway intersections to break the third-rail and carry the current underground. The connecting cables spanning these highway gaps as originally installed consisted of paper and rubber-insulated copper cables of 1,500,000 circ. mil and 2,000,000 circ. mil cross-sectional area, sheathed with lead and protected by jute. These were installed underground and protected only by having 1-in. boards placed above them. Insulating terminal heads furnish weatherproof outlets of large cross-section. The terminal heads are connected with the base of



Aurora, Elgin & Chicago—Combination Depot and Substation

standardized on 1000-kw rotaries for future additions. The only other substation changes of note have been the substitution of inverse time-element relays on all high-tension feeders and the replacement of the original 26,000-volt lightning arresters with the multi-gap type arresters made by the General Electric Company. These changes have been important in reducing interruptions to service.

the third-rail by compressed terminal stranded bonds of Electric Service Supplies Company manufacture. So much trouble was experienced by the burning out of these highway crossing cables that a special construction was developed.

As installed in the new way the cables give excellent service. Ordinary rubber-covered cable is used in place of

the expensive lead-covered, paper or rubber-insulated cable. The cable is pulled into a 3-in. bituminized fiber conduit entirely incased in concrete. The sections of conduit are carefully joined and at each end of the cable a right-angle bend serves to bring the cable above ground at the proper location. The terminals of the cables are protected from the weather by concrete or porcelain caps. The original method of connecting to the rail is still followed.

The maintenance cost of the third-rail and its highway crossing cables is \$55 per mile of rail per year. The maintenance crew for the third-rail division, which cares for approximately 100 miles of third-rail and transmission line, consists of one electrical man, a foreman and five repair men. This crew also has charge of the highway crossing cables.

During the past year the company has rebuilt a considerable portion of its city overhead system with No. 00 trolley wire and its interurban trolley lines with No. 000 wire, and also has installed considerable additional 500,000-circ. mil feeder cables on the trolley lines.

CONNECTICUT UTILITIES LAW

The law passed by the recent General Assembly of Connecticut creating a public utilities commission in that State provides for the appointment to the commission of three electors of the State by the General Assembly upon nomination by the Governor. The first commissioners, who have already been appointed, as noted previously in the *ELECTRIC RAILWAY JOURNAL*, are to serve respectively until July 1, 1913, July 1, 1915, and July 1, 1917. Thereafter the appointees to the commission are to serve for six years. If a vacancy should occur when the Assembly is not in session the Governor is to appoint a commissioner to sit until the next session of the Assembly. No officer or employee of any public service corporation is to be appointed to the commission. Each commissioner is to receive a salary of \$5,000 a year and expenses. Removals can be made only after judgment rendered by the Superior Court upon written complaint of the Attorney-General.

The office of the commission is to be at the State Capitol, and is to be open during the usual business hours, and here all records and other documents of the commission are to be filed. The commission is to appoint a secretary and such accountants, experts and clerks as it may require and is to fix their compensation. The expenditures of the commission, however, are not to exceed the specific appropriations made from time to time for its use by the General Assembly.

The commission is empowered to delegate its authority to one or more of its members. The commission is to have access to all books and records of the companies which come within its jurisdiction, and may summon and examine under oath such witnesses as it deems necessary to obtain facts for its guidance. Fees of witnesses summoned by the commission are to be the same as in the Superior Court.

Written notice of all orders, decisions and authorizations by the commission is to be served in person or by registered mail. The Superior Court is empowered to enforce "by appropriate decree or process any provision of this act or any proper order of the commission rendered in pursuance of any such provision." The new commission abolished the Railroad Commission, but the records and orders of that commission continue in force as the property of the Public Utilities Commission.

Any person or any town, city or borough may complain to the commission about any defect in the physical plant of any company within the jurisdiction of the commission or about the manner of operating such plant. Any town, city or borough or any ten patrons of a company within the jurisdiction of the commission may com-

plain in regard to the service furnished or the rates charged for services. After a hearing following such complaint the commission is empowered to fix rates or prescribe service, and every company which fails to comply immediately with any order of the commission is liable to a fine of not more than \$1,000 for each offense and is liable to double damages for any injury resulting to any person from such failure. All accidents "attended with personal injury or involving public safety" are to be reported to the commission as soon as may be reasonably possible after the occurrence, under penalty of a fine of \$500 for each failure so to report, and the commission is authorized after it has investigated an accident to suggest means for preventing similar occurrences.

In regard to through rates the law says:

"If any lines of any two or more common carriers or railroad or street railway companies form, or by the construction and maintenance of a switch or other suitable connection could be made to form, a continuous line of transportation, the commission, upon hearing, after due public notice, may authorize or require the establishment by such companies, at joint rates, of through routes or transportation for passengers or for such freight or other property as the commission may designate; and the commission may, after due hearing, require any of such companies to operate, over its lines, cars or other equipment delivered by any other of such companies. If such companies cannot agree as to the division of rates or the conditions under which such through routes of transportation shall be established or such cars or other equipment operated, the commission shall have power, after due hearing, to determine and prescribe the proportionate portions of such through rates payable to each of such companies necessary to the establishment of such through routes or transportation or to the operation of such cars or other equipment."

All reports of operations of the companies are to be for the year ending on June 30, and are to be furnished the commission on or before Sept. 15 next following on the blanks furnished by the commission. A fine of \$25 a day is prescribed for failure to comply with this provision. The reports are to be sworn to by the president or the vice-president and treasurer of the company. Persons willfully making a false report or certifying a false report are liable to a fine of \$5,000, or imprisonment for not more than five years, or both.

Appeal from any decision or order of the commission may be made to the Superior Court. The Attorney-General is to appear for and represent the commission in all proceedings following such appeal.

ACCIDENT PREVENTION

F. W. Johnson, superintendent bureau for the prevention of accidents of the Philadelphia Rapid Transit Company, has just issued two pamphlets relating to the value of educational work in the reduction of accident damages. Both pamphlets lay stress upon the desirability of instructing the employees of a company so that they will take special precautions to avoid accidents, and the author presents some very striking examples of what may be done in this way. He recognizes the value of improved car construction and of safety appliances, but believes that they constitute only part of the solution of the problem. The work upon which Mr. Johnson has been engaged in Philadelphia has been along these educational lines.

During 1910 the tramway company of Cairo, Egypt, extended its system along different lines branching in all quarters of the capital, their total length now amounting to 139 miles. The company carried 53,492,219 passengers in 1910, an increase of 4,000,000 over the previous year. In 1910 the receipts amounted to \$1,384,330.

Steel Cars for the Newark Extension of the Hudson Tunnels

These Cars Are Similar in General Design to the Steel Motor Cars of the Long Island Railroad, but Have a Seating Arrangement Like Those of the Hudson & Manhattan Railroad. They Will Be Operated Jointly by the Pennsylvania Railroad and the Hudson & Manhattan Railroad on the Newark Extension.

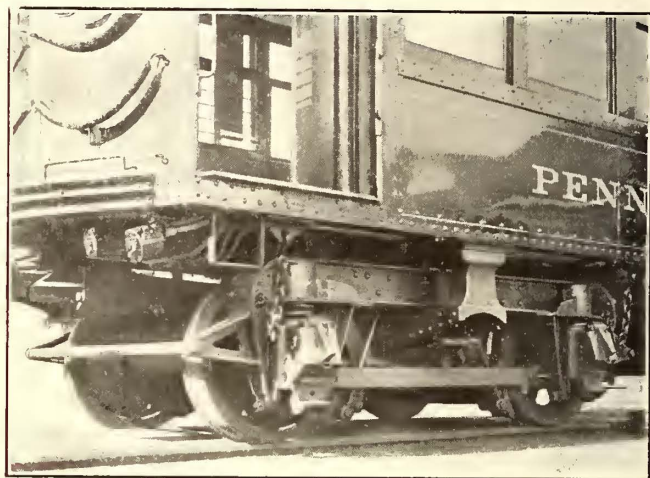
The Pennsylvania Railroad and the Hudson & Manhattan Railroad are preparing to operate a joint through service of multiple-unit electric trains between Newark, N. J., and the Hudson Terminal in New York City. The Hudson & Manhattan Railroad is extending its tunnels west under Jersey

by the American Car & Foundry Company, and the thirty-six cars ordered by the Hudson & Manhattan Railroad are being built by the Pressed Steel Car Company. The cars of the two companies are alike, having been built from designs prepared by the Pennsylvania Railroad. They can be operated in the same trains with the standard cars of the Hudson & Manhattan Railroad.

In the general principle of design of the underframing and side construction the new cars are similar to the steel motor cars of the Long Island Railroad, which were illus-



Newark Extension Cars—Interior View



Newark Extension Cars—Truck

City to a point just east of Bergen Hill, where they come up on the right-of-way of the Pennsylvania Railroad. From this point the Pennsylvania Railroad is equipping with third rail its old main line tracks across the meadows to Manhattan Transfer, where the new electric division to the Thirty-third Street Station branches off. Beyond Manhattan Transfer a two-track steel elevated structure is being built

trated and described in the *ELECTRIC RAILWAY JOURNAL* of June 17, 1911, page 1054. As they are to be operated through the Hudson tunnels, however, their over-all dimensions are less, owing to the limited clearances and sharp curves. The length over platforms is 48 ft. and the height from top of rail to top of roof is only 11 ft. 8½ in. The maximum width over the side-door threshold plates is 8 ft.



Newark Extension Cars—Side View

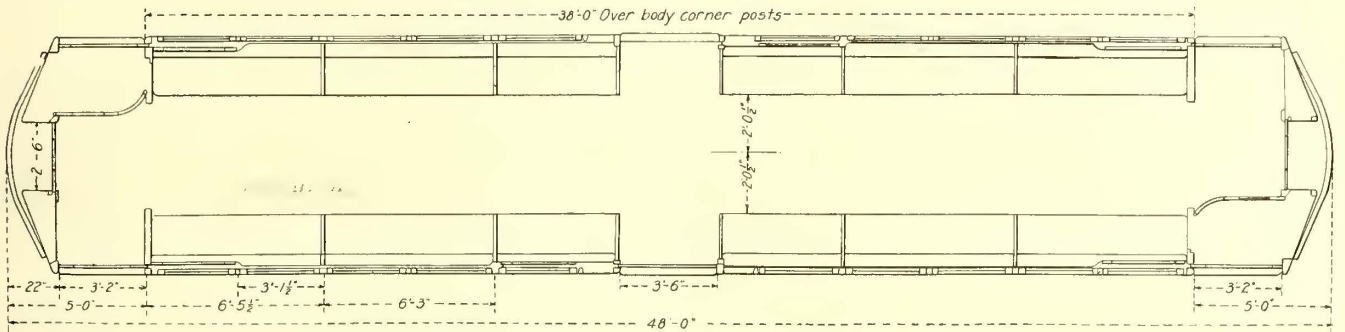
through Harrison, over a new bridge across the Passaic River, and through Newark to a new terminal station, near Market and Broad Streets, in the center of the city. For operating this service the Pennsylvania Railroad has purchased sixty new steel motor cars and the Hudson & Manhattan Railroad has purchased thirty-six cars. The sixty cars ordered by the Pennsylvania Railroad are being built

10½ in., and the width at the eaves is 8 ft. 7 13-16 in. The cars have longitudinal seats with steel partitions and vertical and horizontal grab-handles, as in the standard cars of the Hudson & Manhattan Railroad. Three doors are provided in each side, the end doors being 3 ft. 2 in. wide, and the center doors 3 ft. 6 in. wide.

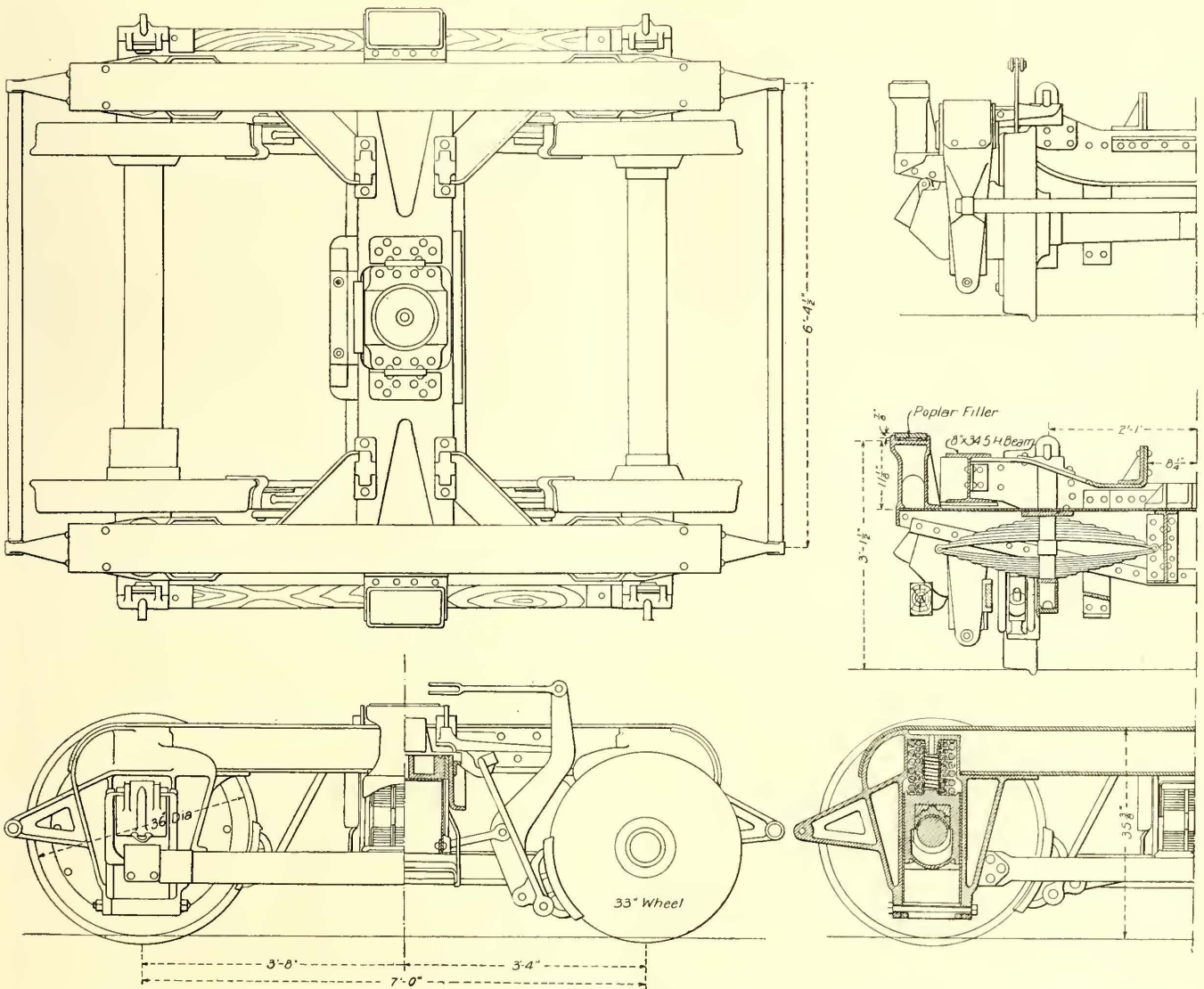
The principal member of the underframing consists of a

box girder center sill formed of two 9-in. channels, with top and bottom cover plates between the cantilever cross-bearers and two 6-in. channels, with cover plates beyond the cross-bearers. The webs of the 6-in. channels are split at the ends next to the cross-bearers, and the bottom flanges are bent down 3 in. to join the bottom flanges of the 9-in. I-beams, where the splices are made at the cross-bearers.

carried by the plate girder thus formed is transmitted to the center sill through the end sills and the two cantilever cross-bearers. The cross-bearers are built up of two pressed steel diaphragms, $\frac{1}{4}$ in. thick, and top and bottom cover plates respectively $\frac{5}{16}$ in. and $\frac{1}{8}$ in. thick. The platform end sills are curved channels reinforced with two platform floor plates, each $\frac{1}{4}$ in. thick. These plates extend in



Newark Extension Cars—Plan Showing Seating Arrangement



Newark Extension Cars—Plan, Elevation and Half Sections of Truck

The body center plates are attached directly to the center sill and no body bolsters are used. The cross-sectional area of the center sill between cross-bearers is 25 sq. in., which is ample to resist any compressive stresses encountered in multiple-unit train service.

The side framing consists of a bottom angle 5 in. x $3\frac{1}{2}$ in. x 5-16 in., the sheathing plates, which are 3-32 in. thick, and a rectangular belt rail, 4 in. x $\frac{3}{8}$ in. All of the load

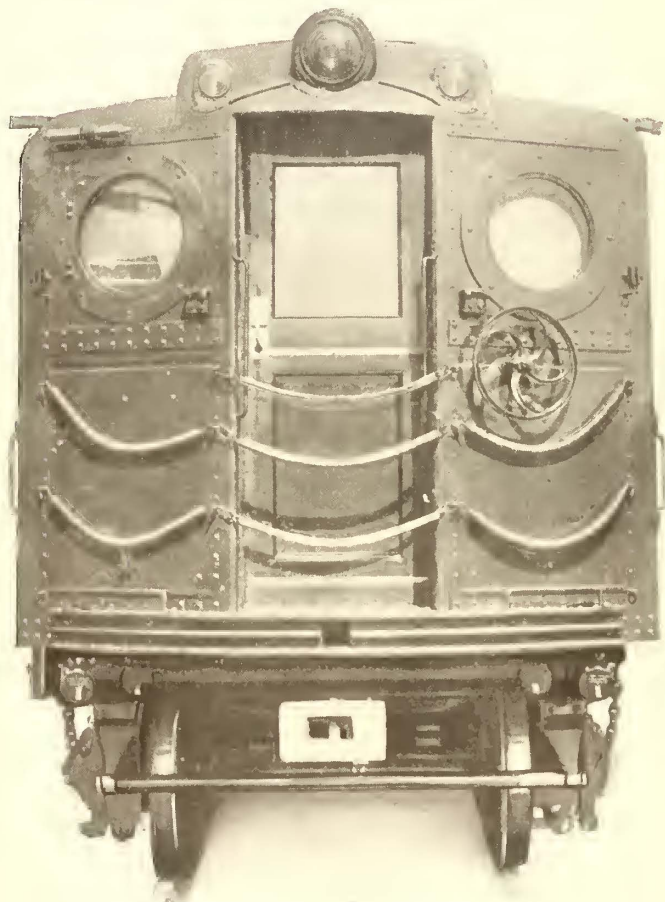
toward the center of the car for a distance of 5 ft. 6 in., and they are stiffened by pressed-steel corner braces extending inward toward the center sill on each side.

The floor of the car body is magnesite composition, in which is embedded a layer of expanded metal riveted on the top surface of the smooth steel floor plates. The roof is of the monitor deck type. The lower deck has no head-lining on the inside, but the upper deck is lined with fiber

board. The windows have a fixed lower sash and an upper sash which is arranged to drop for ventilation. The upper deck sash also may be opened for ventilation.

The new cars are fitted with Van Dorn couplers and radial attachments, so as to be interchangeable with the standard equipment of the Hudson & Manhattan cars. Other special equipment includes Consolidated Car Heating Company's electrically controlled, pneumatic door-operating devices and train-signal system. The doors are controlled by push buttons on the vestibule center posts. The center side door on each side may be opened or closed from either end of the car, and a push button is also provided on the outside of the car on one of the door posts, by means of which a platform man can close the door independently of the trainmen. Electric heaters are inserted in the seat risers. The cars are painted Tuscan red, which is the standard passenger car body color of the Pennsylvania Railroad.

The trucks used under these cars are a modification of



Newark Extension Cars—End View

the type of trucks used under the Long Island Railroad cars. Each truck will carry one GE-212 commutating-pole motor rated at 225 hp at 600 volts. The motor axle wheels are 36 in. in diameter, and the trailer axle wheels are 33 in. in diameter. The extra weight of the motor on the motor axle is compensated for by mounting the bolster off center 2 in. nearer the trailer axle than the motor axle, so as to equalize the weight on both axles. The truck side-frames are 8-in.-wide flange I-beams, to which are riveted the cast-steel pedestals. Pieces of steel tubing are used for the end frames of the truck. The transom is made of pressed steel in one piece and surrounds the bolster. It has a large opening cut in the top, through which the body center plate passes. The bolster is supported on triple elliptic springs suspended by link carriers from the transom and corner gusset castings. The side bearings are mounted on the ends of the bolster outside of the truck frame. No brake beams are used, as the live brake-lever on each side of the truck is attached

to an equalizing lever which passes through the center sills above the center plate. The cars are equipped with Westinghouse electro-pneumatic brakes and 12-in. cylinders.

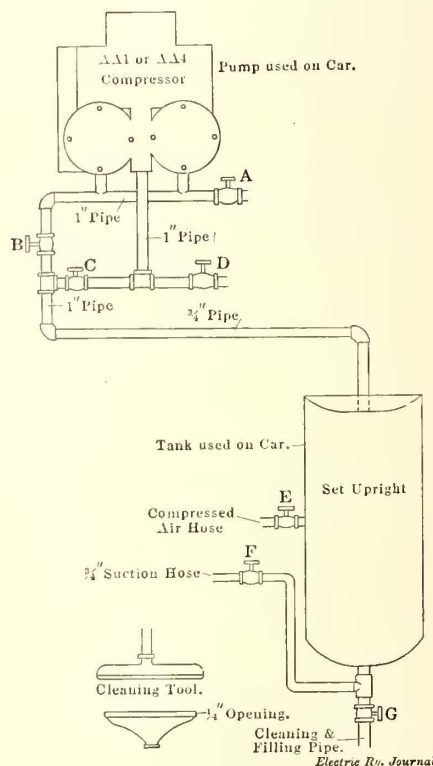
The weight of a car and trucks, complete with electrical equipment, is 72,500 lb.

COMBINED SUCTION AND PRESSURE APPARATUS FOR CAR CLEANING

BY C. H. COPLEY, SUPERINTENDENT AND MASTER MECHANIC
NORWALK DIVISION, CONNECTICUT COMPANY

The writer has been using for some time a combination vacuum and pressure car-cleaning outfit, the design of which may be of interest to others who have a compressor available. The piping connections which are shown in the accompanying sketch are manipulated as follows:

To use as a vacuum or seat cleaner, close *A* and *C* and open the valves *B* and *F*. About two pails of water are used in the tank to prevent the entrance of dirt and dust into the pump. Upon starting the machine with the valves set as above, close the tank connections *E* and *F* and open *G*, upon which the water will be sucked into the tank.



Piping for Combined Pressure and Vacuum System

Close *G* after the water is in the tank and then with the suction hose hitched on at *F* open *F* and the apparatus is ready for service. It is desirable to change the water for every third car. To clean the tank stop the machine and open *F* and *G*, whereupon the dirt and water will run out.

To use this equipment for the compressed-air cleaning of controllers, motor shells, armatures, etc., close valves *D* and *B*, open valves *C* and *A*, close the tank valves *F* and *G*, attach hose to *E* and open ready for service.

In this way a 20-ft. closed car can be thoroughly cleaned in 15 minutes and a 33-ft. car in 30 minutes.

The Swiss government has just granted a concession for the construction of a narrow-gage electric railway, about 19 miles long, from Meiringen to Engelberg, over the Joch Pass. The new line is to be built by the same company that constructed the electric railway from Stansstad to Engelberg.

Sprinkler System in Open Yard of Manhattan Elevated Railway

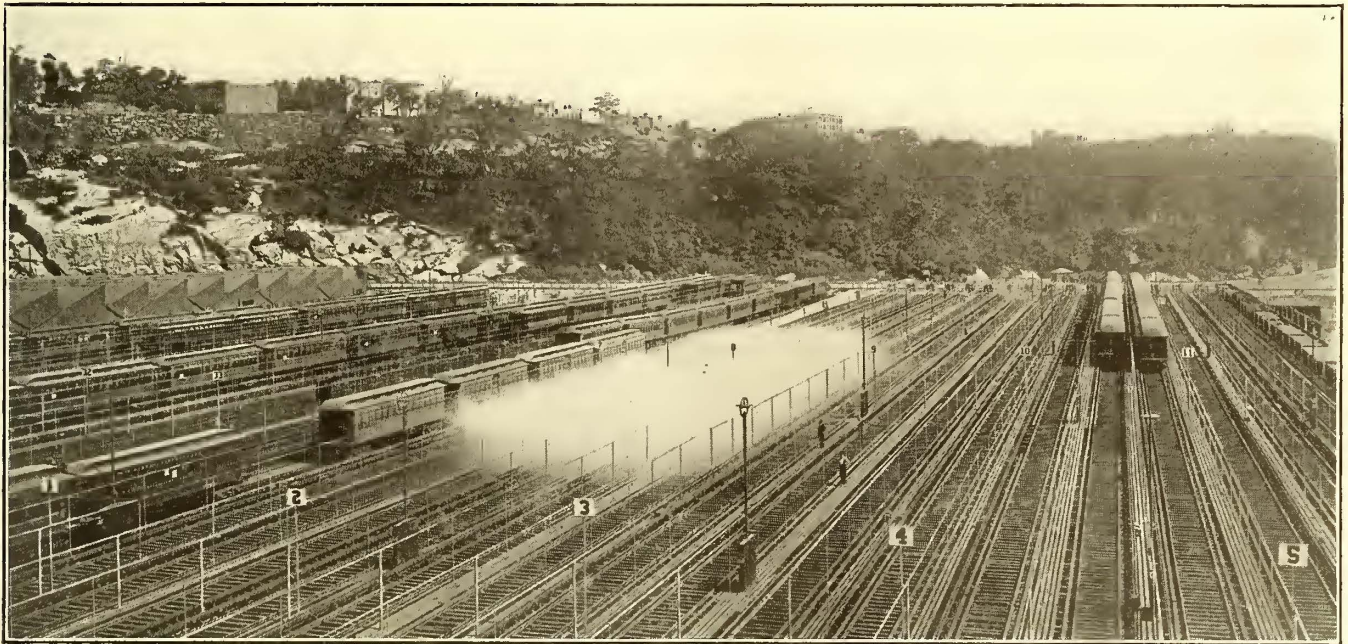
A Description of the Sprinkler System Installed by the Interborough Rapid Transit Company for Yard Protection. Owing to the Exposed Condition of the Yard, Distant Control and Open Heads Are Used.

The Interborough Rapid Transit Company has recently completed the installation of a complete sprinkler system in the Harlem River yard of the Sixth Avenue division of the Manhattan Elevated Railway at 159th Street and Eighth Avenue, New York City. This yard is in the open air and has a capacity for storing about 560 elevated cars. It contains thirty-three tracks with a total length of 26,510 ft. About 75 per cent of the tracks are on an elevated structure and the remainder are on an ash fill. As practically all the rolling stock of the Sixth Avenue and Ninth Avenue divisions is stored in this yard at night, a bad fire would cripple the service of these two divisions. The sprinkler system which has been installed is designed to

½-in. nozzles. They are spaced about 10 ft. apart and are located about 4 in. below the bottom of the top sash rail of the car windows. A total of 2804 heads was installed in the yard. Each of the forty-five sections into which the yard is divided contains on an average eighty-four heads to protect three tracks for a length of 200 ft.

WATER SUPPLY

The sprinkler system is supplied with water from an elevated storage tank and from two motor-driven pumps taking their supply from the Harlem River. The storage tank is of steel with a semi-spherical bottom and has a capacity of 75,000 gal. It is mounted on a steel tower at the southwest corner of the yard at an elevation of 170 ft.



Manhattan Elevated Sprinklers—View of Harlem River Yard from Watch Tower Showing One Section of Sprinklers in Operation

confine an incipient fire to the car in which it originated or until fire hose and hand extinguishers can be brought into action.

As the sprinkler piping and heads are all exposed to freezing temperatures in the winter, it was not thought feasible to install an automatic system of either the dry or wet pipe type, because closed sprinkler heads cannot be depended upon to fuse off in the open air. The sprinkler piping was therefore arranged to be divided into forty-five sections covering the entire yard and water is turned on in any section when required by a motor-driven hydrant valve controlled from a watch tower 50 ft. high which overlooks the entire yard. A watchman is on duty in this tower at all hours of the day and night, and he has no other duties except to look for indications of a fire in the cars. As soon as the pressure is shut off from a sprinkler section it is drained automatically of all water, so that there is no danger of freezing.

SPRINKLERS

A line of aisle sprinklers is placed between each pair of tracks. The heads, which were furnished by the General Fire Extinguisher Company, are of the open type with

above the rail. This tank ordinarily will be kept full of fresh water taken through a meter from the city main and pumped into the tank by one of the motor-driven pressure pumps.

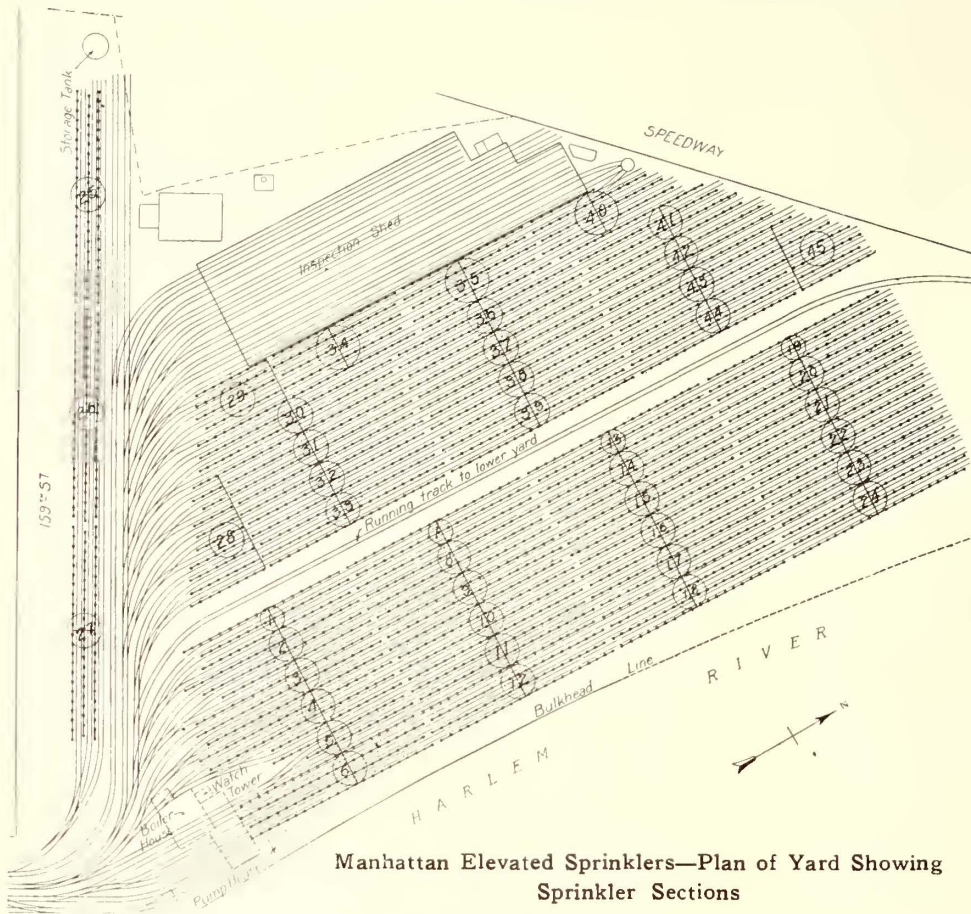
The two motor-driven pressure pumps are located in a pump house near the bulkhead line of the Harlem River. The pumps are placed at the bottom of a well which is deep enough to provide a positive head on the intake side at any stage of the tide. They are of the three-stage turbine type with vertical shafts and each has a capacity of 1500 gal. against a head of 150 lb. They were furnished by the H. R. Worthington Pump Company. Each pump is driven by a 200-hp Garwood direct-current motor coupled directly to the pump shaft at the level of the pump-house floor. Two independent sources of current supply for the motors have been provided, one from the subway and one from the elevated division. The pumps are started and stopped by an attendant in the pump house on signal from the watch tower.

PIPING

A 12-in. main runs from the pump house to the elevated storage tank. A 10-in. loop is connected to this main and

encircles the yard. From this loop the 8-in. risers to feed the sprinkler sections are taken off. The 12-in. and 10-in. pipes are cast iron and are laid entirely underground below the frost line. The pumps and the storage tank

can be used to supply the sprinkler system simultaneously, but a check valve in the 12-in. main just below the storage tank prevents the tank from filling while the pumps are running. When it is desired to fill the tank a 4-in. by-pass connection around the check valve is opened.

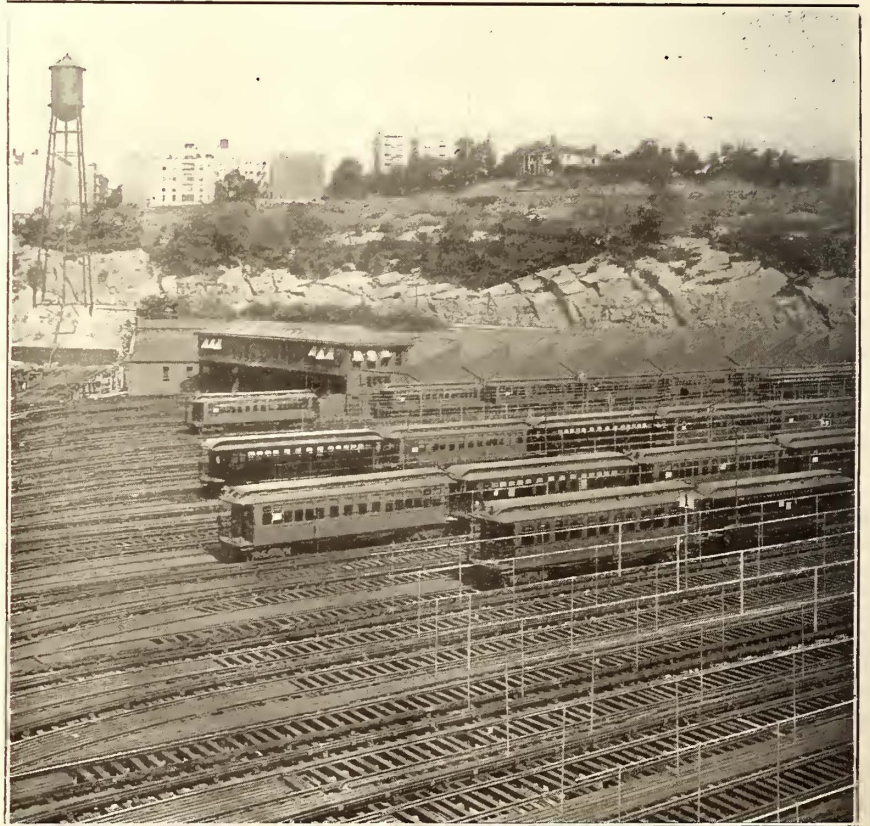


Manhattan Elevated Sprinklers—Plan of Yard Showing Sprinkler Sections

The risers which supply the sections of sprinklers are 8 in. in diameter. This large size was selected to insure minimum loss of pressure at the sprinkler heads. In each riser is placed an electrically operated gate valve furnished by the Nelson Valve Company. These valves are operated by a 1/2-hp, three-phase induction motor suitably geared to the spindle. They may be operated also by a hand wheel on the spindle and a disengaging device is inserted in the motor gearing so that the motor may be operated for testing purposes without moving the valve spindle. Energy for operating these motors is purchased from the United Electric Light & Power Company in the form of three-phase current at 220 volts and 60 cycles. This type of induction motor was selected on account of freedom from trouble when operating in a heavy spray of water to which the motors are subjected when the sprinklers are opened. On test the motors have been operated while completely immersed in water.



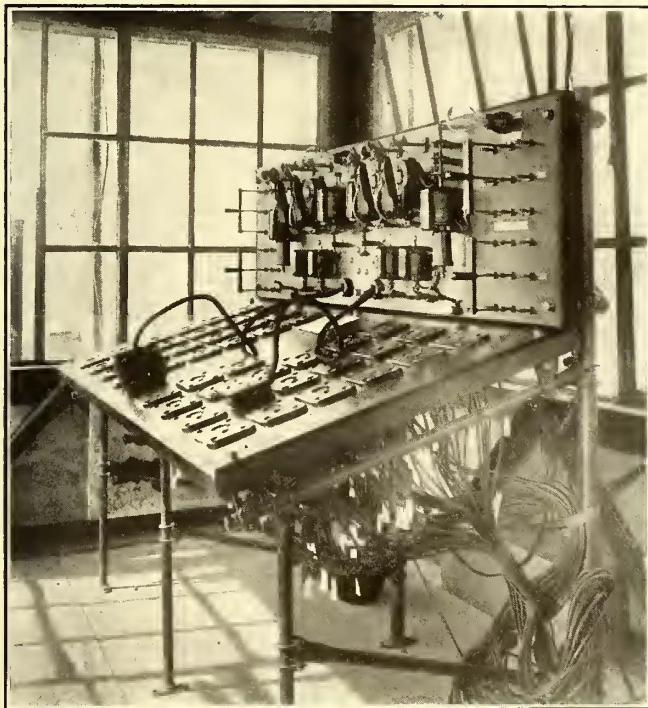
Manhattan Elevated Sprinklers—Motor-Operated Hydrant Valve



Manhattan Elevated Sprinklers—South End of Yard Showing Storage Tank and Inspection Shed

ELECTRICAL CONTROL

The sprinkler valves are controlled from a switchboard in the watch tower. This board consists of forty-five five-point sockets corresponding to the same number of sprinkler valves and two connection plugs. On the top of the board are the motor starting relays and contactors, main switches and pilot lights, all of which are in duplicate. The two plugs have cables which are long enough to permit inserting either plug in any socket on the board. Three of the points on the plugs are required for the three phases of the motor current and the other two are for making the pilot light connections. To start the motor on any valve the plug is inserted in the proper socket and the two-way three-point knife switch on the top of the board is thrown to the "open" position. A limit switch on the valve stem opens the motor circuit at the switchboard when the valve is fully open and similarly when the valve is fully closed. A telephone connection is included in the control cable carried to each sprinkler valve so that the valve tester who makes the round of the system once each week can communicate with the switchboard operator in the tower



Manhattan Elevated Sprinklers—Control Switchboard in Watch Tower

and instruct him how to manipulate the motor for test purposes. The switchboard was furnished by the Fort Wayne Electric Works of the General Electric Company.

AUXILIARY PROTECTION

The inspection shed on the west side of the yard, the storehouse under the yard and the boiler room are equipped with automatic sprinklers. The yard also has a complete equipment of hose lines and on every post in the yard which supports a lighting cluster is mounted a push-button fire-alarm signal which rings an annunciator in the watch tower where the third-rail disconnecting switches are located and also in the interlocking tower at the south end of the yard. When a fire is discovered the watch tower attendant turns the water into the sprinkler section in which the fire has started and blows a fire whistle on the roof of the watch tower, the number of blasts corresponding with the number of the sprinkler section in which the fire is located. To assist the watch tower attendant and other employees in fixing the location of a fire in the yard each sprinkler section is marked with large figures painted

on a square board supported on a post above the roofs of the cars. The shop force in the inspection shed is trained to use the hose lines and responds promptly when the alarm signal is blown. As a further precaution against the spread of a fire throughout the whole yard, the storage tracks are divided in the center by a running track to the surface yard below, and the track on each side of this running track is omitted so that an open space equivalent to the width of three tracks separates the two halves of the yard.

TEST OF THE SYSTEM

On the afternoon of Aug. 4 a test of the system was made in the presence of officers of the Interborough Rapid Transit Company, representatives of the Fire Department and insurance companies and several other invited guests. Nine old cars formerly used in steam train service on the Manhattan Elevated were made up into three trains of three cars each and placed on adjoining tracks. The middle car of the middle train was set on fire by a specially devised electric arc, and after it was completely ablaze on the inside and the flames had broken through the roof and side windows the sprinklers were turned on by sending in an alarm with one of the push-button signals. In twenty seconds after the alarm had been sent in the sprinklers in the danger zone were in full operation. The pumps were started up and the sprinklers were kept in operation for eleven minutes. The spread of the fire was checked immediately after the water was turned on and the car on one side of the burning car which had caught on fire before the sprinklers started was saved from any further damage. The car on the other side was damaged only to the extent of a few broken windows and scorched paint. Neither of the two cars in the same train as the car that was set on fire was injured in any way. When the sprinklers were turned off the alarm signal was blown and four hose streams manned by shop employees were turned into the car in less than two minutes. The fire which remained on the inside of the car was quickly extinguished by these streams. The test proved conclusively that the sprinklers could be relied upon to check effectively the spread of a fire originating in a car and permit the other cars stored in the yard to be pulled out of the danger zone.

PROPOSED RATES FOR THROUGH ROUTES IN NEW YORK

The answers of the railway companies of Manhattan to the order of the Public Service Commission, First District, issued July 11, ordering them to establish through routes and joint rates, or, in other words, to transfer passengers at a large number of specified points in the city, and to notify the commission on or before Aug. 10 of the rates which have been established for these routes, were filed with the commission on that date. A letter of Adrian H. Joline and Douglas Robinson, receivers of the Metropolitan Street Railway Company, follows:

"We have conferred with representatives of the receiver of the Third Avenue Railroad Company and allied companies, with the receiver of the Second Avenue Railroad Company and with the general manager of the Central Park, North & East River Railroad Company regarding your order in Case No. 1364, dated July 11, 1911.

"The representatives of the joint committee on reorganization of the Metropolitan Street Railway Company were also brought into these conferences, as this seemed fitting in view of the expected transfer to them at an early day of the property in our charge. We have consented, at their suggestion, to enter into an agreement proposed by the various other companies concerned which provides for joint rates of fare similar in character to those covered by the arrangement between us as receivers of the Metropolitan Street Railway Company and the Central Park, North & East River Railroad Company, namely, that a so-called

'L' ride may be made for an 8-cent fare and a so-called 'Z' ride may be made for a 10-cent fare, subject to the condition that joint-rate tickets are to be sold only upon request of the passengers at the time when cash fare is paid; that joint-rate tickets are not to be sold to persons who tender a transfer in payment of fare, and that persons are not to be given transfers who purchase a joint-rate ticket or who tender a coupon of a joint-rate ticket in payment of fare.

"We are prepared to put this arrangement into effect as soon as the details of the plan may be perfected with the other lines involved."

A letter of similar tenor was received from F. W. Whitridge as receiver of the Third Avenue Railroad Company, the Forty-second Street, Manhattanville & St. Nicholas Avenue Railway Company and the Dry Dock, East Broadway & Battery Railroad Company; from the Kingsbridge Railway Company from Edward W. Maher, general manager, and from the Second Avenue Railroad Company from George W. Linch, receiver.

In his letter Mr. Whitridge specified that transfers were to entitle a passenger only to a continuous trip in one general direction by the most reasonably direct route. He also stated it to be his understanding that after the system had been in operation for a period of one month the division of fares should be agreed upon, but that if no agreement should be reached, then the portion of the fare which each line should receive would be determined by arbitration.

Mr. Whitridge also takes issue with the right of the commission to order the restoration of transfers as follows:

"I am advised, however, that notwithstanding any such agreement, it is my duty to reserve the right to challenge your legal power to require independent and competitive street railroad companies to interchange transfers with one another. According to the judgment of all engaged in the practical operation of the Third Avenue system, it is probable that the joint fares now proposed to be established will not afford reasonable and just compensation for the service rendered."

He adds that universal transfers will tend to restore conditions existing in New York when there was a monopoly in the surface lines, since the lines will be crowded by the passengers of their competitors at lower rates, removing the incentive to attract custom by better service. He says that the present earnings of his company are insufficient to pay a reasonable return on the investment and any additional unremunerative burdens will result in practical confiscation.

The South Shore Traction Company wrote asking for an extension of time and the receiver for the Twenty-eighth and Twenty-ninth Cross-town Railroad urged the commission to give special attention to the poverty-stricken condition of that company before insisting that the order be carried out.

In an interview Aug. 11 Charles H. Strong, counsel for the Central Park, North & East River Railroad, stated that this company at present was receiving only 3½ cents out of each 8-cent fare now in force between it and the Metropolitan Street Railway. He said that this line was the only one in Manhattan that is not now in the hands of a receiver and that the company believed that it should receive 4 cents of the joint fare instead of 3½ cents to make the traffic profitable.

The Public Service Commission will consider the replies of the companies next week.

The Mexico Electric Tramway Company has decided to spend \$500,000 on the construction of new lines in Mexico City. Among the work undertaken is the completion of the Atzacotalco-Tlalneantla line, the construction of the Peralvillo-Valbuena line and the electrification of several horse-car lines.

TREATMENT OF DEPRECIATION ACCOUNTS BY INTERBOROUGH RAPID TRANSIT COMPANY

The treatment by the Interborough Rapid Transit Company, of New York, of the depreciation accounts in the uniform system of accounting prescribed by the New York Public Service Commission, First District, has been the subject of hearings before the commission. The municipal testimony was offered on July 6 and consisted of a recital by Charles Frank, an accountant in the bureau of statistics and accounts of the commission, of the communications and records relating to the position of the company in this matter.

Mr. Frank testified that on or about July 1, 1909, the Interborough Rapid Transit Company filed with the commission a rule for combined maintenance and depreciation charges per car mile, as follows: Subway way and structures, 1.3 cents; subway equipment, 1.76 cents; elevated way and structures, 1.33 cents; elevated equipment, 1.38 cents. The reports of the company for July and August, 1909, showed charges not in accord with these figures. A letter calling attention to this discrepancy in the August, 1909, report was addressed by Travis H. Whitney, secretary of the commission, to E. F. J. Gaynor, auditor of the company.

On June 20, 1910, the company filed an amended rule relating to depreciation. On July 20, 1910, Frank Hedley, vice-president and general manager, was informed that the commission disapproved of the rule relating to depreciation of equipment on the ground that the modification was retroactive. On Sept. 7, 1910, a letter was written by the commission to Mr. Hedley calling attention to the accounting requirements of the commission relative to the treatment of depreciation and asking him to advise the commission what rate of depreciation would be used by his company during the year ending June, 1911, and to file with the rule supporting statements of experts. No replies were received to the two letters. On Feb. 25, 1911, the company filed an amended rule for the year ending June 30, 1911, as follows: For depreciation of equipment, 2.7 cents per car mile on the subway division and 1.5 cents per car mile on the elevated division; for depreciation of way and structures, 1.2 cents per car mile on the subway division and 1.33 cents per car mile on the elevated division.

The commission in a letter addressed to the company on March 8, 1911, objected to the amended schedule, stating that all amendments must apply to the fiscal period subsequent to the filing of the amendment and must not attempt to change the rule with respect to a fiscal period prior to the filing of the report.

POSITION OF THE COMPANY

On March 20, 1911, a letter was addressed to Mr. Whitney, secretary of the commission, by Mr. Gaynor, auditor of the company, which stated:

"We cannot agree with your interpretation of the accounting order to the effect that our practice in filing the amended rule does not comply therewith. The submitted reasons in this instance seem to indicate the wisdom and reasonableness of the part of the accounting order concerned in this matter.

"The company has departed from the rate provided by the rule heretofore filed for depreciation of subway equipment and now substitutes 2.70 cents per car mile in order that an extraordinary condition of car maintenance expenditures quite impossible to forecast when previous rules were filed—being the outgrowth of demands and requirements incidental to inauguration of ten-car express and six-car local trains in the subway—may be fully allowed for and an adverse balance now temporarily existing in the account 'accrued amortization of capital' be eliminated and the equilibrium of that account restored prior to June

30, 1911. The abnormal maintenance expenditures to which reference is made consist principally of alterations in draw-gear of cars, including installation of new type of drawbar and reinforcing underframes of certain types of cars; also revising, remodeling and improving the air-brake apparatus, overcoming the physical limitations heretofore existing in the pneumatic brake and installing the electro-pneumatic air brake deemed most satisfactory for ten-car subway operation.

"The reason which most readily occurs to us why a rule cannot be filed that may apply to the subway for the next five years is the almost universal admission that the specific information so necessary to the establishment of permanent depreciation allowances as part of operating expense accounts is not yet attainable."

DETAILS OF MONTHLY CHARGES

The accompanying statement, showing the actual monthly charge of the company in monthly reports to the commission and the different rules adopted, was presented by Mr. Frank:

COMBINED MAINTENANCE AND DEPRECIATION CHARGES PER CAR MILE

1909.	Subway		Elevated	
	Way and Structures.	Equipment.	Way and Structures.	Equipment.
July	\$0.0161	\$0.0136	\$0.0134	\$0.0103
August	.0143	.0142	.0137	.0117
September	.0151	.0149	.0119	.0125
October	.0144	.0153	.0120	.0117
November	.0138	.0138	.0109	.0148
December	.0063	.0269	.0180	.0216
1910.				
January	.0132	.0167	.0133	.0139
February	.0132	.0167	.0134	.0139
March	.0132	.0167	.0134	.0139
April	.0132	.0130	.0133	.0138
May	.0132	.0113	.0133	.0139
June	.0132	.0158	.0133	.0138
July	.0132	.0179	.0133	.0138
August	.0133	.0179	.0133	.0139
September	.0131	.0242	.0134	.0139
October	.0132	.0242	.0134	.0139
November	.0132	.0242	.0134	.0139
December	.0132	.0460	.0134	.0208
1911.				
January	.0069	.0326	.0134	.0151
February	.0122	.0274	.0134	.0151
March	.0121	.0273	.0134	.0151
Rule, July 1, '09	.0130	.0176	.0133	.0138
Rule, June 24, '1001550138
Rule, Feb. 25, '11	.0120	.0270	.0133	.0150

BABBITT BEARING FOR DOOR ROLLERS

Most door rollers are equipped with brass bushings A, as shown in Fig. 1, which can be renewed when worn out. The stud B on the casting is made with a flat place, so that the bushing will not turn. Any lost motion on the stud or the bushing, or when the door rides on the bottom, causes a great deal of trouble.

To remedy this, first remove the bushings, then tin the cast-iron stud to permit the melted babbitt to adhere to it. If the door rides on the bottom and is to be lifted up draw the wheel down off center as much as the door is to be lifted (see illustration "C").

Oil the bearings of the wheel so that the melted babbitt will not stick. Then pour in enough babbitt to make it flush with the wheel. The surplus babbitt can then be chipped off and the washer and cotter pin replaced. A repair shop man, who is connected with a medium-size electric railway, says that he has tried this method and by its use a pair of bearings can be repaired in a very short time, and when once repaired in this way they will give much better service than with brass bushings.

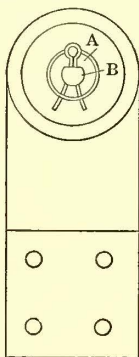


FIG. 1.

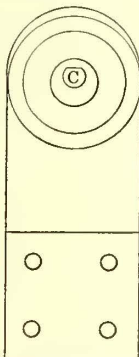


FIG. 2.

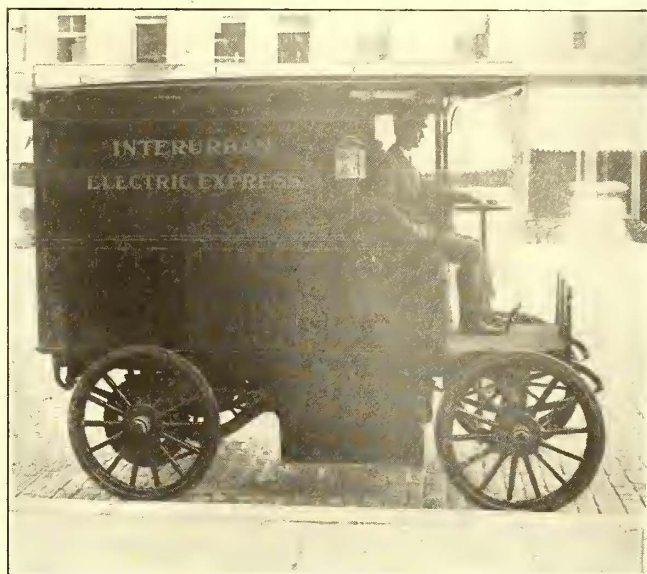
Scheme for Replacing the Brass Bushings of Door Rollers with Babbitt Bearings

NOTES ON INTERURBAN FREIGHT AND EXPRESS TRAFFIC IN NEW YORK STATE

Most of the interurban roads in New York State conduct a package freight business with or without wagon collection and delivery service, but only a few companies handle freight in carload lots on the basis of a switching charge. The following notes give some particulars of the service, rates and methods of soliciting freight and express business of a number of representative companies.

NEW YORK STATE RAILWAYS—ROCHESTER LINES

The New York State Railways, Rochester & Sodus Bay and Rochester & Eastern lines, operate an express business in and out of Rochester, but the business is not growing very rapidly on account of limited terminal facilities in Rochester and because a city ordinance prohibits the operation of freight and express cars through the streets of Rochester during the daytime. On the Rochester & Sodus Bay line the inbound shipments consist principally of eggs, dressed meat, fresh fruit, milk and other provisions, while the outbound shipments are confined to bread, ice cream, produce and merchandise consigned to small stores in the nearby towns. The Rochester & Eastern line handles only a small amount of inbound express but handles a good



Electric Delivery Wagon in Rochester

volume of outbound merchandise to points as far as Geneva. It also does a carload switching business in connection with the steam roads in its territory for which it receives a flat rate per car. No less-than-carload freight is interchanged with the steam roads nor is the electric line a party to any joint freight tariffs with other steam or electric roads.

Two classes of service are given: Class A, which includes wagon collection and delivery in Rochester, Geneva, Canandaigua and Victor, and Class B, which covers transportation between stations only. There are no large towns on the Rochester & Sodus Bay line, and Class A service at these points includes pick-up and delivery from and to the sidewalk.

The Class A rates are approximately the same as those charged by the old-line express companies, while the Class B rates are from 3 cents to 5 cents per 100 lb. higher than those of competing steam roads. All Class A express is carried on passenger cars, while Class B express is shipped in motor express cars which are moved through Rochester at night.

The Class A express terminal in Rochester is located in the rear of the carhouse at Court and Exchange Streets,

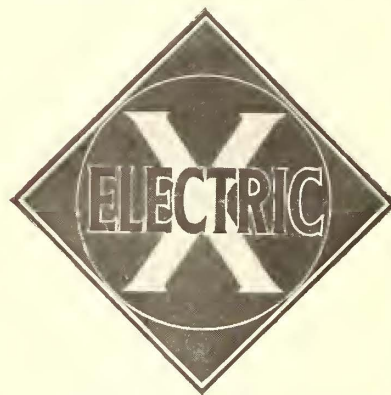
very close to the center of the business district of the city. The wagon collection and delivery service in Rochester is done by contract by the Independent Messenger & Delivery Service Company, which handles the deliveries of a large number of small merchants in Rochester. This company furnishes two electric automobile delivery wagons for the exclusive use of the railway companies within the business district and makes collections and deliveries in the outlying sections with its regular wagons as required. The automobiles make collections and deliveries over regular routes in the business district at 8 a. m., 12 noon and 4 p. m. daily, except Sunday. The railway pays a flat rate for the wagon service and finds the arrangement to be satisfactory in every respect. It is enabled to give collection and delivery service throughout the city without the trouble or expense of maintaining its own drivers and teams. From ten to twenty wagons would be required to cover the same territory and the cost of these would be prohibitive if only the railway business were handled.

In Geneva, Canandaigua and Victor arrangements are made on a commission basis with local cartmen for the

eral express agent, with offices in Utica. In order to accommodate all classes of shippers and charge accordingly three classes of service are given between Syracuse, Utica, Rome and Little Falls. Class A includes wagon collection and delivery, Class B includes wagon collection or delivery, and Class C no wagon service. Merchandise and special commodity rates are quoted in the tariffs of the two companies, but the minimum charge on any shipment of any class is 25 cents. On both merchandise and commodity rates the charge per 100 lb. for any distance is 5 cents higher for Class B service than for Class C service, and 5 cents higher for Class A service than for Class B service. The Class A rates are about the same as those of the old-line express companies operating on the parallel New York Central lines.

Wagon service is given in nearly all the towns reached. The two companies keep about twenty horses, wagons and drivers in daily service. In Utica and Syracuse the wagons cover regular routes and shippers are supplied with call signs bearing a distinctive symbol. One of these signs is reproduced. Outside of the business district of Utica the

railway companies' wagons make calls for collection of freight and express on notification, and as many as 150 such calls have been made in one day. The horses and wagons used for delivery service in Utica are housed in a stable adjoining the freight house. This stable and freight house were illustrated and described in the ELECTRIC RAILWAY JOURNAL for Sept. 4, 1909.



Wagon Call Sign of Utica & Mohawk Valley

A fast freight service is maintained out of Utica to all points on the Otsego & Herkimer Railroad. A motor express car leaves the terminal in Utica at 8 a. m. daily except Sunday. Express cars also leave the terminal in Utica daily except Sunday for points on the Utica & Mohawk Valley east at 7:15 a. m., 11:30 a. m. and 2:30 p. m., and for points west at 7:30 a. m., 11 a. m. and 4 p. m. For points south a car leaves at 8 a. m. and for points on the Oneida Railway cars leave at 7:15 a. m. and 1:15 p. m. As an indication of the volume of the express business of these two companies it may be noted that in the year ended Dec. 31, 1910, approximately 45,012,627 lb. of express and freight were handled in and out of the freight station in Utica.

OTSEGO & HERKIMER RAILROAD

This road is equipped to handle all kinds of freight and interchanges freight cars with connecting steam roads at Mohawk and Oneonta. The freight equipment consists of one electric locomotive able to haul a train of fifteen loaded cars; four motor freight cars with a carrying capacity of 20 tons each and capable of hauling two or three loaded box cars as trailers, and twenty box, flat and gondola cars. Through freight service is given from Oneonta to Utica in connection with the Utica & Mohawk Valley Railway. A motor freight car leaves each terminal daily except Sunday at 8 a. m. and makes the run of 70 miles in about eight hours, returning the next day. These cars haul trailers in both directions between Oneonta and Hartwick, a distance of 18 miles. A local freight train which handles both package and carload shipments runs between Hartwick and Oneonta and between Hartwick and Mohawk three times a week to interchange shipments with steam road connections.

Thirteen freight stations with agents are maintained. At

The Rochester and Eastern Rapid Ry. Co.
 Electric Express Purchasing Department.

_____ 190

Please request your Company at _____
 to call at _____

for the following articles to be forwarded by return express

Signed _____
 Address _____
 Destination _____

I hereby acknowledge receipt
 of above order _____ Agent _____

Time _____ Date _____

Rochester & Eastern—Agent's Order Blank

delivery and pick-up service. They receive 20 per cent of the revenue on all inbound and outbound Class A express.

The express business is in charge of a general passenger and express agent, who has an assistant general express agent as an outside solicitor. New business is solicited by him personally in Rochester, but the local agents in the smaller towns are depended upon to get business from their territory. To assist the merchants in the small towns in getting shipments promptly from jobbers in Rochester the express department supplies its agents with order blanks, one of which is reproduced. The merchant fills out one of these blanks in the agent's office and it is forwarded by train mail to the agent in Rochester, who telephones the order to the jobber and has the wagon call for the shipment when it is ready. This saves the consignee the expense of a long-distance telephone call or telegram and is much quicker than sending the order through the mail. No charge is made for this service, but the railway company assumes no responsibility for payment for the shipment or for the accuracy of transmittal of the order.

UTICA & MOHAWK VALLEY RAILWAY—ONEIDA RAILWAY

The freight and express business of these two roads, which are under one management, is in charge of a gen-

four of the larger towns separate freight houses about 30 ft. x 60 ft. are provided, and at the other stations the freight rooms in the combination station buildings are about 20 ft. x 20 ft. In Utica the through cars of the Otsego & Herkimer Railroad use the freight terminal of the Utica & Mohawk Valley Railway, but the loading and unloading is done by the car crews. At Mohawk the West Shore Railroad has a spur track connecting with the electric line, and in Oneonta two yard tracks of the Delaware & Hudson have been equipped with overhead trolley wires to facilitate switching of interchanged cars.

Permanent and temporary sidings are furnished by the railroad company for farms and industries. The former are built and maintained by the railroad at places where permanent traffic is assured; the latter are put in to serve portable sawmills, etc. The person to whom is furnished a temporary siding must do the necessary grading and furnish the ties, but the railroad furnishes and lays the rails without charge. Stock pens and loading chutes have been built at most of the stations. The chutes are made of six 6-in. posts set in two rows 4 ft. apart with cross pieces spiked to them at the proper height to form a slope for the floor boards from the ground to the height of a car floor. Boards are nailed on the posts to form sides and a small pen is built at the bottom. The cost of these pens and chutes is less than \$35 each.

The freight and express business is in charge of a general freight and passenger agent, who has an assistant to do most of the soliciting and outside work. All local agents receive a straight salary and are expected to do soliciting in their territory. The assistant general passenger and freight agent makes frequent calls on all jobbers, merchants and industries on the company's own line and on connecting lines where business may originate. Receivers of freight are asked to sign routing orders to be delivered to shippers by the solicitor. One of the most important increases in traffic has been accomplished through an educational campaign conducted among the farmers to show them the profit in raising marketable crops, especially vegetables, for the New York market. A mailing list of the names of all farmers living within 5 miles of the road was secured and a circular letter was sent to each, suggesting some of the crops which might be profitably grown in that section of the State. Later, in co-operation with the State Agricultural Department, several meetings of farmers were held at which the methods and results of growing new crops were discussed. An effort was made to place the farmers in touch with the best markets. This educational work has produced very gratifying results in increased shipments of produce. In 1908, before the farmers' meetings were held, no peas were grown for shipment, but in 1909 a total of 40 acres was cultivated and in 1910 about 60 acres were planted, which produced shipments of several hundred bags a day during the season. In the potato shipping season of 1907-1908 only twenty cars of potatoes were loaded on the road, but in the season of 1909-1910 more than eighty carloads were shipped. Grain, coal, hay and lumber constitute the principal carload shipments.

The United States Express Company operates over the Otsego & Herkimer Railroad and the business has shown a very satisfactory growth for the last two years.

ELECTRIC EXPRESS

The Hudson Valley Railway and the United Traction Company of Albany formerly operated their own express and freight service and the Schenectady Railway operated the "Electric Express" as an independent business. In February, 1909, the three railways decided to consolidate and pool their express freight business under the name "Electric Express." Each company rents its cars and freight stations to the Electric Express for a fixed sum per year and furnishes the car crews and power, for which a charge of from 20 cents to 25 cents per car mile, empty or

loaded, is made. The Electric Express employs its own agents, who are paid a salary, and supplies the necessary platform labor in the freight houses. The agents report to the manager of the Electric Express, C. H. Armitage, who is also traffic manager of the Hudson Valley Railway and the United Traction Company.

Two regularly scheduled freight cars are operated daily in each direction between Albany and Troy, Albany and Schenectady, Troy and Glens Falls, and Troy and Stillwater. All through freight from Albany to points north of Troy is transferred in Troy. When extra car movements are required the agent at the originating point arranges with the railway superintendent for an extra crew and the necessary orders are given for moving the car.

On the Hudson Valley Railroad a considerable carload business is done and the charges are based on a distance tariff to which the official steam railroad classification is applied. The electric road has switching connections with the Boston & Maine at Stillwater and Thomson and with the Delaware & Hudson at Mechanicville, where cars are received and delivered, but no joint rates on through shipments are in force and the tariffs of the electric road are in the nature of a switching charge. Industrial and farmers' sidings are paid for by the shipper, but in case a car is consigned to a point where there is no siding it may be unloaded from the main line at such times as will not interfere with regular traffic. A charge of \$2 per hour is made for this to cover the waiting time of the motor car. Owing to franchise restrictions steam railroad cars cannot be hauled through Saratoga Springs or Glens Falls and no carload shipments are accepted for transportation where the routing involves a movement through these two towns. The principal carload business consists of shipments of pulp wood, pulp and paper and coal.

Prior to Oct. 1, 1909, the Electric Express gave a wagon collection and delivery service in Albany, Troy and Schenectady, but it was conducted at a loss and was discontinued on that date. Shipments fell off slightly at first but gradually increased again, and the business, which formerly showed a deficit, is now a source of profit.

ALBANY SOUTHERN RAILROAD

The Albany Southern Railroad is an electrified steam road 36 miles long which reaches a number of small towns not served by other steam or electric railroads. The American Express Company, which operates over this line, handles most of the package freight shipments, but the railroad also does a large carload and l.c.l. business. Cars are switched to and from the New York Central at Rensselaer and Hudson and to and from the Boston & Albany at Niverville, but no through rates are in force. The Albany Southern applies its local rates from the junction point with the steam railroad receiving or delivering a car. During the navigation season the Albany Southern interchanges carload and l.c.l. freight with the Hudson River night boats at Albany and Hudson, and joint rates are in force covering this traffic. The freight is carted from the boat dock in Albany to the railroad freight house in Rensselaer across the river. The minimum first-class rate is 20 cents per 100 lb., of which the railroad receives 10 cents and absorbs the trucking charge of 3 cents.

Wooden freight houses and team tracks are provided in most of the towns reached, and sidings have been built to serve a number of industries along the line. At Nassau a large piano action factory has been erected recently, and all of its inbound and outbound shipments, amounting to several cars a week, are handled by the Albany Southern. In Rensselaer and Valatie are large knitting and finishing mills, which are served only by sidings from the electric line. Two large dairies ship milk to New York City by way of Rensselaer, and at East Shodack there are a cider mill and a hay and grain warehouse which furnish large shipments during the summer months. Milk is shipped in car-

loads to New York and in smaller quantities to Albany and Hudson. Two express cars are shipped to New York each day, and the Albany Southern receives 25 per cent of the through rate. The revenue from this source is about \$450 a month, and between \$300 to \$350 is received from milk carried in cans in passenger cars. The earnings from other freight are about \$3,000 per month, mail, \$145 per month, and express, \$250 per month.

STRIKE ON CONEY ISLAND & BROOKLYN RAILROAD

The conductors and motormen of the Franklin Avenue, Smith Street and Hamilton Avenue lines of the Coney Island & Brooklyn Railroad, Brooklyn, N. Y., went on strike on Saturday morning, Aug. 5, 1911, to enforce their demands for an increase in wages and for changes in the agreement between the company and the employees which expired on July 1, 1911. The employees of the DeKalb Avenue line of the company, however, previously expressed themselves as satisfied with the separate agreement between them and the company and remained at work.

The employees who went on strike demanded a flat wage of 25 cents an hour for the first ten hours and all straight runs, with all time over ten hours at pay and a half and no swing run to pay less than \$2, the run to be completed within thirteen hours, the excess time over thirteen hours to be paid for at the rate of time and a half. Under the agreement which expired on July 1 the men received 23 cents an hour for the first ten hours with pay at time and a half for overtime and with pay for swing runs at the rate of \$1.75. The men proposed, however, that the regular tables should continue to be composed of two-thirds straight runs. The agreement which expired provided for a full and impartial hearing in all cases where men were arraigned for infractions of the rules, but this the men wanted modified so as to provide that "all complaints be investigated before motormen and conductors are suspended." In one of the sections of the agreement which expired the company agreed not to object to any motorman or conductor belonging to any labor organization, but the men wished this changed so that any employee not in good standing with the union would be discharged. This change the company declined to make. Among the minor demands the men desired that motormen or conductors instructing new men should be paid 25 cents a day extra.

In all about 390 men are employed on the Franklin Avenue, Smith Street and Hamilton Avenue lines of the company, this number including about ten men members of the organization to which men on the DeKalb Avenue line belong. The Franklin Avenue and the Smith Street cars operate to Coney Island, as do also the DeKalb Avenue cars. The Smith Street line is operated from New York by way of the Brooklyn Bridge through the Gowanus section, while the Franklin Avenue line is operated from New York by way of the Williamsburg Bridge through the Wallabout Canal section.

The company manned cars of the Smith Street and Franklin Avenue lines with men who had been secured by its own employees, but discontinued this service at 6 p. m. On Sunday, Aug. 6, cars were run on both the Smith Street and Franklin Avenue lines on a one-third schedule all day, the service being discontinued about 8 p. m. On Aug. 7 the company operated a five-minute service on Smith Street all day and a ten-minute service on Franklin Avenue, but at night it operated cars only as far as the Park Circle, 5 miles from Coney Island. On Aug. 8 the regular day service was resumed on these lines with cars to Coney Island until 10 p. m. On Aug. 9 the same conditions prevailed, with cars in operation all night in the city and to Coney Island. On Aug. 10 the regular schedule was resumed on all lines.

The company requested the men formerly in its employ

to report for their pay on Aug. 8 and turn in the property of the company still in their possession, but very few of them did this.

On Aug. 10 S. W. Hoff, president of the company, announced that the operation over all lines of the company being normal the company was signing up for regular runs those of its present employees who wished to stay with the company and that on Aug. 11 employment of outside men would be begun to fill such vacancies as existed.

On the first two days of the strike there was considerable lawlessness, but with additional police protection and the speedy punishment by the courts of those who were arrested the rioting subsided. In the city proper a policeman was stationed at every corner of the lines affected and in the middle of each block, and to Coney Island Avenue, between the Park Circle and Coney Island, which is sparsely settled, fifty mounted police and forty patrolmen were assigned to preserve order.

CONDITIONS SURROUNDING DES MOINES LABOR TROUBLES

A strike of the car men on the Des Moines (Ia.) City Railway which threatened to become serious was quickly brought to a pause on Aug. 5 by an injunction granted by the judge of the District Court of Polk County, of which Des Moines is the capital.

The strike followed the discharge of Conductor B. L. Hiatt and the refusal of the company to reinstate him. The reasons for the dismissal of this conductor were stated to be about as follows: On July 20, 1911, an inspector boarded Conductor Hiatt's car and noted that there were several more passengers on the car than indicated by the register. The inspector called the conductor's attention to the condition of his register and it is stated that the conductor became abusive and used foul language in the presence of passengers when denying that he had failed to ring up collected fares. The conductor was discharged. He stood accused of having violated two rules of the company—one by failing to ring up fares, which he denied, and the other by using profane language in the presence of passengers, which it is said that he admitted. On this basis the company refused to reinstate him on application of the union, which is a local of the Amalgamated Association. The company maintained that the contract with the union did not require the company to submit to arbitration the question of whether the management had the right to discharge an employee who confessed that he had violated rules. The management also stated that the outcome of previous cases of this sort had confirmed the present interpretation of the contract, and that any other construction put upon the wording of the contract between the company and the union would immediately destroy discipline.

The agreement of the company with the local union was dated Oct. 11, 1906, and covered a period of five years. It was a so-called "open shop" contract, the railway agreeing that it would not oppose men joining the union and the union, in turn, agreeing that it would not use undue influence to compel employees to join it. Another feature of the contract said that there should be no cessation of work during the adjustment of grievances. The wording of this section of the contract is as follows:

"The employees of the railway company governed by this agreement agree that there shall be no cessation of work on their part for any outside cause or grievance, nor shall there be any cessation of work on their part from any cause whatsoever by the motormen and conductors of the railway company belonging to the Amalgamated Association during the period covered by this agreement; and it is understood and agreed by the parties to this agreement that all motormen and conductors belonging to the Amalgamated Association shall comply with all rules and regula-

tions now in force, or that may hereafter be made and adopted by the railway company, that do not conflict with the terms of this agreement."

The strike began at 1:15 a. m. on Aug. 5 and during Saturday the streets of the city were scenes of disgraceful rioting which the city authorities seemed unwilling or powerless to check. Mobs roamed in all directions, stoned the few cars which were operated and savagely attacked the motormen and conductors in charge of these cars. Three non-union men were arrested on the charge of carrying concealed weapons. Under the law the superintendent of the Department of Public Safety has charge of the duty of suppressing disorderly conduct, but this duty seemed to have been entirely neglected, and J. R. Harrigan, vice-president and general manager of the company, entered a formal complaint that the department had been delinquent in this duty.

THE INJUNCTION

On Aug. 5 Judge Lawrence De Graff, at the request of the executives of the city of Des Moines, granted a mandatory writ of injunction and car service was resumed on the morning of Aug. 6. This injunction was issued as the result of a bill filed by the city executives. Des Moines for the last few years has had the commission form of government and it is quite generally known that the political situation under this form of government has not been such as to assist the railway company in rehabilitating its property and improving its service. The city officials filed with the court a bill, making the Des Moines City Railway Company, with its officers, and the labor union, with its officers, the defendants.

The bill alleged that the controversy between the company and the union over the discharge of Conductor Hiatt had resulted in a strike which caused disorder in the city and which the city was unable to control, causing inconvenience to the public, paralyzing business and endangering life and property. The bill also alleged that a contract existed between the company and the union under which the union claimed and the company denied the right to arbitrate the Hiatt controversy, and that by reason of the public character of the controversy the city and the public were interested in this contract, also that cars standing on the streets were a nuisance. As a result of this bill it is reported that without notice the court granted a preliminary injunction, effective until further order of the court, requiring the company to reinstate Hiatt, requiring the union to rescind its strike order and end the strike and requiring the company and the union to continue the operation of the cars. The company and the union both acceded to the order under penalty of contempt of court.

The notice of the injunction as issued to the Des Moines City Railway on Aug. 5 by the clerk of the court contained the following:

"WHEREAS, the city of Des Moines as plaintiff has this day filed in the office of the clerk of the District Court of the State of Iowa, in and for Polk County, a petition duly sworn to, making the above-named parties defendant therein, and praying for the allowance of a writ of injunction against said defendant; and,

"WHEREAS, the Hon. Lawrence De Graff, one of the judges of the District Court of said county, has made an order allowing said writ of injunction to issue, upon the filing of a bond, with sureties, pursuant to said order; and, whereas, said order has been complied with, and such bond filed and approved; now, therefore, you, the said Des Moines City Railway Company et al., defendants, as aforesaid, in the name and by the authority of the State of Iowa, are hereby strictly enjoined and commanded to forthwith reinstate B. J. Hiatt in the service of said street railway service.

"Commanding the Amalgamated Association of Street and Electric Railway Employees of America (Div. 441) and the officers and executive board thereof above named

to forthwith revoke and rescind strike order heretofore issued and all of the members of said association to return to their respective employment or places.

"Commanding said defendants above named to operate the street railway referred to in petition as the same was operated prior to Aug. 5, 1911, all of said acts so enjoined and commanded to be forthwith done and performed until the further order of our said court in the premises."

After the writ of injunction had been presented to the meeting of the union the car men notified the management of the railway that the strike order had been rescinded, and in turn the car men were notified that the railway would carry out the order of the court as laid down by the judge.

The injunction as issued did not set a date for a final hearing and the attorneys for the street railway company have stated that they will ask an immediate hearing. Meanwhile it is expected that the attorneys for the city will attempt to secure a continuance and keep the temporary order in effect as long as possible or at least until after the State fair. The press reports N. T. Guernsey, attorney for the railway company, as declaring the court to be without jurisdiction in the matter and expressing the belief that the injunction will be dissolved. In that event the conditions would be as they were previously; that is to say, the company no doubt would refuse to employ the discharged conductor and the union would again call a strike.

A statement credited to the railway company and published in the Des Moines papers of Aug. 7 is as follows:

POSITION OF COMPANY

"The order in the suit brought by the city last night was signed and filed without any notice to the company that it was proposed to bring this suit. We have obtained a copy of the petition and have had a conference over the matter, which has resulted in the following conclusions:

"First—The company is a law-abiding citizen, and while it believes that the order in question is clearly erroneous it will obey this order so long as it continues in force.

"Second—The company will, with the least possible delay, in the proper way, bring up for determination and have determined the question whether this order was properly entered and, if it was not so entered, will have it set aside.

"This disposes of the existing situation. What the company will do when the situation changes it will determine at that time.

"We hope that we are wrong and that the city is right with reference to this order. If this order stands it means that a public service corporation having a contract with a labor union has a right to go into court and secure a mandatory injunction prohibiting the labor union from striking and requiring it, in case a strike has been called, to rescind the order calling the strike. It is obvious that if this is the law a way has been pointed out for handling these labor difficulties which will be more economical and efficient than any method that has yet been suggested."

On Aug. 9 the Des Moines Railway filed its answer and a motion with the court to dissolve the injunction. The principal feature of the answer is the charge that the company was unable to operate its cars during the strike on account of the failure of the city police to furnish the necessary protection. In its motion for dissolution the company alleges lack of jurisdiction on the part of the court and also a failure on the part of the court to give notice that the order was to be granted. The company alleges that the city brought its suit in collusion with the union for the purpose of compelling the reinstatement of Hiatt; that it is void because the city failed to suppress the disorder but instead arrested employees of the company while endeavoring to move the cars, and that the court is without power to compel the company to employ men against its will.

H. W. Byers, corporation counsel of the city of Des Moines, is reported to have made the following statement in reply to a published statement of Samuel Gompers, who declared that the city's action in settling the street-car strike was a blow to organized labor. Attorney Byers says that if the injunction is sustained the relation of employer to employee will be in no wise affected. Attorney Byer's statement in part is as follows:

"In view of Samuel Gompers' comment on the meaning of Judge De Graff's order on the street railway matter, I have been requested to state through the press the basis of Judge De Graff's jurisdiction and powers in the matter as I understand them and the probable effect of the principles involved, if sustained, upon labor unions and their members.

"In preparing and presenting the petition in the case of Judge De Graff, the city rested its right to a mandatory writ of injunction upon the following, among other grounds:

"First.—Street railway service is a public necessity in the city of Des Moines. The Des Moines Street Railway Company and the employees involved in Judge DeGraff's order voluntarily assumed the obligation to perform that public service and are bound to meet the duty and obligation thus assumed in a manner that will not be harmful to the public, either in injury to the citizen or destruction to his property.

"Second.—The city and the public are, in one sense, beneficiaries under the working agreement existing between the Des Moines City Railway Company and its employees, and the law will not permit such a violation or breach of the contract as will necessarily result in injury to either the city or the public.

"Third.—Under the law in this State the city is not only given the control and supervision of the streets, avenues and alleys of the city, but it is made its duty to keep them free from obstruction and to maintain them in a safe condition for public travel and use. To fully and completely exercise its power over its streets and to meet the duty and obligation enjoined upon it by law it may properly invoke the aid of a court of equity and especially so when the basis of relief asked is the threatened interference with the free and unobstructed use of the streets by the people and the threatened destruction of property.

"The above were the principal grounds relied upon by the city in the proceedings before Judge De Graff, and, while it may be that the case is an unusual one, the principle involved is as old as civilization. The situation was unusual and demanded the exercise of extraordinary powers. If Judge De Graff's order is sustained, as we hope and firmly believe it will be, it will not result in enslaving labor as suggested, nor in any manner changing or affecting the relation of employer and employee. Their difficulties will have to be settled and adjusted between themselves under well-established rules of law. It will, however, be a vindication of the principle recognized in every country where obedience to law is the test of good citizenship that in case of conflict the rights and interest of the individual and the corporation must give way to the larger and more important interest of the public."

EXHIBIT ARRANGEMENTS

The exhibit committee of the American Electric Railway Manufacturers' Association announces that it has made special contracts in connection with the Atlantic City convention with the Ingalls Construction Company for all electric signs, power connections and special lighting, with C. M. Koury for all Oriental rugs and carpets, Edwards' Floral Exchange for all plants and flowers and floral decorations, and with Shoemaker & Company for furniture. In consideration of these contracts, these dealers have agreed to have everything ready in space of an exhibitor by Oct. 7, provided orders are placed at once.

COMMUNICATION

THE LARGEST CABLE ORDER

BERLINER ELEKTRICITÄTS-WERKE

BERLIN, July 22, 1911.

To the Editors:

An article appears on page 1028 of your issue of June 10 regarding an order for cables recently placed by the Boston (Mass.) Elevated Railway Company in which you say that this order is said to be the largest ever given for underground cables. We take the liberty of calling your attention to the fact that we have placed an order with the Allgemeine Elektrizitäts-Gesellschaft at Berlin, Germany, for this year's extension of our distribution system from our Oberspree power station for the following underground cables:

One hundred and fifty-five miles three-conductor, paper-insulated, lead-incased, iron-armored cables, with a cross-section of $3 \times 50 \text{ mm}^2$ ($3 \times 100,000$ circ. mil) copper and for 30,000 volts working pressure. The manufacture of this order calls for about 749,000 lb. of copper, 1,156,575 lb. of paper (578 tons), 4,846,600 lb. of lead, 1,762,400 lb. of hoop iron and 1,321,800 lb. of jute, tar, etc.

Five hundred and fifty-five cars were required to transport the finished cables.

In addition to the above the following cables have also been required this year for the extension of the company's distribution system:

Ninety-three miles of three-conductor, paper-insulated, lead-incased, iron-armored cables, with a cross-section of $3 \times 10 \text{ mm}^2$ ($3 \times 20,000$ circ. mil) copper and for 6000 volts working pressure;

Forty-seven miles of cables of like pattern with a cross-section of $3 \times 50 \text{ mm}^2$ ($3 \times 100,000$ circ. mil) copper and for 1000 volts working pressure, and

Five hundred and ninety miles of testing and telephone cables.

The figures given above do not include those necessary for this year's extension of the network of the city of Berlin and those suburbs which are being supplied with electricity by our works.

BERLINER ELEKTRICITÄTS-WERKE.

A FIELD COIL REPAIR ECONOMY

The Toledo Railways & Light Company has in service a number of motors equipped with spool-wound-type field coils. Grounds on such coils generally occur between the inside layer of the winding and the shell on which the coil is wound, with the result that the defective coil must be stripped and rewound. In the Toledo shops, as fast as grounded coils of the spool-wound type develop, the spools have been split by taking a cut about $\frac{1}{4}$ in. wide out of the center of the spool. The two separate flanges are then applied to the coil after it has been wound on a wooden form.

There are two advantages of this construction. By removing the flanges and the underlying insulation internally grounded field coils very often can be repaired at minimum cost. Drying out of the field coil insulation tends to loosen the winding on the spool, resulting in a shaky coil and ultimately a loose connection. With the split spool the coil can be held securely in place by tightening up the pole piece bolts.

The Sao Paulo Tramway, Light & Power Company, Sao Paulo, Brazil, Ltd., generates its current from a waterfall of the River Tiété, which is situated 23 miles from the city and is capable of developing up to 60,000 hp. Power is conveyed by transmission line built upon the company's private right-of-way. The company operates 105 miles of track in the city and surrounding districts.

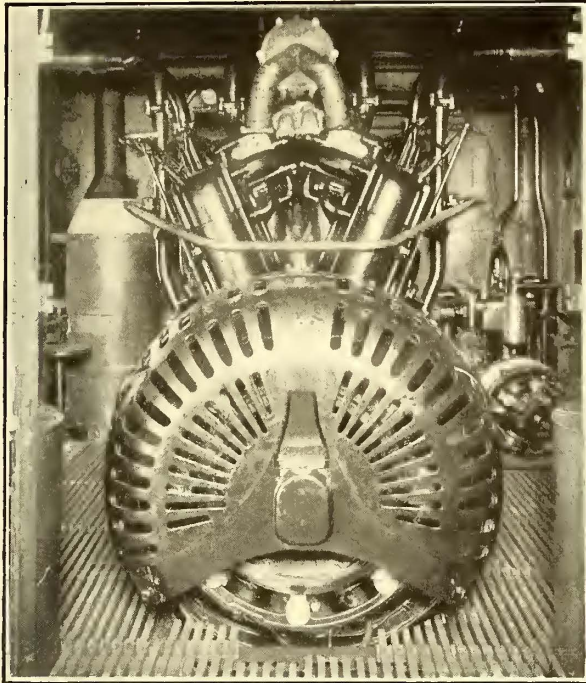
GAS-ELECTRIC CAR FOR SAN FRANCISCO RAILROAD

A short article on the six gas-electric motor cars which the St. Louis & San Francisco Railroad Company has purchased from the General Electric Company was published in the *ELECTRIC RAILWAY JOURNAL* for July 22, but further particulars are now available.

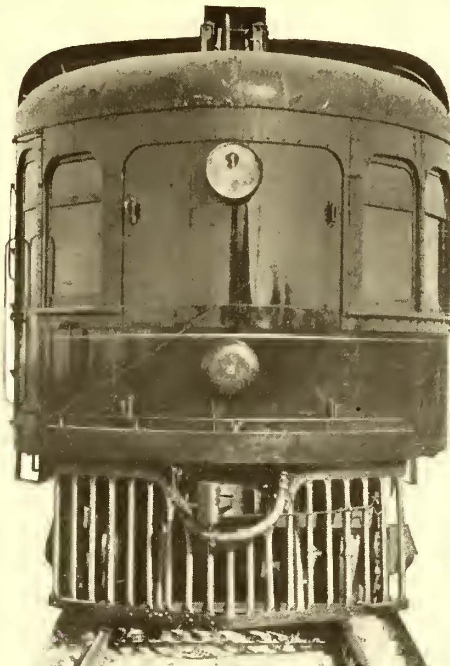
The cars are 70 ft. long and 10 ft. width over the sills, with arch roof, pointed front end and observation rear plat-

and drinking fountain. Electric fans are installed in each compartment. The seats are of unusual length, providing commodious accommodations for two persons and are amply large enough to seat three. The partition between the baggage room and negro compartment is movable and may be arranged to give the baggage compartment a length of 8 ft. or 1 ft. 5 in. to suit traffic requirements.

The framework of the car is entirely of steel, the under framing consisting of two I-beams for center sills and two channels for outside sills with truss rods for reinforcement. The center sills extend through to provide suitable supports for the rear platform. The outside sheathing is of sheet steel riveted to the posts with bats at the joints. The posts and carlines are of steel T's. The roof is of galvanized iron plates riveted to the carlines, except under the radiators, where it is of copper with well soldered joints. The floors in



Gas-Electric Car—Main Engine and Cab



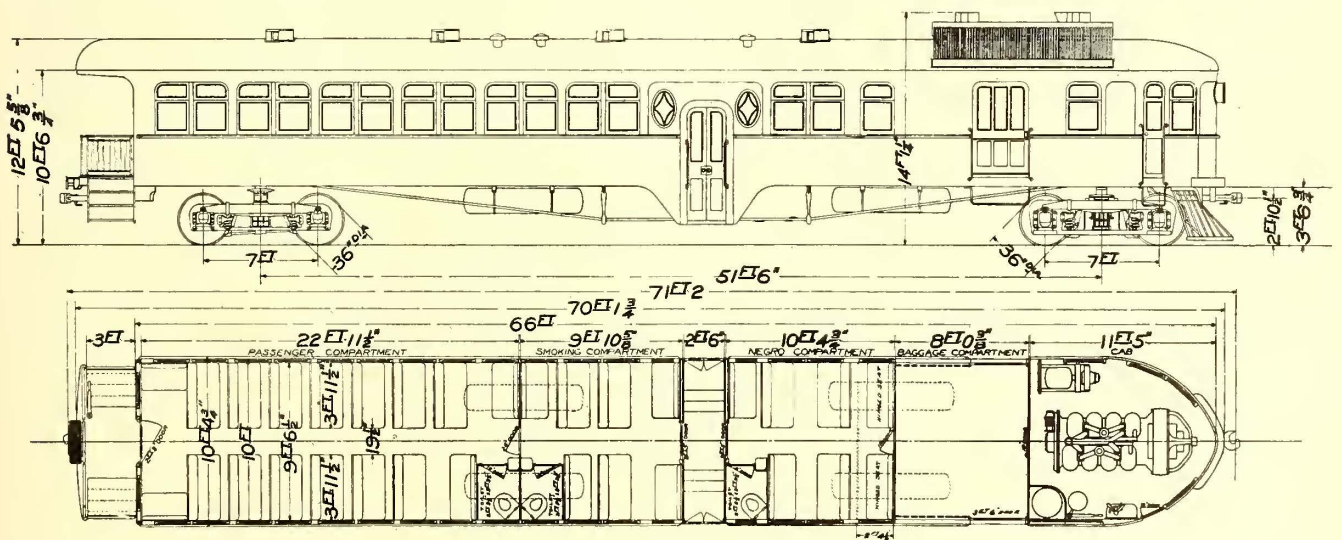
Gas-Electric Car—Front View

form. They are designed with special reference to light construction with adequate strength. The interior arrangement is designed to meet the Southern traffic conditions, providing separate accommodations and entrances for white and colored passengers. The observation platform is unusually wide and is equipped with trapdoors and brass railings. The windows are large, fitted with plate glass

the passenger compartments are of two thicknesses with a heavy layer of felt between. There is also an additional lining of sheet iron beneath the lower wood floor.

Equipped and ready for operation the car will weigh in the neighborhood of 48 tons.

The power equipment is located in the cab at the front end of the car and consists of the following: A main gas



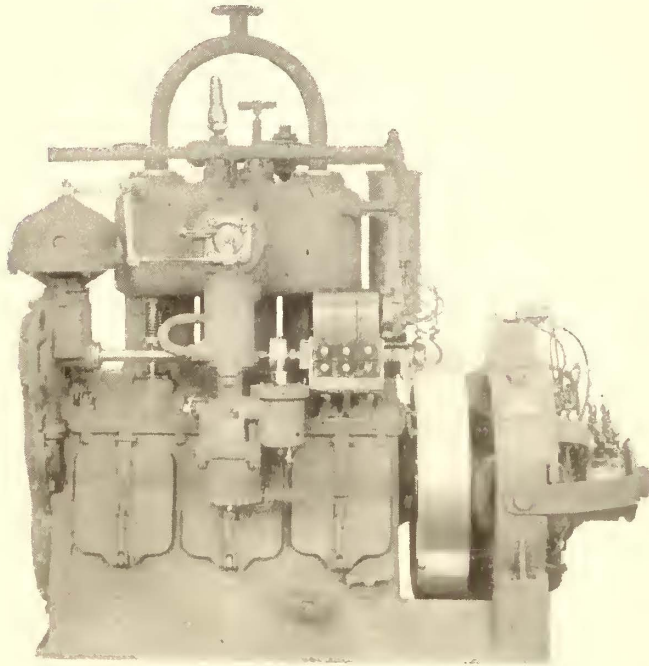
Gas-Electric Car—Elevation and Plan

and so arranged that they may be raised to a height of 17 in. The window curtains are of pantasote and equipped with pinch handle fixtures. The interior of the car is finished in a high grade of mahogany with paneling on the bulkheads. Each of the three compartments has a toilet

engine generating set, consisting of an eight-cylinder gasoline engine with direct-connected generator, an auxiliary gas engine generating set with integral air pump and lighting generator, equipment for motor control, air and hand brake systems, pneumatic bell ringer, sander, warning and

signal whistles and a coal-fired hot-water heater. The motors are mounted one upon each axle of the front truck.

The main gas engine is of the eight-cylinder, four-stroke cycle "V" type. The generator magnet frame is bolted to the frame of the gas engine, which rests upon the floor of the car with cushion support. The speed of the engine is adjusted by a throttle, the normal speed being 550 r.p.m. The cylinders are 8 in. in diameter with 10-in. stroke. The ignition system consists of two low-tension Bosch mag-



Gas-Electric Car—Auxiliary Engine and Generator

netos, one for each side of the engine, with Bosch magnetic spark plugs. The engine is lubricated by oil under pressure, delivered by a plunger pump direct-driven from the crankshaft. Gasoline is delivered by a direct-driven pump to the carburetors, which are of the automatic constant level type. The engine-cooling system consists of thermo-siphon circulation of the water in radiators of fin tube type, which are located on the roof of the car, with flexible metal tube connections from the engine to the radiator headers. The engine is started by air stored in tanks beneath the car, which may be charged from the auxiliary gas engine set or from the main compressor located at the rear end of the main engine and direct-driven from the crankshaft. The main compressor has a capacity of 22½ cu. ft. of free air per minute.

The main generator is of the commutating-pole type designed specially for heavy traffic work. The entire machine is inclosed within a three-arm bracket which supports the outer bearing of the generator armature.

The motors are of the box-frame, commutating-pole, oil-lubricated type, known as GE-205, 600-volt, 100-hp motors.

The auxiliary gas engine set consists of a three-cylinder, four-stroke cycle, vertical type gas engine, the center cylinder being used as an air compressor. The lighting generator is direct-connected to the gas engine with armature of the overhung type. A fly-ball gear-driven governor acting on a butterfly valve in the intake pipe is used to maintain a constant speed of 600 r.p.m. The cooling system for this engine is the same as for the large engine. The air pump on this engine is capable of delivering 45 cu. ft. of free air per minute and will charge the tanks to a pressure of 90 lb. in about ten minutes. This pump is used to supply air for starting the main engine after it has been idle if pressure in the main reservoirs has gone down. The auxiliary gas engine is started by hand.

One of the distinguishing features of these cars is the

flexibility of control. Power is delivered to the motors from the main generator through a controller of a type similar in appearance to those used in trolley practice. Concentric with the electrical controller handle, but above it, is an air-starting throttle handle. This handle is so arranged that by pressing a lever air for starting the engine may be admitted to the engine distributing valve through an air valve mounted upon the car plate of the controller, at the same time opening the throttle. Provisions are made, however, so that the throttle may be open only to a set distance to prevent the racing of the engine. The engine started, the lever may be released, cutting off the air pressure, and the throttle opened wider. It is not possible to admit air again to the engine without returning to the initial point, thus closing the throttle. The direction of the car may be reversed, in a manner similar to that employed on a trolley car, by the moving of the reversing handle, the gas engine always running in the same direction.

The brake system consists of straight and automatic air with auxiliary hand brakes.

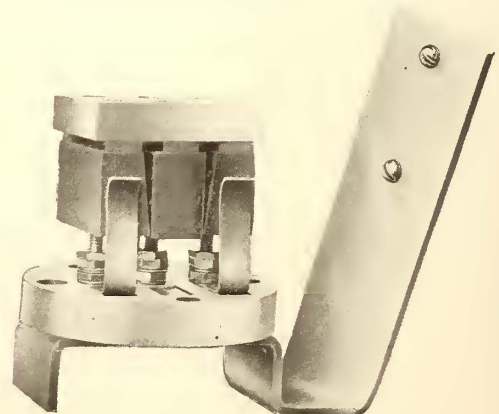
The car is heated by hot water supplied either from the gas engine jackets or from a coal-fired Baker hot-water heater located in the corner of the cab, which is fired from the baggage room. Provision is made so that hot water from the coal heater may be circulated through the engine jackets and radiators to prevent freezing on cold nights or during layovers.

The trucks are of the swing-bolster type, the frames being of boiler-plate steel with pedestal shoes of cast iron. The bolster springs are triple elliptic and the equalizer springs triple coil. The wheels are 36 in. in diameter with standard M.C.B. treads and flanges. Each truck has a wheel base of 7 ft., the total wheel base of the car being 58 ft. 6 in.

TELEPHONE PROTECTION FOR OUTDOOR SERVICE

A type of open space cut-out, which has been developed within the past year by the Western Electric Company and has already come into extensive use on telephone lines in railroad and commercial service, is the so-called No. 86 type protector. This device is made in two forms, one with a tin cover and the other with a cast-iron cover, known, respectively, as Nos. 86-A and 86-B. These covers are chained to the framework of the protector mounting, so that they cannot be lost through carelessness of the lineman.

The protector itself is mounted on a porcelain base, through the bottom of which the leading-in wires are



Cut-Out with Protector Open

brought in, and consists of heavy carbon blocks, as shown in the illustration. The spacing between these blocks regulates the voltage at which the protector operates. Under normal conditions this is adjusted to discharge at 1000 volts.

The shape of the carbon blocks gives a variable gap be-

tween the ground block and the two blocks connected to the line wire. The protectors are arranged so that carbon dust carried across by the discharge will not clog the spark gap, but will automatically drop to the bottom of the protector.

The No. 86 type protector, as is noted, is designed for use both outside and indoors, and it is arranged so that it can be mounted directly on the pole itself. In some cases it is desirable to have a protector which can be located in this manner outdoors, although, as a general proposition, such a practice is not to be recommended on account of the additional maintenance difficulty thereby involved.

On telephone train-dispatching lines the No. 86 type protector is being used to a considerable extent throughout the country and it is giving very good satisfaction.

NEW MILWAUKEE SPRINKLING CARS

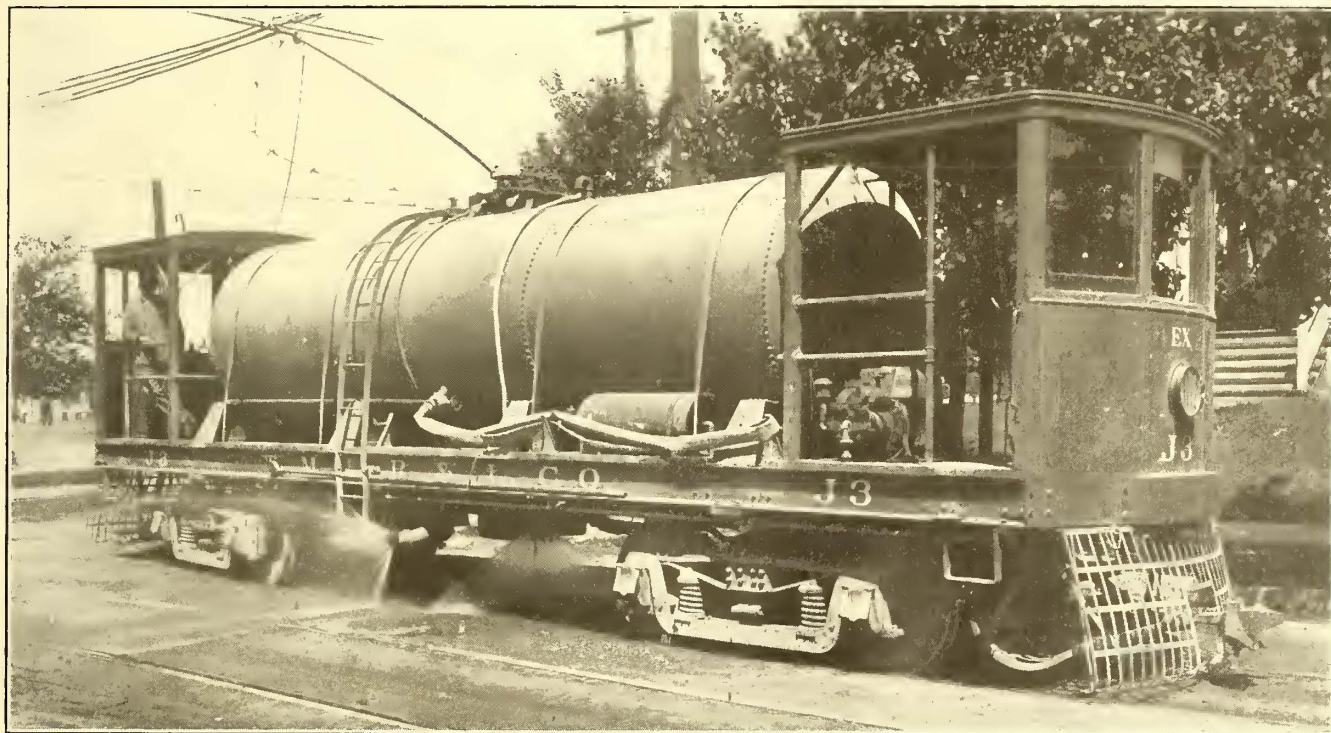
The Milwaukee Electric Railway & Light Company is now operating eight new sprinkling cars of the design shown in the accompanying illustration. The bodies of

at the rear. The sprinklers are equipped with air and hand brakes, two St. Louis Car Company's air sander boxes, 14-in. foot gongs and the company's standard M. C. B. type coupler and automatic trip fender. The body is supported on two St. Louis Car Company's trucks, No. 90 M.C.

The spray nozzles, three in number, are controlled from the car-operating position and are so arranged that the street may be sprinkled directly between the rails and on either side of the track or on both sides as required.

EXPERIMENTS WITH THE BRIQUETTING OF LIGNITE

The results of the investigations into the briquetting of lignite have just been published by the Bureau of Mines in Bulletin No. 14. Charles L. Wright, who conducted the tests and who is author of the bulletin, declares that enough testing has been done to indicate that some American lignites equal German lignites in fuel value and can probably be made into briquets on a commercial scale without the use of binding materials. The author says that the cost of



New Double-Truck Sprinkling Car at Milwaukee

these cars were built by the St. Louis Car Company and the tanks were installed at the railway company's shops in Milwaukee. The general dimensions of the cars follow:

Length over end sills.....	38 ft.	0 in.
Length over buffers.....	38 ft.	8 in.
Width over side sills.....	7 ft.	6 in.
Truck center	22 ft.	0 in.
Height from rail to underside of sills.....		40 3/4 in.
Height from rail to underside of bottom bolster plate.....		30 3/4 in.
Height from center of rail to center of drawbar.....		19 in.

The underframing includes side and center sills made of 10-in., 30-lb. I-beams connected by cross-sills made of 8-in., 18-lb. I-beams and end sills made of 10-in. 15-lb. channels bent to a radius of 7 ft. 5 1/2 in. The joints between the steel underframe members are reinforced with heavy angles and the frame is diagonally braced with 3/8-in. x 2 1/2-in. steel bars riveted to the longitudinal cross-sills.

The saddles, of which there are four, are built of 1/4-in. plate, reinforced top and bottom with 3-in. x 3-in. x 3/8-in. angles. The bottom reinforcing angles are riveted to the side and center sills and the connections are reinforced with gusset plates. Steps are provided at all four corners of the car, and each end is covered with a vestibule, open

briquetting run-of-mine lignites with the German plant which was used would be from \$1.35 to \$1.75 per ton, according to the location of the plant. The cost per ton of briquets, loaded on cars, from a briquet plant at the mine would be, in Texas, \$2.51; in North Dakota, \$3.53, and in California, \$5.24. These figures are only approximate and are subject to wide changes because of local conditions. They apply to briquetting run-of-mine lignite to improve its heat value and weather-resisting properties rather than to briquetting slack or waste coal. Since the tests have shown that at least some lignites slacked by exposure to the weather can be made into excellent briquets, it may be possible to utilize lignite slack as well as bituminous slack and anthracite screenings for briquetting, the two latter materials having been made into briquets on a commercial scale both in this country and abroad. Of four samples of raw lignite, three samples contained about 40 per cent moisture and had a fuel value of 6079 b.t.u. to 6241 b.t.u., while a Texas lignite, with a moisture content of 33 per cent, had a fuel value of 6840 b.t.u. The percentage of moisture removed in the process of briquetting ranged from 24 per cent to 32 per cent.

ELECTRIC RAILWAY LEGAL DECISIONS

CHARTERS, ORDINANCES AND FRANCHISES

Indiana.—Eminent Domain—Proceedings—Appraisers' Award—Estoppel—Appeal.

In a condemnation proceeding the defendant excepted to the appraisers' award, demanding a review because the damages for land taken were inadequate, yet assenting to that part of the award fixing the value of the improvements. Plaintiff claimed that defendant was estopped because he had not excepted to the assessment of the improvements. Held that although a party cannot accept the benefit of an award and then contest its validity, the defendant was not estopped here because the case was tried *de novo* on his exceptions, his entire damages being in issue, and the burden of proof being upon him to establish them to improvements as well as land. (*Indianapolis Traction & Terminal Co. v. Ripley et al.*, 93 N. E. Rep., 546.)

Indiana.—Private Property Taken for Power House.

An instruction that interurban railroad companies are so far quasi-public corporations that they may, on rendering compensation, take private property in fee for a power house and carhouse, when necessary to such use, is not subject to the objection that the jury might believe that the question of necessity was involved in the trial and that the burden of proving it rested on plaintiff, where the court had already instructed that the only question involved is the amount of damages defendant is entitled to. (*Muncie & P. Traction Co. v. Hall et al.*, 90 N. E. Rep., 312.)

Indiana.—Eminent Domain—Bar to Recovery of Damages.

That a railroad was constructed along a street with the knowledge and consent of an abutting owner is not a bar to his right to recover damages for injuries done to his property. (*Indianapolis Southern R. Co. v. Shea*, 90 N. E. Rep., 330.)

Maine.—Construction—Change of Grade of Street—Damages.

Where, under the provisions of Rev. St. chap. 53, sec. 19, the grade of a street railroad located on the side of a town way was established and fixed by the municipal officers of the town, and also by authority of the municipal officers, the grade of the traveled side of the way was raised so as to conform to the grade of the street railroad, and an abutting owner was damaged thereby, held that under the provision of Rev. St., Chap. 23, Sec. 68, the town was liable for the damages sustained by the abutting owner. (*Hurley v. Inhabitants of South Thomaston*, 74 Atl. Rep., 734.)

New Mexico.—Crossings with Steam Railroad—Injunction.

Where a railroad company, suing to enjoin a street railroad company from crossing its tracks until the place and manner of crossing had been determined by the court, under Laws 1905, Chap. 97, Sec. 13, on the intimation of the court that it had no jurisdiction, asked for twenty-four hours to file an amended bill, and within that time so changed its tracks at the proposed point of crossing as to destroy the usefulness of steel crossings prepared by the street railroad company, it was proper for the court to issue a mandatory injunction commanding the railroad company to restore the status quo, but the court could not enjoin it from interfering with the street railroad company in the laying of its tracks, since the latter could not cross the railroad company's track except by agreement or on determination by the court. (*Atchison, T. & S. F. Ry. Co. v. Citizens' Traction & Power Co.*, 113 Pac. Rep., 813.)

New York.—Taxation—Corporate Franchise—Completion of Railroad—Assessment—Equalization on Certiorari.

A special franchise of a railroad company may be assessed for taxation, although its road is not completed and in actual operation so as to earn revenue. In the assessment of a special franchise the cost and assessment of other property not of like nature in itself or in its business uses are not competent evidence. Where the State Tax Board has assessed a corporation's special franchise at its full value, and other real property in the same municipality is assessed on 80 per cent of its value, the valuation of the company's property should, on certiorari, be reduced accordingly so that it will stand on an equality with other property. (*People ex rel. Hudson & M. R. Co. v. State Board of Tax Com'rs et al.*, 126 N. Y. Sup., 1063.)

Wisconsin.—Municipal Regulation—Street Sprinkling.

St. 1898, Sec. 1862, subjecting street railroads to municipal regulation, authorizes adoption of a reasonable ordinance requiring them to sprinkle streets occupied by them. An ordinance requiring a street railroad to sprinkle the part of streets occupied by it is not void as discriminating in favor of users of automobiles and other vehicles who are not compelled to bear like expense. (*State ex rel. City of Milwaukee v. Milwaukee Electric Ry. & Light Co.*, 129 N. W. Rep., 623.)

Wisconsin.—Constitutional Law—Obligation of Contracts—Reservation of Power to Alter Franchises.

If the Legislature should specifically authorize a city to contract with an interurban railroad that its fare between the cities should not exceed 10 cents, such a contract, being made by the city as agent of the State, would be binding during its life and could not be impaired by subsequent legislation unless the ordinance which, with the acceptance thereof, constitutes the contract be considered part of the charter of the railway company and so subject to amendment or repeal under the power reserved by Const. Art. 11, Sec. 1. But where the city makes such a contract only under the power given it by St. 1898, Sec. 1863, as amended by Laws 1901, Chap. 425, to give its consent, on such terms as it may prescribe, to an interurban line using its streets, not only is there no specific power to make it and no surrender by the State of its governmental power of fixing rates, so that the right of the State to interfere when the public weal demands it is not abrogated, but the right conferred on the railroad company to use the street becomes one of its franchises, so that the conditions on which it was given may be modified by the Legislature under the power reserved to it by Const. Art. 11, Sec. 1, to repeal or alter charters and franchises of corporations. (*City of Manitowoc v. Manitowoc & Northern Traction Co.*, 129 N. W. Rep., 925.)

LIABILITY FOR NEGLIGENCE

Arkansas.—Action for Injury to Intoxicated Person.

In an action against a street railroad company for injury by being struck by a car while walking toward it on the track in an intoxicated condition, where plaintiff was clearly guilty of contributory negligence, an instruction which warranted the jury in assuming that his intoxication relieved him from the consequences of such negligence was erroneous and prejudicial to defendant. (*Little Rock Ry. & Electric Co. v. Billings*, 173 Fed. Rep., 903.)

Delaware.—Injuries to Passenger on Wrong Car.

Where a person, with a right to transportation upon one of a street railway's cars by mistake enters another, he must be treated as a passenger with respect to his safety while on it. (*Butler v. Wilmington City Ry. Co.*, 78 Atl. Rep., 871.)

Indiana.—Travelers at Crossings—Duties—Care Required of Deaf Persons.

A motorman may assume that a traveler seen approaching a crossing sees or hears the cars approach and will use ordinary care to avoid danger. As to liability to travelers at road crossings, there is no difference between a steam railway and an interurban line operating on its own private right-of-way or outside the traveled part of a highway. A traveler who is partly deaf in crossing a railroad track must use his other senses to avoid danger. (*Snow v. Indianapolis & E. Ry. Co.*, 93 N. E. Rep., 1089.)

Indiana.—Notice to Agent—Carriage of Passengers.

Notice to the agent of a corporation relating to any matter of which he has control and management is notice to the corporation. Though a carrier is not an insurer of its passengers, it is not only required thoroughly to examine and test its vehicles, machinery and all parts and appliances used in transporting passengers, but it is required further thoroughly to examine the vehicle and machinery from time to time to know whether they are deteriorating. When it is established that a passenger on a boat, while being carried as a passenger for hire, has been thrown into the water and drowned, without his fault, by the sinking of the boat or the breaking down of parts thereof, the law presumes negligence of the person operating the boat. (*Indiana Union Traction Co. v. Scribner*, 93 N. E. Rep., 1014.)

Indiana.—Crossing Accident—Last Clear Chance Doctrine.

Plaintiff was struck and killed while attempting to cross the grade crossing of an interurban electric railway. The car was 300 ft. from the crossing when the motorman discovered that decedent was attempting to drive across the track, and other witnesses testified that when the car was that distance away the horses were on the track and that decedent was looking toward the car, which was moving at 30 m.p.h. while the horses were walking. Held that such evidence was sufficient to justify an instruction that plaintiff could recover, notwithstanding decedent's negligence exposed him to the risk of injury, if such injury was more immediately caused by defendant's omission, after becoming aware of the danger, to use ordinary care to avoid injuring him, etc. (*Indiana Union Traction Co. v. Myers* [No. 6874], 93 N. E. Rep., 888.)

Kentucky.—Duty to Alighting Passengers.

A street railway company's only duty to an alighting passenger who has signaled the car to stop is to stop until he has safely alighted, personal assistance not being required. (*Bullitt v. Louisville Ry. Co.*, 134 S. W. Rep., 1153.)

Massachusetts.—Injuries at Crossings Caused by Boys Coasting.

In an action against a street car company for injuries to a boy sliding down hill, where evidence showed that the motorman had his car under control and had stopped to let another boy go safely in front of the car, it was not negligence on the motorman's part that he failed to see and prevent plaintiff from running under the rear wheels and being injured. While it is the duty of a motorman to keep his car under control and to be alert at intersecting streets to avoid collisions, he is not bound to look out for travelers who may run into the rear of his car. (*Kiley & Boston Elevated Ry. Co.*, 93 N. E. Rep., 632.)

Massachusetts.—Injuries to Passengers from Premature Effort to Alight.

Where an elevated train had nearly reached a station and then properly stopped on the curve just outside to wait for a signal to enter, so that it was the duty of the brakeman to announce the station, which he did, the act of the brakeman in removing chains stretching across the open space on platforms of the cars in accordance with his regular practice was merely a reasonable preparation to facilitate rapid transit by avoiding the necessity of delay to travelers and it was not a negligent act for which the railroad was liable to a passenger on the platform falling therefrom on the train starting to enter the station. (*Crowley v. Boston Elevated Ry. Co.*, 90 N. E. Rep., 532.)

Massachusetts.—Injuries to Passengers from Sudden Start.

In an action against a street car company for personal injuries from the sudden starting of a car, an instruction that a common carrier has a duty with reference to the passengers, which is to exercise the highest degree of care which can be exercised by human agency consistent with the operation of the road, it is not the care of ordinary prudence, it is the highest degree of care which a man can exercise with reference to running his car, and the failure of the conductor to exercise proper care is the negligence of the road, etc., was erroneous as setting the standard of defendant's care too high, since the conductor was only required to exercise the highest degree of care consistent with the practical management of his car for the carriage of passengers. (*Gardner v. Boston Elevated Ry. Co.*, 90 N. E. Rep., 534.)

Michigan.—Crossing Accident—Speed—Negligence—Contributory Negligence.

Operation of an electric car in the country at a speed of 40 or 50 miles an hour over a crossing at which decedent was killed may be negligence or not, according to the surrounding circumstances, but is not negligence per se.

Where decedent drove on an electric railway crossing in the country, without looking for a car by which she was struck and killed, which was in plain sight before her horse reached the place of danger, and she could easily have avoided the accident, she was guilty of contributory negligence, precluding a recovery for her death. (*Folkmore v. Michigan United Rys. Co.*, 121 N. W. Rep., 811.)

Michigan.—Injury to Passenger—Boarding Car.

Though an attempt by a man of sixty-two, weighing 200

lb., to board a street car going 6 miles an hour may be negligent and the jury would be justified in so finding, where it was not conclusively shown that the car was going 6 miles an hour and where the conductor was apprised of the person's intention to board the car in motion and of the danger, and rang the bell twice, the question of contributory negligence was for the jury. (*Orth v. Saginaw Valley Traction Co.*, 127 N. W. Rep., 330.)

New York.—Carriers—Passengers—Jury Question—Contributory Negligence—Riding on Platform.

While a street car passenger while riding on the front platform assumed the ordinary risks of riding in that position, he was not negligent as a matter of law in not foreseeing that the motorman might permit the platform to become overcrowded, so that he could not control the car, causing a collision with a vehicle. (*Garber v. Joline et al.*, 119 N. Y. Sup., 1070.)

New York.—Place to Alight—Transfers—Contributory Negligence.

A street railway company does not fulfil its duty to a passenger by furnishing him a suitable place to alight from its car where he is required to transfer from one car to another but must also furnish a reasonably safe way to make the transfer.

Where at a street railway transfer point one of the cars rounded a curve, but there was ample space for passengers to walk along the street adjacent to the car to make their transfer without danger from the overhang at the point of greatest projection, a passenger struck and injured by the overhang of a car while rounding the curve, because he walked too close to the track, was negligent. (*Creenan v. International Ry. Co.*, 124 N. Y. Sup., 360.)

Tennessee.—Large Load on Car—Injury to Eye of Pedestrian.

That a street railway company permitted so large a number of passengers to occupy a car as to heavily load it while on a sharp ascent in the street did not show actionable negligence to a traveler on the street. A person while passing near a heavily loaded street car stalled on an upgrade was struck in the eye with force by a hard substance coming from under the car while its wheels were revolving rapidly in the same place on the track. An expert testified that the probable effect of such revolution of the wheels would be to throw out slivers of steel from the rail or wheel, or both. The track was examined at the place of the accident soon after it occurred and particles of sand were found on it; but it did not appear that the car men had used any sand. It was customary to place sand on the track when needed to prevent the slipping of the wheels. There was no evidence that either the machinery or the wheels of the car or rails were defective. Held, as a matter of law, that actionable negligence of the street railway company was not shown. (*De Glopper v. Nashville Ry. & Light Co.*, 134 S. W. Rep., 609.)

Texas.—Boarding Car in Motion Not Negligence per Se.

It is not negligence per se in one desiring to get on board a car with a view of taking passage thereon to attempt to board the car while it is moving. (*Osborne v. Texas Traction Co.*, 134 S. W. Rep., 816.)

Washington.—Master and Servant—Injuries to Servant—Violation of Rule.

A conductor on a street car injured in a collision between the car and a railroad train at a crossing could not recover from his employer where he permitted the motorman to run the car at the rate of 30 m.p.h. up to within 75 ft. of the crossing in violation of a rule of the employer, when both he and the motorman knew that the brakes were out of repair, and the conductor, having power to control the speed of the car by signals, made no effort to reduce the speed. (*Craig v. Great Northern Ry. Co. et al.*, 106 Pac. Rep., 155.)

Wisconsin.—Dogs on Track.

A street car company is not required to stop its cars, when running at a legal or reasonable rate of speed, to avoid collision with dogs. A motorman operating a car is entitled to act on the presumption that ordinarily a dog on a street car track will get out of the way. (*Smith v. Railroad Co.*, 79 Minn. 254, 82 N. W. 577, followed and applied. (*Henry v. St. Paul City Ry. Co.*, 124 N. W. Rep., 245.)

News of Electric Railways

Program of Meeting of C. E. R. A.

The Central Electric Railway Association will meet at Cedar Point, Ohio, on Aug. 23 and 24, 1911. It has been decided to make this a two-day meeting, and the following program of papers has been announced:

AUGUST 23—1:30 P. M.

Business session and reports of special committees.

Paper, "Headlights," by C. Dorticos, representative of the General Electric Company, Chicago, Ill.

Discussion.

Paper, "Insurance," by Henry N. Staats, insurance expert of the Central Electric Railway Association and the American Electric Railway Association.

Discussion.

Paper, "Overhead Standardization," by A. Schlessinger, superintendent of overhead construction of the Terre Haute, Indianapolis & Eastern Traction Company, Indianapolis, Ind.

Discussion.

AUGUST 24—9 A. M.

Paper, "Little Things That Count," by J. C. Shade, assistant secretary-treasurer of the Winona Interurban Railway, Warsaw, Ind.

Discussion.

Paper, "Troubles of a Baggage Agent," by O. E. Anthony, baggage agent of the Indianapolis Traction & Terminal Station, Indianapolis, Ind.

Discussion.

Paper, "Trailer Car Operation vs. Multiple Unit Trains," by Clarence Renshaw, of the engineering department of the Westinghouse Electric & Manufacturing Company, Pittsburgh, Pa.

Discussion.

The executive committee of the association will meet at the Breakers Hotel, Cedar Point, Ohio, at 9 a. m., on Aug. 23, to transact routine business. The hotel committee of the association has planned the following entertainment for the members of the association:

AUGUST 23

10 a. m.—Annual bath in the surf at Lake Erie.

11 a. m.—Water baseball in front of the Breakers Hotel.

7:15 p. m.—Fish supper served in the convention hall for members and visitors.

8:30 p. m.—Informal ball.

AUGUST 24

9 a. m.—Exploration expedition through the lagoons for the ladies.

1:30 p. m.—Trip on *Wchrlc* to Lake Islands for the members and ladies.

Mayor Whitlock Approves Rental Ordinance

Brand Whitlock, Mayor of Toledo, Ohio, on Aug. 3, 1911, approved the ordinance recently enacted by the City Council providing for the payment of rental by the Toledo Railways & Light Company at the rate of \$250 per day for the use of the streets where its franchises have expired. City Solicitor Schreiber is authorized by the ordinance to file suit to compel the company to vacate the streets in case it refuses to pay this rental. Mr. Schreiber is preparing an ordinance providing for 3-cent fare on the lines affected, with the idea of offering the company the alternative of operating at this rate of fare. Mayor Whitlock made the following statement in regard to the ordinance:

"I have approved the ordinance drawn by Mr. Schreiber because it is the unanimous or nearly the unanimous opinion of Council that it may tend to hasten a solution of the whole problem. If it will do that, I shall be very glad. The ordinance is not out of harmony with the administration's program for the solution of the transportation problem. In our letter of Dec. 15, 1910, in which the program was marked out, it was stated that the question of the temporary use of the streets was allowed to rest only in the hope of obtaining a solution of the larger problem.

"The ordinance grants no permanent rights and it is revocable at the will of Council, and inasmuch as it instructs the city solicitor to bring suit if the company does not pay the rental demanded, it will, at least, bring about an earlier judicial determination of questions which the company might be expected ultimately to raise, and thereby shorten the period of delay.

"I repeat, however, what I have so often said, that I should consent to no permanent solution of the transportation problem on the basis of rental, or of any division of profits, for that method affords no direct benefit to the street car passengers, that is, to the mass of the people."

Electric Railway Prospects in Connecticut

The Connecticut House has passed a bill giving further right to the Shore Line Electric Railway to lay additional tracks between its Saybrook-Essex line and the Old Saybrook ferry, and to sell electricity in Lyme, East Lyme, Chester, Saybrook, Essex, Old Saybrook, Clinton and Madison. The new electric railway charters which have passed the House are those of the Norwalk & New Canaan Electric Railway and the New Britain, Kensington & Meriden Street Railway. The former is a renewal of a charter which was allowed to lapse several years ago and provides for an electric railway between Norwalk and New Canaan. The latter provides for an electric railway over a new route between New Britain and Meriden via Kensington in Berlin and through Cat Hole Pass into Meriden by Lewis Avenue. The rights given in this charter cannot be exercised until after the lapse of a charter for a line over somewhat the same route owned by C. J. Danaher, of Meriden, which has a year and a half yet to run. The House has also passed the extensions and additional charter rights of the Connecticut Company in Hartford, New Haven, Orange, Meriden, Norwich and New London and of the Connecticut Railway & Lighting Company in Waterbury, Fairfield, Stratford and Bridgeport. The latter company has also been given the right to sell gas for lighting and heating purposes in Watertown and Redding and Easton. There is a spirited fight on before the committee on railroads for a charter for an electric railway between Shelton and Bridgeport by way of Huntington Centre, Trumbull and Nichols, which the Connecticut Company is opposing because of the claim that it is brought forward at the eleventh hour and is a parallel line to its Shelton and Bridgeport line, which runs by way of Stratford and the Housatonic Valley. The bill is offered as a substitute for a measure which would have reduced by 5 cents the through fare on the latter line.

Vice-President Rea of Pennsylvania Railroad Counsels Caution in New York Subway Matters

Samuel Rea, vice-president of the Pennsylvania Railroad, authorized a statement warning New York City against certain dangers, as he sees them, in the subway plan under which work is now going ahead on the Lexington Avenue line. Mr. Rea said he relied upon the good sense and civic pride of the Public Service Commission, the Board of Estimate and the Mayor to defer active construction work until the various legal questions and the city's monetary responsibilities were clearly defined. He said these questions should be carefully considered before any operating contract is made:

"First—Primarily, has the city the basis for such a tremendous expenditure—\$160,000,000 to probably \$200,000,000—and yet meet its other needs without imposing an unusual tax burden on its property holders, and those who rent or occupy the same? The Mayor and the Controller should publish the facts.

"Second—Is there any real present necessity for all the subway lines proposed, and can the same be profitably operated? The estimates already made of the revenues and expenses of the new subway system have performed a distinct service by pointing out the long term of years before the proposed subway system will be free from operating

losses, but they have not so clearly indicated when, in addition to these losses, the accumulated interest charges on the capital invested will be met; nor have they definitely shown the accumulated burden which the taxpayers and other citizens must pay for at least a period of thirty or more years. The bankers and investors who will be asked to provide for the city and the operating company about \$225,000,000 under the conditions proposed will also do well to consider these estimates, and endeavor to save the city from the unfortunate results.

"Third—Can the city's credit be used and should it be used to guarantee either the Interborough or the Brooklyn Rapid Transit Company, or any other operator, against subway losses, or to make a preferential payment to them out of subway operations at the expense of the citizens?"

"Fourth—Can the citizens under present rapid transit conditions wait for at least five years without any relief? Should they be asked to do it? The present crowded rapid transit conditions are almost unbearable.

"Fifth—Can it be regarded as a final settlement of the situation to offer the proposed operator the cream of the short distance Broadway-Fifty-ninth Street travel and not insist that in fairness it assume the operation of the much-needed west side Seventh Avenue subway?"

"Sixth—Can the Pennsylvania Railroad and the Long Island Railroad, the largest taxpayers of the city, be satisfied when the urgent necessity for the Seventh Avenue subway, which would serve the Bronx, Brooklyn, and Queens, is absolutely ignored and no provision made in this vast outlay for anything to relieve the situation? In addition to being the largest taxpayers they also carry 30,000,000 of citizens in and out of New York City yearly, and by other traffic do as much as any other corporation to maintain the commercial supremacy of New York City. Yet all of this has not been deemed sufficient to commend the building of a subway to their station for the public benefit as a part of the comprehensive subway system."

Chicago Elevated Railways

The selection of Britton I. Budd as chief executive and E. C. Noe as the operating official of the Chicago Elevated Railways is said to be the first step in a series of developments which will shortly precede a rather complete rearrangement of elevated service and operating methods in Chicago. New plans for routing trains are to be carried into effect as rapidly as possible and it is reported that the new company will negotiate with outlying interurban roads with a view to handling their trains to the center of the business district. Samuel Insull, chairman of the executive committee of the Chicago Elevated Railways, will be the dominating factor in the operation of the properties. The elevated companies of Chicago own approximately 173 miles of single track, the lines radiating in four directions from the Union Elevated Loop which encircles the central business district. With the consolidation of the operation of the four roads it is planned to effect savings by re-routing and reducing power costs and administration expenses. In the report following examination made by Stone & Webster, who have acted as engineers for the bankers, possible economies totaling \$700,000 in net earnings from year to year are said to be available without expense for new construction. The report includes the following statement on this subject:

"We find that the earning capacity of the various elevated properties in Chicago is, and has been for a number of years, largely limited by the method of joint operation of the loop, which is located in the heart of the business district, and that the capacity of the loop can be increased by through routing trains and other rearrangement of routes from approximately 30 per cent to over 150 per cent, and improvements of 30 per cent to 50 per cent can be made without any expenditures in changing the loop structure. In our judgment, one management and an increase in the capacity of the loop from 30 per cent to 50 per cent will increase the combined net earnings through a reduction of operating expenses and an increase of gross earnings by at least \$700,000 per annum.

"The item of power will, it is confidently expected, show a saving of more than \$350,000 per annum. At present the average cost per kw-hour for power is considerably in ex-

cess of what other properties are paying and it is believed that a much better rate can be obtained through long-term contracts which will be made."

The details of the terms of the merger of the elevated railways of Chicago as the Chicago Elevated Railways were referred to in the *ELECTRIC RAILWAY JOURNAL* of June 3, 1911, page 992, and June 10, 1911, page 1035.

Action Brought Against Interurban Companies at Cleveland to Secure Reduction in City Fare

A. G. Stafford has filed suit in the Cuyahoga County Court of Common Pleas asking for an order to restrain the interurban electric railroads which enter Cleveland from charging a fare of 5 cents within the city limits, and to compel the company to operate at 3 cents, with free transfers to other lines. Separate actions have been brought against the eight companies as follows: Cleveland Railway, Lake Shore Electric Railway, Northern Ohio Traction & Light Company, Cleveland, Southwestern & Columbus Railway, Cleveland, Painesville & Eastern Railroad, Cleveland, Painesville & Ashtabula Railroad, Cleveland & Eastern Railway and the Cleveland, Youngstown & Eastern Railway. Mr. Stafford is a carpenter, and the suit has presumably been brought against the companies with him as the instrument.

H. J. Crawford, of Squire, Sanders & Dempsey, attorneys for the companies affected by the suit, said that the 5-cent fare on the interurban lines was allowed by the provisions of Ordinance 24, which authorizes the city to fix the fare for special cars over interurban electric railways.

H. J. Davis, secretary of the Cleveland Railway, has handed City Auditor Wright a check for \$63,006.65, in settlement in full of all bills due to the city up to the beginning of the present administration. Some of these bills have been in dispute more than five years. The accounts were complicated by credits, and counter credits, and an understanding remains to be reached in regard to certain expenses which are connected with the paving of Detroit Avenue, Cleveland.

An attempt is being made to secure a number of signatures sufficient to insure a referendum vote upon the amendments recently made to the Talyer grant. J. J. Stanley, president of the Cleveland Railway, recently stated that nothing would be done toward making improvements or purchasing new equipment until the question of the referendum was settled.

Test of Heating and Ventilating Devices in St. Louis.—

The streets committee of the Civic League of St. Louis has secured an agreement with the United Railways, St. Louis, Mo., to test certain heating and ventilating devices in street cars.

Pittsburgh Subway Company Willing to Disclose Promoters.—The Pittsburgh Subway Company has sent a communication to the Pittsburgh City Council in which it states that the company will accept an ordinance providing that the company's financial resources must be approved by Council before Dec. 1, 1911, or the franchise forfeited.

A Notable Company.—William C. Brown, president of the New York Central & Hudson River Railroad; Thomas A. Edison, William R. Willcox, chairman of the Public Service Commission of the First District of New York; J. Sergeant Cram, member of the Public Service Commission of the First District of New York; Robert Adamson, secretary to Mayor Gaynor of New York; Herman A. Metz, formerly Controller of New York City, and ex-Governor Myron T. Herrick of Ohio all sailed from New York on Aug. 2, 1911, on the *Mauretania*.

Work Begun on San Francisco's Municipal Railway.—

Work was begun on Aug. 1, 1911, at Point Lobos Avenue and Thirteenth Avenue, San Francisco, Cal., on the reconstruction of the Geary Street, Park & Ocean Railway, as a municipal undertaking, the supervisors having finally passed the bill authorizing the Board of Public Works to reconstruct the railway by day labor. The supervisors passed to print an accompanying bill authorizing the works board to expend not to exceed \$270,000 in meeting the expenses of construction. The plans for the forty-three steel cars are about completed and will be submitted by the city engineer's office to the Board of Works and the Board of Supervisors for their inspection and approval.

Financial and Corporate

New York Stock and Money Markets

August 9.

Stocks fell sharply on Monday and Tuesday of this week, and further decline took place to-day when the government's report on crops was made public. Unfavorable conditions were recorded, but yields are expected to be normal. Trading was dull pending issuance of the report, but selling became general when the news was received in the Street. Preparations to finance the crops have tended slightly to tighten the money market. Quotations to-day were: Call, 2 1/4 @ 2 3/8 per cent; ninety days, 3 @ 3 1/4 per cent.

Other Markets

Chicago trading was on a narrow scale to-day and prices were irregular. Chicago Railways certificates declined slightly in the latter part of the past week, and minor losses took place in Series 2 in to-day's market. Announcement of selection of B. I. Budd for president of the Chicago Elevated had no great effect on the shares of the company.

The Philadelphia market was very quiet to-day, and very few shares changed hands. Traction issues were neglected.

Prices in Boston have been irregular, and demand is light, although fairly well distributed through the list. Further declines were registered to-day in copper stocks.

Baltimore trading is in limited volume. The market to-day was moderately active, with Houston Oil the feature. United Railways was heavy.

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

	Aug. 2.	Aug. 9.
American Light & Traction Company (common).....	a304	a302
American Light & Traction Company (preferred)....	a106	a106
American Railways Company.....	44 1/2	44 1/2
Aurora, Elgin & Chicago Railroad (common).....	*44 1/2	*44 1/2
Aurora, Elgin & Chicago Railroad (preferred).....	*87	*87
Boston Elevated Railway.....	a131 1/2	127
Boston Suburban Electric Companies (common)....	a15	a15
Boston Suburban Electric Companies (preferred)...	75	75
Boston & Worcester Electric Companies (common)...	a13	*13
Boston & Worcester Electric Companies (preferred)...	a56	*56
Brooklyn Rapid Transit Company.....	a86 1/2	*76 7/8
Brooklyn Rapid Transit Company, 1st ref. conv. 4c....	*86 3/4	*86 3/4
Capital Traction Company, Washington.....	a132 1/4	a132
Chicago City Railway.....	a190	a190
Chicago & Oak Park Elevated Railroad (common)...	*3	*3
Chicago & Oak Park Elevated Railroad (preferred)...	*5	*5
Chicago Railways, pteptg., ctf. 1.....	a101	a97
Chicago Railways, pteptg., ctf. 2.....	a337 1/2	a303 1/4
Chicago Railways, pteptg., ctf. 3.....	a13	a12
Chicago Railways, pteptg., ctf. 4.....	a7 1/2	7 1/2
Cincinnati Street Railway.....	a130	a131
Cleveland Railway.....	*99 7/8	*99 7/8
Columbus Railway (common).....	81 1/2	82
Columbus Railway (preferred).....	a100	95
Consolidated Traction of New Jersey.....	a76	75 3/4
Consolidated Traction of N. J., 5 per cent bonds....	a105	a105
Dayton Street Railway (common).....	a25	a25
Dayton Street Railway (preferred).....	a101	a101
Detroit United Railway.....	a72 1/2	a75
General Electric Company.....	162	155
Georgia Railway & Electric Company (common)....	154	154
Georgia Railway & Electric Company (preferred)....	92	92
Interborough Metropolitan Company (common)....	17 1/2	a16 1/2
Interborough Metropolitan Company (preferred)....	49 1/2	a44 1/2
Interborough Metropolitan Company (4 1/2s).....	*79 5/8	77 1/2
Kansas City Railway & Light Company (common)...	a19	a19
Kansas City Railway & Light Company (preferred)...	*44	a44
Manhattan Railway.....	*143	*143
Massachusetts Electric Companies (common)....	a23 1/4	a21
Massachusetts Electric Companies (preferred)....	a23 1/4	a22
Metropolitan West Side, Chicago (common).....	*27 1/2	*27 1/2
Metropolitan West Side, Chicago (preferred)....	*75	*75
Metropolitan Street Railway, New York.....	15	103
Milwaukee Electric Railway & Light (preferred)...	*110	*110
North American Company.....	74 1/2	72 3/4
Northern Ohio Light & Traction Company.....	50 1/2	*50 1/2
Northwestern Elevated Railroad (common).....	*30	*30
Northwestern Elevated Railroad (preferred).....	*70	*70
Philadelphia Company, Pittsburgh (common)....	55	53 1/2
Philadelphia Company, Pittsburgh (preferred)....	44 5/8	44
Philadelphia Rapid Transit Company.....	23 1/2	23 3/8
Philadelphia Traction Company.....	86 1/2	85 1/2
Public Service Corporation, 5% col. notes (1913)...	a94	*94
Public Service Corporation, ctf. s.....	a107	*107
Seattle Electric Company (common).....	a110 1/2	a110 1/2
Seattle Electric Company (preferred).....	103	a103
South Side Elevated Railroad (Chicago).....	*76 7/8	76 7/8
Third Avenue Railroad, New York.....	*11	a9 3/4
Toledo Railways & Light Company.....	6 1/2	*6 1/2
Twin City Rapid Transit, Minneapolis (common)...	107 1/2	a107
Union Traction Company, Philadelphia.....	52	*51 3/8
United Rys. & Electric Company, Baltimore.....	18	18
United Rys. Inv. Co. (common).....	*38 1/2	a38
United Rys. Inv. Co. (preferred).....	*69	a64 3/4
Washington Ry. & Electric Company (common)....	a45	a45
Washington Ry. & Electric Company (preferred)....	a92	a91
West End Street Railway, Boston (common)....	89	88 1/2
West End Street Railway, Boston (preferred)....	a103	90
Westinghouse Elec. & Mfg. Co.....	73	*65 1/2
Westinghouse Elec. & Mfg. Co. (1st pref.).....	*118 1/4	*118 1/4

a Asked. *Last sale.

ANNUAL REPORT

Nashville (Tenn.) Railway & Light Company

Results of operations in the calendar years 1910 and 1909 compare as follows:

	1910	1909
GROSS EARNINGS—		
Earnings, passenger	\$1,238,554	\$1,186,909
Earnings, light, power, etc.....	579,678	521,833
Earnings, miscellaneous, both departments.....	14,232	15,637
Total gross earnings.....	\$1,832,464	\$1,724,379
Operating expenses and taxes.....	1,030,026	1,013,882
Gross income less operating expenses and taxes	\$ 802,438	\$ 710,497
DEDUCTIONS FROM INCOME—		
Interest on funded debt.....	\$ 402,426	\$ 393,974
Interest on current liabilities.....	379
Total deductions for interest.....	\$ 402,426	\$ 394,353
Net income less operating expenses, taxes and interest	\$ 400,012	\$ 316,144
Reserve funds, depreciation.....	54,861	51,513
Net income less operating expenses, taxes, interest and miscellaneous deductions....	\$ 345,151	\$ 264,631
Balance net income to common and preferred stock	\$ 345,151	\$ 264,631
Dividend on preferred stock, 5 per cent.....	125,000	125,000
Surplus to profit and loss.....	\$ 220,151	\$ 139,631

Percy Warner, the president, states in his report in part: "The gross earnings of your property for the year ended Dec. 31, 1910, show an increase over the year 1909 of 6.3 per cent; operating expenses, taxes, interest and depreciation increased 1.9 per cent, leaving a surplus for the year of \$345,151. While the per cent of increase of gross earnings is not as great as in the previous year, the reduction in operating expenses is gratifying.

"During the year there was constructed 4.71 miles of new track. Old track aggregating 1.2 miles was reconstructed.

"Twelve of the cars operated were built in the company's shops during the year, with prepayment and door-controlled feature, the cost of which is less than the price quoted by the car manufacturers, and the workmanship and the material used are far superior. This type of car has proved so satisfactory that the management has decided to convert the balance of its equipment, already having about one-third of the cars so equipped. After the entire system has been changed it is expected that accidents will be decreased and more efficient service rendered. We are also preparing to build twelve additional cars of the same type during the year.

"No new installation has been made at the power house during the year, but it is the opinion of the management that an additional unit should be ordered with the necessary auxiliaries, so as to take care of our steadily increasing load. The capacity of the power house is sufficient to take care of our 1911-12 winter load. The intervening time will be required to install the additional capacity.

"The finances of your company are in a most satisfactory condition. It has no floating indebtedness of any character and has in its treasury \$793,000 of its treasury bonds, which will be available for additions and extensions of its property.

"The operating forces in all of the branches of your company are in a most satisfactory condition.

"The relations of your company between its employees and the public continue pleasant and harmonious."

Traffic statistics in 1910 and 1909 compare as follows:

	1910	1909
Cash fare passengers.....	24,399,365	23,398,501
Transfer and passes passengers.....	13,815,807	13,400,249
Total passengers carried.....	38,215,172	36,798,750
Per cent of passengers using station transfers.....	40.7	41.4
Per cent of passengers using street transfers.....	3.4	3.1
Average passenger earnings per revenue passenger, cents	3.32	3.33
Average passenger earnings per total passenger, cents.....	3.2	3.20

Mileage 4,813,816.39 4,655,263.21

Boston (Mass.) Elevated Railway.—The directors of the West End Street Railway, on Aug. 8, 1911, voted to recommend the acceptance by the stockholders of the law providing for the sale of the company's property, rights and franchises to the Boston Elevated Railway. The same day a committee of the stockholders of the West End issued a circular to the stockholders urging them to reject the law, stating that their present security is more valuable than an equivalent of stock of the Boston Elevated Railway, and that the act authorizing consolidation is unconstitutional.

British Columbia Electric Railway, Vancouver, B. C.—The British Columbia Electric Railway is making a further issue of £600,000 of share capital, namely, £200,000 of 5 per cent cumulative perpetual preference shares of £1 each at 1s premium; £200,000 preferred ordinary shares of £1 each at 2s premium, and £200,000 deferred ordinary shares of £1 each at 4s premium, all offered to the preferred and deferred stockholders of record of July 12, 1911, to the extent of one share of each of the three classes for every complete £8 of preferred ordinary or deferred ordinary stock held by them.

Colorado Railway, Light & Power Company, Trinidad, Col.—The property of the Colorado Railway, Light & Power Company was sold at a receiver's sale on Aug. 2, 1911, to the Federal Light & Traction Company, New York, N. Y. It is expected that a new company, to be known as the Trinidad Transmission, Electric & Gas Company, will be formed to succeed the old company. The company at Trinidad failed about a year ago and was reorganized as the Trinidad Railway, Light & Power Company, with \$5,000,000 capital stock and \$5,000,000 of first mortgage 5 per cent bonds, of which \$1,998,000 were issued. In rebuilding its power plant, which was destroyed by fire eighteen months ago, the company became involved, and the court which took charge of its affairs would not authorize capital expenditures even for substations or transmission lines. As a result a large part of the load which was under contract has not been connected to the lines and the earnings of the company are below normal. The company furnishes service to sixteen coal mines at Trinidad, Col., which contain the only large deposits of coking coal west of the Mississippi River. The engineers who recently investigated the properties of the company report the power plant and equipment well adapted to the business and territory served.

Columbus, Delaware & Marion Railroad, Columbus, Ohio.—Judge Babst on Aug. 8, 1911, entered a decree in the Court of Common Pleas that an order be given the Sheriff of Marion County commanding him to have appraised and sell at public auction the Columbus, Delaware & Marion Railroad to satisfy a mortgage for \$1,000,000 given the Western Reserve Trust Company, Cleveland, two mortgages of \$300,000 each held by the Standard Trust Company, New York, and a mortgage of \$2,500,000 held by the Mercantile Trust Company, New York.

Columbus Interurban Terminal Company, Columbus, Ohio.—Those who subscribed to the stock of the Columbus Interurban Terminal Company to the extent of \$175,000 have paid the first assessment of \$50,000, and on Sept. 1, 1911, will pay a like amount. The company is now constructing a passenger and freight depot and terminals on South Third Street.

Forty-second Street, Manhattanville & St. Nicholas Avenue Railroad, New York, N. Y.—The sale of the property of the Forty-second Street, Manhattanville & St. Nicholas Avenue Railroad under foreclosure has been adjourned from Aug. 15, 1911, to Oct. 16, 1911.

Norwich & Westerly Railway, Norwich, Conn.—The Norwich & Westerly Railway, the property of which was sold under foreclosure recently, has been succeeded by the Norwich & Westerly Traction Company, organized in the interest of the bondholders of the old company. The Norwich & Westerly Traction Company has organized as follows: A. E. Locke, Boston, president; Robert W. Perkins, Norwich, secretary and treasurer; H. M. Verrill, Portland, Maine; Arthur L. Shipman, Hartford, Conn.; Arthur B. Peck, Hartford, Conn.; A. E. Locke and Robert W. Perkins, directors.

Toronto (Ont.) Railway.—Plans are under consideration by Sir William MacKenzie and his associates for the con-

solidation of the Toronto Railway, Toronto Power Company, Electrical Development Company, Toronto Electric Light Company, Metropolitan Railway, Toronto & Scarborough Railway, Mimico Electric Railway and Toronto & Suburban Railway. As previously stated in the ELECTRIC RAILWAY JOURNAL of July 22, 1911, the stockholders of the company are to meet on Aug. 14, 1922, to vote to increase the capital stock of the company from \$8,000,000 to \$12,000,000.

United Railways, St. Louis, Mo.—The Guaranty Trust Company, New York, N. Y., will purchase the \$1,500,000 of first mortgage 5 per cent gold bonds of the Lindell Railway which matured Aug. 1, 1911, at par and interest to Aug. 1, 1911. As stated in the ELECTRIC RAILWAY JOURNAL of June 17, 1911, the company proposes to take care of the maturing issue by an issue of 4½ per cent ten-year bonds.

Walla Walla Valley Railway, Walla Walla, Wash.—The Walla Walla Valley Railway, which has succeeded the Pacific Power & Light Company, has elected officers as follows: Guy W. Talbot, president; A. S. Grenier, vice-president; George F. Nevins, secretary and treasurer; Lewis A. McArthur, assistant secretary and assistant treasurer; C. S. Walters, general manager; C. H. Still, purchasing agent; E. G. Miller, traffic manager; D. F. McGee, chief engineer.

Dividends Declared

Boston (Mass.) Elevated Railway, 3 per cent.
 Detroit (Mich.) United Railway, quarterly, 1¼ per cent.
 Federal Light & Traction Company, New York, N. Y., quarterly, 1½ per cent, preferred.
 Philadelphia Company, Pittsburgh, Pa., 2½ per cent, preferred.
 Portland Railway, Light & Power Company, Portland, Ore., quarterly, 1s.
 Tampa (Fla.) Electric Company, quarterly, 2 per cent; extra, 1 per cent.

MONTHLY ELECTRIC RAILWAY EARNINGS

BANGOR RAILWAY & ELECTRIC COMPANY.						
Period.		Gross Revenue.	Operating Expenses.	Net Revenue.	Fixed Charges.	Net Income.
1m.,	June, '11	\$49,580	*\$25,337	\$24,243	\$12,472	\$11,771
1 "	" '10	45,707	*23,380	22,327	11,681	10,646
12 "	" '11	574,890	*270,300	304,680	146,517	158,163
12 "	" '10	555,937	*260,526	295,411	140,721	154,690
CHATTANOOGA RAILWAY & LIGHT COMPANY.						
1m.,	June, '11	\$77,910	*\$45,294	\$32,616	\$20,430	\$12,186
1 "	" '10	72,714	*42,150	30,564	18,431	12,133
6 "	" '11	445,955	*257,023	188,932	118,171	70,761
6 "	" '10	408,428	*246,369	162,059	108,833	53,226
COMMONWEALTH POWER RAILWAY & LIGHT COMPANY.						
1m.,	June, '11	\$432,614	*\$254,602	\$178,012	\$108,143	\$69,869
1 "	" '10	419,380	*234,257	185,123	107,704	77,419
6 "	" '11	2,629,084	*1,504,188	1,124,896	619,628	505,268
6 "	" '10	2,422,643	*1,367,995	1,054,648	617,934	436,714
EAST ST. LOUIS & SUBURBAN COMPANY.						
1m.,	June, '11	\$185,736	*\$106,973	\$78,763	\$45,605	\$33,158
1 "	" '10	200,553	*117,986	82,567	45,010	37,557
6 "	" '11	1,091,720	*626,836	464,884	272,151	192,733
6 "	" '10	1,119,353	*635,640	483,713	270,942	212,771
LEWISTON, AUGUSTA & WATERVILLE STREET RAILWAY.						
1m.,	June, '11	\$51,896	*\$27,878	\$24,018	\$13,337	\$10,681
1 "	" '10	47,985	*29,655	18,330	13,187	5,143
12 "	" '11	533,019	*331,134	201,885	158,349	43,536
12 "	" '10	526,206	*314,877	211,329	171,587	39,742
MILWAUKEE LIGHT, HEAT & TRACTION COMPANY.						
1m.,	June, '11	\$148,900	\$43,689	\$105,211	\$74,375	\$30,836
1 "	" '10	140,995	40,751	100,243	72,015	28,229
6 "	" '11	804,461	231,460	573,001	421,175	151,827
6 "	" '10	742,493	217,424	525,069	411,003	114,067
MILWAUKEE RAILWAY & LIGHT COMPANY.						
1m.,	June, '11	\$424,600	\$226,695	\$197,905	\$128,922	\$68,983
1 "	" '10	392,467	206,943	185,525	112,010	73,515
6 "	" '11	2,450,263	1,302,632	1,147,631	728,916	418,714
6 "	" '10	2,283,217	1,237,622	1,045,595	666,420	379,175
PORTLAND RAILWAY, LIGHT & POWER COMPANY.						
1m.,	June, '11	\$554,767	*\$262,172	\$292,595	\$129,155	\$163,440
1 "	" '10	478,879	*219,494	259,385	117,709	141,676
6 "	" '11	3,114,812	*1,504,136	1,610,676	742,824	867,852
6 "	" '10	2,645,612	*1,247,322	1,398,290	679,218	719,072
ST. JOSEPH RAILWAY, LIGHT, HEAT & POWER COMPANY.						
1m.,	June, '11	\$95,021	*\$57,106	\$37,915	\$18,453	\$19,462
1 "	" '10	85,401	*51,238	34,163	18,584	15,579
6 "	" '11	530,322	*322,001	208,321	115,474	92,847
6 "	" '10	494,015	*299,002	195,013	109,443	85,570
UNION RAILWAY, GAS & ELECTRIC COMPANY.						
1m.,	June, '11	\$237,408	*\$141,328	\$96,080	\$61,242	\$34,838
1 "	" '10	219,137	*131,770	87,367	57,987	29,380
6 "	" '11	1,518,456	*897,966	620,490	363,149	257,341
6 "	" '10	1,431,020	*862,214	568,806	348,005	220,801

*Operating expenses include taxes.

Traffic and Transportation

Impediments Interposed to Making Lines Safe

On Sunday, July 30, 1911, two interurban cars of the Detroit (Mich.) United Railway met in a head-on collision on a curve near Dearborn. One person was killed and many others were more or less severely injured. The accident gave rise to much discussion as to whether or not the Detroit United Railway has shown the proper diligence, and with a view to placing the public in position to judge more accurately of the true situation F. W. Brooks, general manager of the Detroit United Railway, issued a statement in part as follows:

"The subject of making safe our interurban traffic has been one of the most vexatious, as well as one of the most important, problems with which we have had to deal in recent years. The Detroit United Railway several years ago mapped out a program of procedure that will eventually do away with all curves and dangerous places on our entire system. These plans matured about two years ago, when our authorized agents began to purchase rights of way, 33 ft. wide, on the various interurban lines running out of Detroit—principally on the Rapid Railway and on the Detroit, Jackson & Chicago lines.

"Up to the present time we have paid approximately \$250,000 for land, trees, buildings and the removal of obstructions in rights of way in which it is our purpose to double-track our lines. This in itself is sufficient evidence that we determined long ago that double tracking is the only solution to the problem and is the best possible method of making absolutely safe the traffic over our interurban lines. We have been obliged to pay extortionate prices for many pieces of land. In some instances we were obliged to buy entire farms of several acres in order to obtain the desired right of way of only 33 ft. We have had to buy dozens of buildings, pay for scores of trees and stand the expense of moving structures away from the projected lines of the railway. Being a railway corporation, we have been obliged to pay, in some instances, two or three times the price the land would bring at private sale, but we did not hesitate even at that, knowing that it would eventually make perfect an already excellent system.

"As early as April, 1911, we started negotiations with the owner of the land lying opposite the curve near Dearborn where Sunday's accident occurred. We wished to make the line a straight one, double tracked, and do away entirely with that curve. Despite our willingness to pay a large sum of money for a right of way, the negotiations fell through, and at this time we are perfectly helpless, so far as that particular stretch is concerned. I will say unqualifiedly that if we had been given an opportunity to buy the right of way when we endeavored to secure it, there would have been no accident last Sunday, as the double tracking at that point would have been accomplished long before this.

"The suggestion has been made that the Detroit United Railway should proceed to condemn sufficient land for the necessary right of way. It may interest those who entertain this idea to know that under the railroad laws of Michigan an electric railway has not the power to condemn. The fact is, the law in regard to electric railways in Michigan is vague and disconnected and generally falls short of accomplishing the very things that the public now demand of us.

"The Detroit United Railway now has double-track lines from Detroit to Pontiac; on the Orchard Lake division as far as Farmington Junction; nearly the entire Toledo division; Rapid Railway, when line is built for which right of way is now being purchased, all the way to and a short distance beyond Mount Clemens, and eventually the Detroit, Jackson & Chicago line to Ann Arbor. Our first thought has been, however, the elimination of all danger points, and with that in view we brought our greatest energies to bear on those sections where those danger points exist. We have left nothing undone toward accomplishing this end. We are anxious to continue this policy, and if the owners of property will negotiate with us there will soon be not the slightest possibility of a recurrence of last Sunday's misfortune."

Co-operation of Public Invited in New York

The Interborough Rapid Transit Company, New York, N. Y., has addressed the following circular to the public:

"All lines of this company are carrying passengers far in excess of the capacity for which they were designed. At times our employees are compelled to perform their duties under trying conditions, due to this passenger overload, and while this company has always held its employees to a strict observance of its rules and regulations, it occasionally happens that some of these rules, especially those requiring courtesy to the public, are violated.

"We have, therefore, organized a separate bureau where all kinds of complaints will be received, and in addition we will welcome any suggestions or criticisms from the public that will tend to increase the safety or improve the efficiency of the service.

"We believe that with the hearty co-operation of the public better results can be obtained and would request that all complaints, criticisms, suggestions, etc., be made at the office of the vice-president and general manager, room 1229, 165 Broadway, either in writing or in person."

Special Excursions to the Beaches.—The Pacific Electric Railway, Los Angeles, Cal., has adopted the practice this summer of giving special half-fare excursions on specified days to Redondo Beach, Venice and Ocean Park.

Ordinance to Require Air Brakes in Terre Haute, Ind.—The City Council of Terre Haute, Ind., has passed an ordinance over the Mayor's veto requiring that all street cars operated in Terre Haute shall be equipped with air brakes.

San Francisco's Proposed No-Seat-No-Fare Ordinance.—The public utilities committee of the Board of Supervisors of San Francisco, Cal., has again put off consideration of the no-seat-no-fare ordinance.

Ordinance to Provide Sale of Strip Tickets in Louisville.—An ordinance has been introduced in the General Council at Louisville, Ky., providing for the sale of tickets by street railways in that city at the rate of six for 25 cents, or twenty-five for \$1.

Special Service Between Norwich and Westerly.—The Norwich & Westerly Traction Company, Norwich, Conn., which has succeeded the Norwich & Westerly Railway, is operating a special service between Norwich and Westerly, R. I., to afford excursionists a ready means to reach Watch Hill and the other shore resorts near Westerly.

Freight Rights Granted in Neponsit, Mass.—The Massachusetts Railroad Commission has granted authority to the Boston & Northern Street Railway to conduct the business of common carrier of newspapers, baggage, express matter and freight in Boston between the drawbridge of the Neponsit River bridge and its carhouse in the Neponsit district of Boston, subject to the regulation of the board.

Excess Fare on New York State Road.—With the consent of the Public Service Commission of the Second District of New York, the Warren & Jamestown Street Railway, Warren, Pa., will after Sept. 1, 1911, collect an excess fare of 5 cents from all passengers who board cars without transportation, the excess fare to be refunded upon presentation of the conductor's duplicate receipt at any ticket office of the company. The excess fare will not, of course, apply where the ride is within the city limits of Jamestown.

Excursion Business Out of Indianapolis.—Excursion business out of Indianapolis continues good each Sunday, and the lines running long-distance excursions report increased patronage on these excursions each week. The Terre Haute, Indianapolis & Eastern Traction Company is running an excursion car from Terre Haute to Indianapolis every Sunday morning, covering the 72 miles between the cities in two hours flat. Thirty-eight minutes of this time is spent in getting out of Terre Haute and through Brazil, and twelve minutes more in entering Indianapolis. The Indiana Union Traction Company's Toledo and Detroit excursions are proving very popular.

Award of Arbitrators at Trenton.—The arbitrators selected to settle the differences between the New Jersey & Pennsylvania Traction Company, Trenton, N. J., and its employees have rendered their finding. There were two principal points involved—first, the demand of the men for

a closed shop, and, second, the demand of the men for the substitution of a flat rate of 25 cents for the sliding scale from 21 cents to 25 cents, according to service. The arbitrators have awarded the men a flat rate of 24 cents an hour, but decided the closed shop question against them. The company refused throughout the negotiations and arbitration to meet any representative of the union organized among the men.

Novel Double Post Card of Winona Interurban Railway.—The Winona Interurban Railway, Warsaw, Ind., is mailing a novel timetable in the form of a double post card. On the address side appears the following: "OUR ASSETS: First-class Track and Roadway. Few Curves. New Cars. Fast Schedule. Quickest Route from Peru and points south to Goshen and points north. OUR LIABILITIES: To please the traveling public. Keep this card for reference." The two interior pages of the single-fold post card contain timetables of the through service between Indianapolis, South Bend, Michigan City and St. Joseph via the Winona lines, and also show the local timetable of the Winona lines. The back of the post card folder shows a map of the Winona line and its Indiana electric and steam connections.

Pay-within Cars in Milwaukee.—The Milwaukee Electric Railway & Light Company, Milwaukee, Wis., is reconstructing the ends of six double-truck city cars and adapting them for the pay-within method of fare collection. The end bulkheads are being removed and the seating arrangement changed slightly. The door operating mechanism of the Pre-payment Car Company is being installed. These mechanisms are arranged for the motormen to operate by hand the exit door at the front, and for the conductor to operate the exit and entrance door at the rear. New floors are being installed in the cars and the destination signs are being rearranged. The pay-within doors are being fitted with an electrical signaling device so that on closing the rear door a proceed signal will be given to the motorman automatically.

New York & Queens County Railway Requests Extension of Line.—Replying to the recent order of the Public Service Commission of the First District of New York for increased service, the New York & Queens County Railway, Long Island City, N. Y., has asked the commission for an extension of thirty days in which to indicate whether or not it would accept the order, and also for an extension of thirty days from Aug. 7, the time when the order goes into effect. The order required the company to operate daily, exclusive of Sundays and holidays, a sufficient number of cars to provide seats equal to the number of passengers. In its request for delay the company says it has not a sufficient number of men to operate its present schedule in a satisfactory manner, in spite of every effort it has made and is making to get such men, that it takes time to hire the men and break them in, and that its timetables, runs, schedules and working force have to be entirely readjusted.

Valley Forge Excursions.—The Philadelphia & Western Railway, Upper Darby, Pa., is conducting this summer special excursions over its line from Sixty-ninth and Market Streets, Philadelphia, to Valley Forge at a round trip fare of \$1.25. The company operates from Philadelphia to Strafford, from which place an automobile service to Valley Forge Park is provided. The company has issued an attractive folder which contains half-tone views of scenes along the lines and maps showing the territory traversed and the Valley Forge Park reservation. In an advertisement of the service which it carried in the Philadelphia newspapers the company said in describing the trip: "This trip affords a most delightful ride through beautiful and interesting country. The automobiles of the Norris City Company not merely take visitors from Strafford to Valley Forge, but convey them over five miles of splendid drives within the great park of 500 acres established by the State, commanding fine views of the Schuylkill and Valley Creek and passing the noble Anthony Wayne statue, Fort Washington, intrenchments, observation tower on Mount Joy. Revolutionary schoolhouse, monuments, graves, regimental camps and soldiers' huts. The terminus is at Washington's headquarters and near the Washington Inn, where visitors can stop for luncheon or dinner. The trip is a notable revelation to those who have not explored the park and the country round about, and appeals strongly to the patriotic and lovers of the beautiful."

Personal Mention

Mr. J. W. S. Reigle has been appointed chief engineer of the Fremont (Ohio) City Railway.

Mr. W. J. Thompson has been elected vice-president of the Felicity & Bethel Railroad, Felicity, Ohio.

Mr. W. F. Snider has been elected treasurer of the Salisbury & Spencer Railway, Salisbury, N. C., to succeed Mr. R. E. Preble.

Mr. C. G. Grenshaw has been appointed electrical engineer of the Phoenix (Ariz.) Railway to succeed Mr. O. B. M. Tompkins.

Mr. W. J. Sanford has been appointed electrical engineer of the Norfolk Southern Railroad, Norfolk, Va., to succeed Mr. T. H. Hay.

Mr. J. R. Fairchild has been appointed master mechanic of the Western Ohio Railway, Lima, Ohio, to succeed Mr. W. P. Graydon.

Mr. C. D. Phillipp has been appointed superintendent of the Oregon Electric Railway, Portland, Ore., to succeed Mr. E. C. Marse.

Mr. J. H. Whiting has been elected vice-president of the Mobile Light & Railroad Company, Mobile, Ala., to succeed Mr. S. H. Wilson.

Mr. G. A. Dickie has been appointed master mechanic of the British Columbia Electric Railway, Vancouver, B. C., to succeed Mr. J. H. Hughes.

Mr. Thomas F. Sisk has been appointed chief engineer of the power station of the Tazewell (Va.) Street Railway to succeed Mr. L. L. Arnold.

Mr. F. L. Dame has been elected vice-president of the Anniston Electric & Gas Company, Anniston, Ala., to succeed Mr. R. J. McClelland.

Mr. C. C. Vandewater has been appointed chief engineer at the Oklahoma Union Traction Company, Tulsa, Okla., to succeed Mr. W. H. Praton.

Mr. W. H. Rudisill has been appointed chief engineer of the Anniston Electric & Gas Company, Anniston, Ala., to succeed Mr. C. J. Reynolds.

Mr. George A. Hopkin has been appointed master mechanic of the Oregon Electric Railway, Portland, Ore., to succeed Mr. W. O. Fragmeier.

Mr. D. P. Miner has been appointed chief engineer of the power station of the Rhode Island Company, Providence, R. I., to succeed Mr. George W. Hawley.

Mr. H. C. Daggett, who has been superintendent of transportation of the Salisbury & Spencer Railway, Salisbury, N. C., has been given the title of superintendent of the company.

Mr. E. W. Clark, formerly superintendent, claim and general freight agent of the Pacific Coast Railway, San Luis Obispo, Cal., has been elected vice-president of that company.

Mr. E. C. Noe, general superintendent of the Northwestern Elevated Railroad, Chicago, Ill., has been appointed general superintendent of the Chicago (Ill.) Elevated Railways.

Mr. F. P. Maize, who has been superintendent of shops of the Public Service Railway, Newark, N. J., has been appointed master mechanic of the Portland Railway, Light & Power Company, Portland, Ore.

Mr. H. G. Northrop has been appointed general manager of the Richmond & Chesapeake Bay Railway, Fredericksburg, Va., to succeed Mr. William Northrop, who has been elected vice-president of the company.

Mr. J. M. Sims has been appointed superintendent, claim agent and general freight agent of the Pacific Coast Railway, San Luis Obispo, to succeed Mr. E. W. Clark, who has been elected vice-president of the company.

Mr. F. A. Delano, president of the Wabash Railroad and chairman of the board of directors of the Metropolitan West Side Elevated Railway, Chicago, Ill., has been elected to the board of governors of the Chicago (Ill.) Elevated Railways.

Mr. J. M. Smith, who has been assistant secretary and assistant treasurer of the Cleveland & Erie Railway, Girard, Pa., has been elected secretary and assistant treasurer of the company. Mr. Smith succeeds Mr. C. S. Knauf as secretary of the company.

Mr. E. C. Derth has been appointed assistant secretary and assistant treasurer of the Columbus Street Railway & Light Company, Indianapolis, Ind., to succeed Mr. Gustave Ulbreicht. Mr. Derth was formerly auditor of the company and will retain that title also.

Mr. W. B. McKinley, president of the Illinois Traction Company, Champaign, Ill., formerly vice-president of the Quincy Horse Railway & Carrying Company, Quincy, Ill., has been elected president of the Quincy Horse Railway & Carrying Company, to succeed Mr. George F. Duncan, formerly president of the company, who has been elected vice-president.

Mr. George Bullock, president of the Susquehanna Railway, Light & Power Company, New York, N. Y., has been elected chairman of the executive committee of the Buffalo & Lake Erie Traction Company, Buffalo, N. Y., in which capacity will devolve upon him many of the duties previously performed by Mr. Joseph B. Mayer, who has resigned as president of the company.

Mr. Arthur R. Hill has resigned as purchasing agent to the New York & Queens Electric Light & Power Company, Long Island City, N. Y., effective Aug. 31, 1911, to become purchasing agent to the Monterey Railway, Light & Power Company, Monterey, Mexico, which controls the Monterey Water Works & Drainage Company, the Monterey Plumbing & Electrical Supply Company and the Monterey Gas Company.

Mr. A. M. Patten, who has been general superintendent and purchasing agent of the Topeka (Kan.) Railway, will also act as superintendent of the Wichita Railroad & Light Company, Wichita, Kan., to succeed Mr. W. R. Morrison, who will go from Wichita to Barbadoes Island to take charge of the construction of the Bridgetown Tramway, in which Mr. William B. McKinley, president of the Illinois Traction System, and his associates, who also control the Topeka and Wichita systems, are interested.

Mr. E. M. Wharff has been transferred from the operating engineering department of the Illinois Traction System and the Western Railway & Light Company, Peoria, Ill., to the Galesburg Railway & Light Company, Galesburg, Ill., as assistant general superintendent and operating engineer in charge of the electric light and power, electric railway, gas and steam-heating department, including power house, car-houses and gas works. The Galesburg Railway & Light Company is a part of the Western Railways & Light Company.

Mr. Joseph B. Mayer has resigned as president of the Buffalo & Lake Erie Traction Company, Buffalo, N. Y. In a statement which he issued reviewing the prospects of the company Mr. Mayer said: "My sole reason for resigning as president is that I cannot give my undivided attention to the affairs of the company. I shall remain on the directorate and give such assistance as is necessary, and, although resigning as president, I am retaining my interest in the company, which interest is the same as it has always been."

Mr. C. Gordon Reel, who retired early last year as first vice-president and general manager of the Kingston (N. Y.) Consolidated Railroad, after holding that position since the organization of the company in 1902, has been appointed first deputy superintendent of highways of the State of New York. During the past year Mr. Reel has conducted an office as consulting engineer in Kingston and has been engaged on several important engineering undertakings, among them as a commissioner of appraisal in the land condemnation proceedings in connection with the Ashokan Dam, which is being built to hold the water supply of New York City. From 1910 to 1911 he was also secretary of the Street Railway Association of the State of New York, and in 1909-1910 was first vice-president of the association.

Mr. A. C. Wegner has recently been appointed traffic manager of the Toledo & Western Railroad, Toledo, Ohio, to succeed Mr. C. T. Chapman, resigned. Mr. Wegner became connected with the Michigan Central Railroad in

December, 1906, as a stenographer. After being with that company several months as stenographer and foreign bill of lading clerk, he entered the service of the Toledo & Western Railroad as stenographer, and six months later was appointed rate clerk. In January, 1910, Mr. Wegner entered the service of the Chicago, Burlington & Quincy Railroad at Cleveland, Ohio, as contract agent and chief clerk to the general agent of the freight department, but returned to the Toledo & Western Railroad as chief clerk to the traffic manager. He was subsequently appointed traffic manager of the company.

Mr. D. C. Ward, whose appointment as superintendent of the Indianapolis & Louisville Traction Company, Scottsburg, Ind., to succeed Mr. H. D. Murdock, resigned, was noted in the *ELECTRIC RAILWAY JOURNAL* of Aug. 5, 1911, was formerly trainmaster and roadmaster of the company. Mr. Ward entered street railway work with the Indianapolis Street Railway in 1894, and continued with the company until 1903. In 1904 he accepted a position with the Wabash & Rochester Railway, a proposed road, and in 1905 he became connected with the Indianapolis & Cincinnati Traction Company, with which he remained until 1907. He entered the service of the Indianapolis & Louisville Traction Company in 1907, during the construction of the road. After acting as trainmaster of the company until the fall of 1908 Mr. Ward was also appointed roadmaster of the company.

Mr. Britton I. Budd, president of the Metropolitan West Side Elevated Railway, has been elected president of the Chicago (Ill.) Elevated Railways, which is a consolidation of the four elevated lines and union loop in Chicago. Mr. Budd was born at San Francisco, Cal., on Sept. 7, 1871. He was educated in the public schools of Chicago and at the Shattuck School, Fairbault, Minn. He entered railroading in the engineering corps of an Ohio railroad, and was with the Intramural Railroad at the World's Fair, Chicago. In 1894 Mr. Budd entered the service of the Metropolitan West Side Elevated Railway as a clerk in the storekeeper's office, and was storekeeper for

five years. In 1899 he was made purchasing agent, a position he held until April, 1907, when he was appointed general manager. In February, 1910, Mr. Budd was elected president of the Metropolitan West Side Elevated Railway and has continued in that capacity since that time. Mr. Budd is a member of the Union League, Western Railway and City Clubs, all of Chicago.



B. I. Budd

OBITUARY

Edward R. Price, at one time treasurer and general manager of the Interstate Electric Street Railway, North Attleboro, Mass., died at his home in North Attleboro on Aug. 6, 1911. Mr. Price was for many years treasurer of the North Attleboro Savings Bank and cashier of the First National Bank of that place.

Edward M. Shepard, a lawyer of New York, prominent in public life, died at Lake George, on July 28, 1911. Mr. Shepard was interested in many movements that had to do with civic betterments, and as counsel for the Rapid Transit Commission of New York he had much to do with the contracts under which the subway in New York was built and is now being operated.

R. B. Goodyer, of Cardiff, is dead at the age of seventy-three. Mr. Goodyer had long been connected with tramway and other transit systems, having held managerial appointments with Edinburgh Street Tramways, Rothesay Tramways, London Road Car Company and the Metropolitan (Paris) Tramways. For more than twenty years he was manager of the Cardiff branch of the Provincial Tramways, with which he continued his connection until two years ago.

Construction News

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

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

RECENT INCORPORATIONS

***Mobile (Ala.) West Shore Traction Company**—This company has filed articles of incorporation in Alabama to build an electric railway from Mobile to Alabama Port, near the west shore of Mobile Bay. Capital stock, \$10,000. Officers: H. Austell, president; J. N. McAleer, vice-president; E. E. Posey, secretary and treasurer.

Albany (Ga.) Transit Company.—Incorporated in Georgia to build an electric railway in the city and suburban districts of Albany. Capital stock, \$75,000. Incorporators: C. W. Rawson, S. B. Brown, F. F. Putney, W. W. Page and J. A. Davis, all of Albany. [E. R. J., July 22, '11.]

Omaha, Sioux City & Northern Railway, Omaha, Neb.—Application for a charter has been made in Nebraska to build an electric railway from Sioux City to Omaha, and branches from the main line to other towns in Nebraska [E. R. J., July 15, '11.]

New Castle & Beaver Falls Street Railway, Harrisburg, Pa.—Incorporated in Pennsylvania to build a 9-mile electric railway in Beaver and Lawrence Counties. Capital stock, \$54,000.

Bellingham, Mount Baker & Spokane Interurban Railway, Spokane, Wash.—Application for a charter has been made in Washington to build a 500-mile electric railway from Puget Sound to Spokane. Capital stock, \$25,500,000. [E. R. J., Aug. 5, '11.]

***Hancock County Electric Company, Cumberland, W. Va.**—Incorporated in West Virginia to build an electric railway in Hancock County. Capital stock, \$12,000. Incorporators: Nelson D. Miller, John F. Flood and Harry E. Armstrong.

Kanawha-Ohio Valley Trade Promoting Company, Parkersburg, W. Va.—Incorporated in West Virginia to build a gasoline railway from Parkersburg to Ripley. Another line will be built from Ripley to Charleston, with branch lines to Millwood and through the valley to Pocotalico, while another line will be built from Cicerone to Spencer, with branch lines. Another line from Blennerhasset Island to Vienna Island, as a belt line encircling the city of Parkersburg, and another line throughout the coal belt of the State. Capital stock, \$175,000. Albert E. Boone, Zanesville, promoter.

FRANCHISES

Montgomery, Ala.—The Alabama Traction Company has received a franchise from the Board of City Commissioners to build its tracks over Court Square and Dexter Avenue.

Chico, Cal.—The Northern Electric Railway has acquired from the Diamond Match Company all of its railway franchise and rights on Ninth Street, allowing the Northern Electric Railway to connect with the Southern Pacific Railway.

Fresno, Cal.—The Fresno, Hanford & Summit Lake Railway has asked the Board of City Trustees for a franchise to build an electric railway over I Street and Tuolumne Street.

Los Angeles, Cal.—The Pacific Electric Railway has received a franchise from the Council to build its tracks over Eighth Street, from Fremont Street to Garfield Street.

San Diego, Cal.—The San Diego Electric Railway has received a forty-two-year franchise from the City Council covering all of its lines in San Diego.

San José, Cal.—The Peninsula Electric Railway has asked the City Council for a franchise to build an electric railway in Alum Rock Park.

Santa Clara, Cal.—The San José & Santa Clara Railway has asked the Board of Supervisors for a franchise to build in Santa Clara County.

Santa Monica, Cal.—The Pacific Electric Railway has received a franchise from the City Council to build its tracks on Ocean Front to Third Street on Utah Avenue, and on Eighth Street from Oregon Avenue to Fremont Avenue.

Sebastopol, Cal.—The Petaluma & Santa Rosa Railway has received a franchise to build an electric railway over the public highways in Sebastopol.

Atlanta, Ga.—The Atlanta & Carolina Railway has received a franchise from the Board of Commissioners to build an electric railway over Moreland Avenue, from Ormand Avenue to the Paper Mill Road, a distance of 1 mile.

Louisville, Ky.—The Louisville Railway has asked the General Council for a franchise to build its tracks over certain streets in the West End.

Lynn, Mass.—The Boston & Eastern Electric Railroad, Boston, Mass., will ask the Municipal Council for a franchise in Lynn. The promoters of this railway have filed plans and profiles of the proposed route in Lynn and also in Chelsea, Revere, Salem, Swampscott and Danvers, and hearings on petitions accompanying these plans are soon to be held. The Beverly Aldermen will soon be asked by this company for a franchise to enable it to build its tracks in Beverly.

Kansas City, Mo.—The Metropolitan Street Railway has received a franchise from the City Council to build a double track over Woodland Avenue from Fifteenth Street, to connect with the northeast line of Missouri Avenue.

St. Louis, Mo.—The St. Louis & Jennings Railway has asked the County Court at Clayton for a franchise to build an electric railway from the western limits of the city to the Jennings Station Road. [E. R. J., July 22, '11.]

Oneida, N. Y.—The Oneida Railway has filed a petition with the Public Service Commission, Second District, for permission to exercise franchises for the construction of its road through Madison and Sconondoa Streets in Oneida. At the present time this company is operating over the electrified West Shore Railroad between Utica, Oneida and Syracuse. Double tracks will be laid from Main and Madison Streets to Cedar Street, from which point a single track will run along Madison Street to Sconondoa Street to a point where the tracks of the New York, Ontario & Western Railway cross the latter street.

Portland, Ore.—The Portland Railway, Light & Power Company has asked the City Council for a franchise to build its tracks over Sandy Boulevard, from East Seventy-second Street westward.

Middletown, Pa.—The Middletown & Elizabethtown Street Railway has received a franchise from the Borough Council to build an electric railway over the city streets. [E. R. J., July 1, '11.]

Water Gap, Pa.—The Stroudsburg & Water Gap Railway has asked the Borough Council for an extension of its franchise to build an extension in the Gap.

Providence, R. I.—The Rhode Island Company has asked the City Council for a franchise to extend its Reservoir line in order to connect with the crosstown line at Park Avenue.

Spartanburg, S. C.—The Greenville, Spartanburg & Anderson Railway has asked the City Council for a franchise to build an electric railway in this city.

***Watertown, S. D.**—Ferris Brothers, owners of the power plant in Watertown, have asked the City Council for an electric railway franchise.

Ft. Worth, Tex.—The Ft. Worth Southern Traction Company has received a franchise from the County Commissioners' Court to build an electric railway from Ft. Worth to Cleburne, via Everman, Burleston and Joshua. [E. R. J., July 15, '11.]

Salt Lake City, Utah.—The Utah Light & Railway Company has asked the City Council for a franchise to build its tracks over East Fifteenth Street and North State Street, in Salt Lake City.

Mt. Vernon, Wash.—The Nooksack Valley Traction Company has asked the City Council for a franchise to build an electric railway through Mount Vernon. [E. R. J., June 10, '11.]

Seattle, Wash.—The Lake Van Buren & Highland Park Electric Railway has received a franchise from the City Council to build its tracks over the city streets. W. H. Couffin and George Gunther are interested. [E. R. J., May 27, '11.]

TRACK AND ROADWAY

Fresno, Hanford & Summit Lake Interurban Railway, Fresno, Cal.—This company plans to let a contract for the grading of the extension from Fowler to Hanford as soon as the present grading from Fresno to Kingsbury is completed.

San Francisco, Oakland & San José Railway, Oakland, Cal.—This company will construct a fill on the Key Route 9500 ft. long and 1000 ft. wide.

Oakland, Antioch & Eastern Railway, Oakland, Cal.—The contract has been let by this company to construct a tunnel 1 mile long through the Contra Costa hills, and work will begin immediately.

Richmond, Cal.—John Nichols and the California Pressed Brick Company will present plans to the United Properties Company to build an electric railway from Richmond Avenue along Marine Drive and to the Pressed Brick Company's plant.

Sacramento Valley West Side Electric Railway, Sacramento, Cal.—The Dozier Construction & Engineering Company, Sacramento, has been awarded the contract by this company to prepare the necessary surveys and the data on the cost of construction for its electric railway from Red Bluff to Woodland. [E. R. J., May 13, '11.]

Central California Traction Company, San Francisco, Cal.—This company is reballasting its road from Stockton to Sacramento. At Sacramento double tracks will be laid as far as Colonial Heights, and on its waterfront property a wharf will be built and tracks laid over it.

Tidewater & Southern Railway, Stockton, Cal.—Surveying has been begun by this company for its proposed electric railway between Merced River and Merced. J. H. Wallace, chief engineer. [E. R. J., July 8, '11.]

Pueblo & Suburban Traction & Lighting Company, Pueblo, Col.—This company plans to spend about \$2,000,000 for extensions and improvements of its lines.

Atlanta (Ga.) & Carolina Railway.—This company has completed grading from White City to Carters, a distance of about 10 miles. Grading will be completed between Atlanta and Conyers by Oct. 1, and track laying will begin immediately.

Middle Georgia Interurban Railway, Jackson, Ga.—Track laying has been begun by this company in Jackson, and as soon as this part of the line is finished extensions will be made to Griffin to connect with the Central of Georgia Railway. W. Smith is interested. [E. R. J., July 29, '11.]

Boise & Interurban Railway, Ltd., Boise, Idaho.—This company plans to extend its line from Caldwell, its present western terminal, to Nampa.

East St. Louis, Columbia & Waterloo Electric Railway, East St. Louis, Ill.—The J. A. Ware Construction Company has been awarded the contract by this company to grade its line between East St. Louis and Waterloo. George C. Smith & Sons have been awarded the contract for the bridge and concrete work. [E. R. J., May 27, '11.]

Kankakee-Urbana Traction Company, Kankakee, Ill.—It is reported that this company has voted to issue \$300,000 of bonds to be used for the construction of its 75-mile electric railway between Kankakee, Champaign, Urbana and Villa Grove. The first section to be built will be between Urbana and Rantoul. G. M. Bennett, Urbana, president. [E. R. J., Oct. 8, '10.]

Springfield & Northwestern Railway, Springfield, Ill.—Surveys have been made by this company and much of the right-of-way has been obtained for its electric railway from Springfield to Petersburg, via Andrew, Cantrall, Athens, Tice and Old Salem. [E. R. J., July 29, '11.]

Kokomo (Ind.), Frankfort & Western Railway.—The A. J. Yawger Company, Indianapolis, has been awarded the contract by this company to build an electric railway from Kokomo to Frankfort. About 200,000 yds. of grading will be sublet. Charles La Rue, St. Louis, is in charge. [E. R. J., July 15, '11.]

Keokuk (Ia.) Electric Railway & Power Company.—It is reported that the Stone & Webster Engineering Corporation, Boston, has acquired this company's street railway system at Keokuk and will expend \$300,000 for reconstruction work.

Paducah (Ky.) Traction Company.—J. T. Omberg has been awarded the contract by this company to build a steel and concrete bridge over Island Creek.

Algiers Railway & Lighting Company, Algiers, La.—This company will extend its Algiers-Gretna line to McLellanville and the Mississippi River.

Boston (Mass.) Elevated Railway.—The Massachusetts Railroad Commission has approved the plans of the Boston Elevated Railway for the construction of its tracks on the East Cambridge extension of the elevated structure, from Causeway Street, near Haverhill Street, Boston, to Lechmere Square, Cambridge.

Interurban Construction Company, Hastings, Minn.—This company advises that it has begun work on its electric railway from Hastings to St. Paul, and that it will be extended to Rochester, Minn. W. L. Southerly, general manager. [E. R. J., July 15, '11.]

Piedmont Traction Company, Charlotte, N. C.—Work is nearly completed on this company's line from Hoskins to Mount Holley. [E. R. J., June 34, '11.]

***Beach City, Ohio.**—The citizens of Beach City plan to build a 26-mile electric railway from Beach City to Millersburg, via Winesburg, Mt. Hope and Berlin.

Dayton & Xenia Traction Company, Dayton, Ohio.—This company has obtained the necessary consent of property owners for the proposed loop on Fifth Street, Dayton, and hence up Main Street to Third Street, and west on Third Street to Ludlow Street.

***Portland, Ore.**—The Ladd Estate Company has begun work on its electric railway from West Moreland to East Moreland.

Portland (Ore.) Railway, Light & Power Company.—This company will spend \$135,000 for improvements in and around Salem. This work will include track improvements and additional power house equipment.

Beaver Valley Traction Company, Beaver, Pa.—This company will make improvements in this city that will cost about \$50,000, consisting of new track, overhead construction and carhouses.

Pittsburgh, Monongahela & Washington Railway, Monongahela City, Pa.—This company, which has changed its name from the Monongahela & Carroll Street Railway to the Pittsburgh, Monongahela & Washington Railway, plans to build an extension between Monongahela and Ellsworth during the next year.

Northern Electric Street Railway, Scranton, Pa.—This company will build extensions of its lines from Clark's Summit to the Hillside home and on to Newton and from Nicholson to Montrose.

Greenville, Spartanburg & Anderson Railway, Greenville, S. C.—W. J. Oliver has been awarded the contract to build this company's road between Greenwood and Greenville. Grading is almost completed, and track laying will begin in a few days.

Chattanooga Railway & Light Company, Chattanooga, Tenn.—This company has begun work remodeling its road up Missionary Ridge and along the Crest and reducing the grade in many places.

Denton (Tex.) Traction Company.—Overhead construction work and track construction work has been begun on the extension to the northern part of Denton and to the College of Industrial Arts.

Waco (Tex.) Street Railway.—This company plans to build several miles of new track in Waco, and to double-track its line to the exposition grounds.

Utah Light & Railway Company, Salt Lake City, Utah.—This company placed in operation on July 15 its West Temple Street extension. The line has been extended about 2 miles from West Tenth Street South to West Twelfth Street South in Salt Lake City.

Tyler Traction Company, Clarksburg, W. Va.—Surveying has been nearly completed by this company and construction will begin in a few days on its electric railway from Sistersville to Middlebourne. [E. R. J., June 10, '11.]

***Bloomington, Wis.**—E. Norwood plans to build an electric railway from Wyalusing to Shullsburg, through the towns of Patch Grove, Mount Hope, Bloomington, Lancaster and Plattville.

SHOPS AND BUILDINGS

Geary Street Municipal Railway, San Francisco, Cal.—The Board of Public Works has voted a \$400,000 bond issue, part of which is to be used to build a carhouse in San Francisco.

Ft. Wayne & Northern Indiana Traction Company, Ft. Wayne, Ind.—This company will build an interurban passenger station at Bluffton, Ind.

Des Moines (Ia.) City Railway.—This company will build a \$70,000 addition to its carhouse on Twenty-fourth Street, in Des Moines.

Louisville (Ky.) Railway.—This company has purchased a ten-acre tract of land at Twenty-ninth Street and Broadway, Louisville, on which it will erect a carhouse for its West End lines. It is intended to remove the repair department of the company, now located at Seventeenth Street and Walnut Street, to the new location and to enlarge the shops.

North Carolina Public Service Company, Charlotte, N. C.—This company will build a three-story brick and granite building in front of its substation on South Main Street, Charlotte, to be used as an office building.

Wheeling (W. Va.) Traction Company.—This company is building a new passenger station to replace the one that was destroyed by a storm a few months ago.

POWER HOUSES AND SUBSTATIONS

Birmingham (Ala.) Railway, Light & Power Company.—This company has awarded a contract to the Westinghouse Electric & Manufacturing Company for a 1000-kw, 60-cycle, self-starting rotary converter, with the necessary transformers and switchboards.

Geary Street Municipal Railway, San Francisco, Cal.—The Board of Public Works has voted a bond issue of \$400,000, part of which will be used to build a power house at San Francisco.

Connecticut Company, Bridgeport, Conn.—This company is building an addition to its power house on Seaview Avenue, and is installing new turbo-generating equipment.

Capitol Traction Company, Washington, D. C.—The Westinghouse Electric & Manufacturing Company has been awarded a contract by this company for two complete substation equipments, one covering a 1500-kw, 25-cycle, self-starting rotary converter with the necessary transformers and switchboards, and the other a 1000-kw, 25-cycle, self-starting rotary converter with switchboards and transformers.

Georgia Railway & Electric Company, Atlanta, Ga.—The Westinghouse Electric & Manufacturing Company has received an order from this company for a 1000-kw, 60-cycle, self-starting rotary converter with transformers and switching apparatus.

Illinois Traction System, Springfield, Ill.—This company has placed an order with the General Electric Company for a 2000-kw Corliss engine for use in its power plant at Riverton.

Des Moines (Ia.) City Railway.—This company has placed in operation a 300-kw rotary converter at its Klondyke Junction substation.

Metropolitan Street Railway, Kansas City, Mo.—The Westinghouse Electric & Manufacturing Company has received an order from this company for a 3000-kw, 25-cycle, self-starting rotary converter, with three 11,000-kva air-blast transformers and the necessary switching and blower apparatus.

Syracuse (N. Y.) Rapid Transit Company.—The contract for this company's substation, on Townsend Street, will be let this week, and construction work will begin immediately. The equipment will consist of two 1000-kw rotaries with the necessary transformers and appliances.

Charleston (S. C.) Consolidated Railway & Light Company.—This company will install in its new power house at Charleston three 1000-kw turbo-generators.

Nashville (Tenn.) Railway & Light Company.—This company has purchased a site on First Avenue and Second Avenue, fronting about 250 ft. on each street, for an addition to its power house.

Manufactures & Supplies

ROLLING STOCK

Evansville (Ind.) Railways is said to be in the market for five city cars.

Maysville (Ky.) Public Service Company is in the market for four city cars.

Detroit (Mich.) United Railway is reported to be in the market for fifty city cars.

People's Gas & Electric Company, Burlington, Ia., is reported to be in the market for ten city cars.

Boston (Mass.) Elevated Railway has ordered 100 Brill 27-MCB-1 trucks from The J. G. Brill Company.

New York & Queens County Railway, New York, N. Y., is said to be considering the purchase of ten closed cars.

Kokomo, Marion & Western Traction Company, Kokomo, Ind., is reported to be in the market for three or four interurban cars.

Union Electric Company, Dubuque, Ia., has ordered six 20-ft. 1-in. pay-as-you-enter cars, mounted on Brill 21-E trucks, from the American Car Company.

Milwaukee Electric Railway & Light Company, Milwaukee, Wis., is rebuilding six double-truck cars by removing the bulkheads and installing pay-within doors.

Public Service Railway, Newark, N. J., has ordered through Wendell & MacDuffie four size 6 Russell combination snow plows from the Russell Car & Snow Company.

Mount Hood Railway & Light Company, Portland, Ore., has ordered two 56-ft. baggage and express motor car bodies, mounted on Brill 27-MCB-3 trucks, from The J. G. Brill Company.

Hutchinson (Kan.) Interurban Railway has ordered a double equipment of No. 92-A railway motors, with type K-10-A control, from the Westinghouse Electric & Manufacturing Company.

St. Joseph Railway, Light, Heat & Power Company, St. Joseph, Mo., has ordered a partial equipment of No. 307 interpole railway motors from the Westinghouse Electric & Manufacturing Company.

Denver & Inter-Mountain Railway, Denver, Col., has ordered four quadruple equipments of No. 306-B interpole railway motors, with K-35 control, from the Westinghouse Electric & Manufacturing Company.

Southwestern Traction & Power Company, New Orleans, La., noted in the *ELECTRIC RAILWAY JOURNAL* of July 29, 1911, as being in the market for several interurban cars, will purchase four double-truck combination passenger and baggage cars, two single-truck city cars, two bench trailers and an electric locomotive. Headquarters, Hennen Building Annex, New Orleans.

TRADE NOTES

Railway Improvement Company, New York, N. Y., has received an order from the Milwaukee Electric Railway & Light Company, Milwaukee, Wis., for 300 coasting clocks, of which fifty will be installed on interurban cars and 250 on city cars.

Railway Audit & Inspection Company, Philadelphia, Pa., announces the appointment of Paul H. Diehl, former traveling representative through the West for the company, as district manager of the company's Chicago office, to succeed Charles Gable, resigned.

H. B. Tilley, manager of Messrs. Bruce Peebles' office in Manchester, England, has left England for an extended business tour in Canada on behalf of his firm. Mr. Tilley will visit all places of importance in the Dominion and expects to be away for fully a year.

Canadian Fairbanks-Morse Company, Montreal, Que., has been formed in Canada with a capital stock of \$2,000,000, to take over the Fairbanks-Morse Canadian Manufacturing Company and its subsidiaries, Dominion Safe & Vault Company, Ltd., and E. T. Fairbanks Company, Sherbrooke, Que.

Ackley Brake Company, New York, N. Y., has received an order for Ackley no-staff brakes, through the Compagnie Francaise des Freins Ackley, Paris, France, for Madrid, Spain, and Lyons, France. The company also reports the

receipt of an order for Ackley adjustable brakes from the Sao Paulo Tramway, Light & Power Company, Sao Paulo, Brazil.

Hildreth-Jones Company, New York, N. Y., has been formed by the consolidation of Hildreth Company, New York, and Morgan T. Jones & Company, Chicago, Ill., to act as inspecting and supervising engineers. Morgan T. Jones will be in charge of the Western district, with headquarters in Chicago. Mr. Jones was connected with R. W. Hunt & Company for almost ten years, and later was president of the American Bureau of Inspection & Tests for nearly seven years. Mr. Hildreth has been in business as a consulting and inspecting engineer in New York since 1888.

Western Electric Company, New York, N. Y., has recently put on the market for use in railway work a new dry battery. This new cell has the same high efficiency, long life, high voltage and great recuperative power that characterize the standard Blue Bell battery. It differs from the standard cell in that the cardboard carton has been treated with a special impregnating compound which effectually prevents moisture from reaching the cell proper. This will give sufficient protection so that the life of the batteries used in outdoor work will be as great as that of the batteries used in any other magneto service under ordinary conditions.

Westinghouse Electric & Manufacturing Company, Pittsburgh, Pa., reports the receipt of the following orders for power equipment: Kokomo Public Utility Company, Kokomo, Ind., for a 1500-kva turbo-generator unit, a 500-kw self-starting rotary converter, and the necessary transformers and switching apparatus; Olympic Power Company, Port Angeles, Wash., for two 3000-kva waterwheel generators, seven 1000-kva water-cooled transformers of 38,200 volts, on the high-tension side, with the usual exciters and switchboard; Dakota Power Company, Rapid City, S. D., for three 500-kva waterwheel generators, three 500-kva water-cooled transformers for the 24,000-volt transmission lines and three 200-kva, self-cooled transformers for 24,000 volts, high tension. A large switchboard is included in this order.

Wickecheoke Corporation, Trenton, N. J., has been incorporated with a capital stock of \$125,000 to organize associations and corporations for all kinds of business. Theodore G. Kitchin has been elected president and manager of the company. Mr. Kitchin has been connected with the operating department of the New Jersey & Pennsylvania Traction Company for the past two years, and previous to that time he was on the editorial staff of the *Daily State Gazette*, of Trenton. Frank M. Wilson will have general charge of the engineering department of the new company; J. H. Brown will be in charge of the foreign corporation business, and Leroy W. Skelton will manage the corporation supply department. The Wickecheoke Corporation will have headquarters at 58 Pennington Avenue, Trenton, and branch offices in Philadelphia, Pa., and Wilmington, Del.

ADVERTISING LITERATURE

Electric Service Supplies Company, Philadelphia, Pa., has issued a 24-page booklet entitled "The Book of the Automotoneer," which fully describes and illustrates this device for insuring proper controller operation on electric cars.

Ohmer Fare Register Company, Dayton, Ohio, is mailing two circulars showing the relation between the ordinary register and the Ohmer register, which indicates and prints, separately, a record of the different classes of fares collected in city cars.

Federal Storage Battery Car Company, New York, N. Y., has reprinted in booklet form the paper entitled "Beach Cars Equipped with Edison Storage Batteries," presented by Ralph H. Beach at the last convention of the Street Railway Association of the State of New York, at Cooperstown, N. Y.

Pratt & Whitney Company, Hartford, Conn., has issued Catalog No. 6 on small tools. The catalog is divided into seven sections, as follows: Taps, dies, milling cutters, reamers, punches, drills and miscellaneous tools. There are also several pages devoted to conversion and computing tables,

and an index. The publication is profusely illustrated and contains 250 pages.

C-A-Wood-Preserver Company, St. Louis, Mo., has issued a 24-page pamphlet on "Wood Preservation for Electric Railways—Its Principles and Evidence of Its Efficiency and Economy." Some striking statistics are brought out in regard to the saving effected by wood preservation, and illustrations are given of the condition of treated and untreated ties after the same period of use and under parallel conditions. Letters are also reproduced from users of C-A-Wood-Preserver, indorsing its value. These users include the Denver (Col.) City Tramway Company, the Indianapolis, Columbus & Southern Traction Company, Los Angeles & Redondo Railway, Freeport Railway, Dallas Consolidated Railway, Colorado Springs Electric Company, Durham Railway and Greenville Railway.

Westinghouse Electric & Manufacturing Company, Pittsburgh, Pa., has issued revised editions of the following sections of perpetual Catalog No. 3001, No. 121, on type CC carbon circuit breakers; No. 231 on expulsion type fuse blocks, No. 233 on outdoor type fuse blocks, No. 327 on type C wattour meters, and No. 667 on type KD generator and feeder panels. These revised sections embody new features of interest. The following sections describe an entirely new line of switchboard meters which are very compact in size and yet retain the accuracy, the long scale and other advantageous features of the older types: No. 307 covers types L, SL and TL switchboard meters; No. 310, types FM and TM switchboard meters; No. 311, types FD and TD frequency meters; No. 312, types FI and TI power factor meters; No. 314, type TG electrostatic ground detectors and voltmeters; No. 327½, type OA wattour meters, and section No. 740 covers 75-kva and 100-kva distributing transformers.

NEW PUBLICATIONS

The Railway Library for 1910. Compiled and edited by Slason Thompson, Director of Bureau of Railway News and Statistics, Chicago, 1911. The Gunthorp-Warren Printing Company. Cloth, 456 pages. Price, \$0.75.

Two years ago Mr. Thompson, the well-known writer on railroad subjects, conceived the idea of reprinting in pamphlet form different short papers and addresses by railroad authorities, discussing different phases of the railway situation, and the following year bound these in permanent form and sold them for 75 cents a volume. The plan has been followed again this year and the Railway Library for 1910 contains twenty-six articles, addresses, judicial decisions and reports, relating for the most part to subjects of rates and federal and State regulation, but including, also, one or two articles on statistics and on engineering subjects, such as block signal systems and the Pennsylvania station in New York.

Railway Shop Kinks. Compiled by Roy V. Wright, New York; 1911. *Railway Age Gazette*. Cloth, 290 pages. Price, \$2.

This book is largely a reprint of descriptions of steam railway shop kinks which have appeared in the shop section of the *Railway Age Gazette* in the first issue of the month during the past two years. It has been compiled under the supervision of a committee of the International Railway General Foremen's Association. While the methods and special devices described have all been gathered from steam railway shop practice, many of them are applicable to electric railway work and to many miscellaneous machine shop, boiler shop and smith shop operations. The arrangement of the material is excellent. The kinks are divided into seventeen classes, according to the character of the work for which they are used. The first section includes machine shop kinks of all kinds, and among the other classifications are oxy-acetylene welding and cutting, brass foundry kinks, tin and copper shop kinks, passenger car kinks, planing mill kinks, blacksmith shop kinks, air-brake kinks and paint shop kinks. Nearly every description is accompanied with one or more excellent line drawings or illustrations from photographs, which aid materially in understanding the text. With contents so large and varied a comprehensive index is essential to a book of this kind. The compiler has supplied such an index, of six pages.