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Chicago Subway Policy

Like most of the other large cities in the United States, Chicago's rapid transit needs have far outgrown its facilities, which already overtax the capacity of the streets in the business district. The four elevated roads are operating the maximum possible number of trains around the double-track "Loop" and the surface lines cannot crowd more cars on the streets during the rush hours. The only adequate remedy for the present congestion seems to be the construction of a system of subways under the streets to handle both elevated and surface cars. Because the situation is so complicated by the diversified ownership of existing surface and elevated roads, which hinders concerted action on the part of private capital, and because the city at the present time is unable to finance the construction of any adequate municipally owned subway system there is little prospect of the immediate adoption of definite routes and details of construction. Nevertheless the city authorities are endeavoring to anticipate the future and formulate a definite policy to be followed when the necessity for subways becomes so imperative that action can no longer be delayed. Last year Bion J. Arnold was retained as consulting subway engineer for the city, and his recent report to the Mayor and the City Council, which was noted in this paper for Feb. 11, 1911, page 272, was in the nature of an outline of a comprehensive system designed to meet the needs of all the transportation lines for many years to come. Even if his proposed plans are never carried out in whole or even in part, the report at least affords a good basis for discussion and the adjustment of differences between all the parties at interest pending developments in the all-important matter of financing and ownership. It is to be hoped that when the time for action arrives actual construction can be begun promptly and the desired relief from congestion afforded in the least possible time without a discussion lasting for months or even years over the location of routes, stations and levels. The unhappy situation in which New York is entangled, due to the total lack of any definite municipal policy regarding the construction and operation of new subways, should be an object lesson to the authorities of other cities in the United States which soon may have to face the same perplexing problem.

Eminent Domain for Transmission Lines

The question of giving power transmission companies the right of eminent domain for their transmission lines has received renewed attention this month owing to a recent report on the subject rendered in Massachusetts. In that State the Board of Electric Light Commissioners recommends against such legislation at present on the ground that the advocates of eminent

domain for such lines did not present sufficient evidence of the increased cost of construction due to the absence of the privilege of condemning land and property to warrant the recommendation of the policy. They further urge that the granting of eminent domain rights to transmission companies supplying a limited number of private consumers is probably unconstitutional, since the condemnatory privilege can be granted only for a demonstrated public use. It is notable, however, that the commission has recommended a law giving it the right to grant a line location through a town or city which obstructs the erection of circuits of a through character. Such a law is analogous to that passed a few years ago in the same State whereby the Railroad Commissioners are authorized to overrule the local authorities in regard to street railway locations when a through route is blocked by a municipality unwilling to give its neighbors the advantages of transportation connection. Judging from the evidence presented at the hearings, the commission's position is well taken for present Massachusetts conditions. But there can be little doubt that as high-tension transmission systems multiply in that and other States, following hydroelectric developments now under active consideration, the time will come when it will be a serious hardship if the power of eminent domain is permanently withheld. The object sought is directly in line with that of the conservation of national resources, which has now been adopted as a government policy. If the right is denied companies will be forced to continue the old wasteful methods of individual power generation and distribution from fear of being mulcted by mercenary land owners, as many companies have been in New England and elsewhere.

Method in Economizing Supplies and Working Time

Nothing can indicate lax shop management more plainly than the unsystematic handling of both old and new car supplies. In many shops there appears to be no one man who is responsible for gathering up and assorting the various odds and ends which are taken off during inspections and overhauls. Furthermore, when the individual workers must get their own supplies, they are bound to lose a good deal of time, especially if the supply centers are some distance from the job in hand. As a matter of fact, there should be no more reason for the men leaving their work to get supplies than for soldiers to go to their water boy instead of having the boy come to them. The practice of a central New York railway will show the aptness of this comparison. On this property the truck and motor department has one man who serves as scrap collector and traveling storekeeper. Discarded articles are carefully examined. Those parts which are badly worn are taken to the scrap heap at once, but the rest are laid aside for renewal. Bolts are retapped and rethreaded, bent bars and plates straightened, burnt controller segments cut down for use elsewhere, etc., under the direction of this specialist, who is thoroughly acquainted with the salvage possibilities of the company's rolling stock equipment. In this way, it has been found possible to reclaim many items which otherwise would have been replaced by new material. As this man makes his rounds among the men he learns their wants in advance and hastens to supply them. If the need can be fulfilled by a revamped article no requisition is necessary and the men can even help themselves if they so desire; otherwise, a formal requisition is required after actual proof that only a new part will do. A somewhat similar system of furnishing supplies

is carried out in the paint shop, where one man keeps track of every painter's progress and so can prepare his colors and brushes ahead of time. The practice of this railway shows that there are ungrasped opportunities to specialize profitably in a very important branch of car maintenance. Whether an installation is small or large the management ought to follow the policy of holding specified individuals responsible for assigned phases of the work from motor inspection to shop housekeeping.

EXPERIMENTAL CHANGES IN SCHEDULE

As a means for testing the chances of increasing the traffic, occasional experimental changes in schedules are to be recommended. Such changes can be introduced experimentally on some lines without danger of dissatisfaction on the part of the traveling public.

Where traffic density is light because of small tributary population, however, a change in schedules causes inconvenience to people who conform their hours of work and meals to the infrequent movement of cars. In cases where the headway of cars is well known to the public the experiments should be conducted so as to cause the least possible disarrangement of the plans of patrons. When a headway of 15 or 20 minutes is maintained, as for instance in a small community, it appears to the ordinary passenger like an imposition to increase or seriously to change the schedule, at least until he changes his habits of life to accord with the change.

However, experience has shown that in many instances changes have produced heavier traffic on lines whose maximum growth was thought to have been reached. There are properties upon which a new manager, employed with the expectation that he would decrease the service and thus lessen expenses, has followed a contrary policy in the hope of realizing better earnings and has won creditable results. If more service will induce more people to ride it is a simple matter to determine whether enough additional traffic has been developed to yield a profit above the full cost of operation of the additional equipment.

The advantage of short headways is that they invite the short-haul traffic. Many cities have so developed that they afford very little regular short-haul traffic, but in other places the companies have not taken advantage of their opportunities to grasp a short-haul business that might be had by a change in schedules. Of the large cities, New York furnishes the most familiar illustration of a series of unique business, theatrical, hotel and residential centers. Its enormous population and its transient visitors traveling from one district to another create a volume of short-distance business that suggests possibilities in other cities where new centers are undoubtedly being created in a less conspicuous degree.

Terminal limitations so restrict the headway maintained on some lines that the full possibilities of traffic have rarely received a fair test. These paralyze the system and there can be no improvement until they are corrected. The introduction of large cars has tended to prevent the upbuilding of short-haul traffic in the degree in which the headway has been lengthened. It is a question whether the saving in platform expense which results from the larger type of equipment is sufficient to compensate for the possible destruction of short riding, but this question can be answered only by a full investigation and an

alysis of the facts prevailing in each locality. This analysis will not be complete unless it includes, not only a consideration of the present and visible distribution of traffic centers, but also intelligent speculation regarding the future. Larger cars may effect a present saving in platform expense per passenger, but they may commit the company to a program of service from which it will be difficult to escape if future years should disclose short-haul possibilities that may be realized most successfully by investment in smaller cars, involving less outlay for maintenance and power.

Elimination of service means a sure reduction of expense, but expansion in the service may disclose latent possibilities of business that will cause a substantial increase in gross and net revenues, and it is worth experimentation.

THE SMOKE PROBLEM

We noticed briefly last week a report on locomotive smoke in Chicago. The public has long been acquainted with the sins of locomotives in the matter of smoke production, but protest has generally been met with bland denial or aggressive invitation to prove the allegation. Proof, if any were necessary, is now at hand, and while measurements of smoke density are of necessity only approximate it is safe to say that they treat with fairness, at least, the comparative situation as regards various sources of smoke. From Mr. Bird's figures the locomotives in Chicago are responsible for the yearly consumption of about 1,850,000 tons of coal, mostly soft coal of none too good quality. On a conservative estimate they deposit between 500 tons and 600 tons of cinders per day within the city limits of Chicago and produce more than 40 per cent of the smoke of the city in addition to the filthy deposit of cinders. All the miscellaneous power plants of Chicago together produce less than 75 per cent as much smoke as the locomotives, although they burn nearly three times as much coal.

The smoke production of a locomotive is a natural result of the degree to which combustion has to be forced and also of the impossibility of watching the offending smoke-stack for any considerable period of time. If an ordinary chimney belonging to an industrial plant poured out cinders and smoke as does a locomotive stack the proprietors would be enjoined as a nuisance, but the locomotives, being on the move a large part of the time, cannot be rigidly inspected, and it was only by most persistent efforts that Mr. Bird obtained sufficient evidence to be worth considering. It would be interesting to know, but difficult to determine, how great loss to the community in the way of fires, personal injuries and damage from dirt is inflicted by the locomotives running through the city. That the account would be a long one and sum up somewhat formidably can scarcely be doubted. Certainly the locomotive is in Chicago, as in most places, by far the worst offender in the way of smoke production.

The amount of smoke produced by ordinary heating apparatus seems to be trivial. In Chicago the coal consumption chargeable to heating figures up to a little less than 30 per cent of the whole, and only half of this amount belongs to the heating in the central district of the city, where low-grade coal is commonly used. Apartment houses and dwellings generally use a higher quality of coal than can be economically used in the larger railroad plants. The only plants comparable

to locomotives in their contribution to the smoke nuisance are some special industrial furnaces which show results even a trifle worse than those obtained from locomotives, although on a much smaller scale.

Now, the practical outcome of all this investigation of smoke resolves itself into the question of what is going to be done about it. So far as the railroads are concerned the instinctive answer that at once suggests itself is electrification. The same remedy would apply to the smoke produced from the miscellaneous power plants. These seem to aggregate in Chicago something between 500,000 hp and 750,000 hp in spite of the very active and successful campaign for motor service which has been carried on by the Chicago central-station men. The figures show that this campaign must be continued and broadened so as to decrease the smoke production to the minimum possible. It is altogether likely that at least half this miscellaneous power could be furnished by electric motors at considerably less than the present actual cost, and it is by no means certain that the proportion is not even considerably larger than this. The special furnaces shown by Mr. Bird's report to be particularly troublesome ought to be controlled by smoke inspection rigorous enough to compel the installation of so-called smoke-consuming furnaces wherever they are possible, which is in no small proportion of total cases. It has been proved that even the Indiana and Illinois coal can be burned with a very trifling amount of smoke provided the furnaces are designed for the particular work, so that in the long run this matter should be taken care of without difficulty. The railroads, however, remain, and it is reasonably safe to say that no effective smoke consumer for low-grade coal can ever be applied to a locomotive on account of the necessity for forcing combustion.

Mr. Bird considered various possibilities of preventing steam locomotive smoke, but concluded his remarks on this subject with the emphatic declaration: "The study that has been made along these lines indicates clearly that electrification offers the only final and satisfactory solution of the locomotive smoke problem. The use of special fuel for preventing smoke from steam locomotives is only a makeshift and will not satisfy the public." This statement was made after an analysis of the possibilities of using some other fuel than bituminous coal.

Anthracite would, of course, help matters, but is too costly. The other two available fuels are coke and oil. The former can certainly be used with good results in locomotives, and although its tendency is to produce sparks and cinders freely, this difficulty is not uncontrollable. Fuel oil is perhaps equally promising. Experiments made on some Eastern railroads, as well as many experiments abroad, show that petroleum can be worked successfully in locomotives at moderate cost and with production of very little smoke. In this country such use is hardly more than experimental, but looks practicable. It therefore appears that if electrification, undoubtedly the most desirable remedy, is too expensive, as it seems to be in some cases, a remedy at least partially effective can be found in the use of coke and oil. At all events the smoke nuisance from locomotives is a very serious matter in a densely built up city and ought to be suppressed so far as is possible. If the railroads are not willing to electrify their lines within the city limits, they certainly should be willing to go to the length of working out the smokeless fuel problem to a point at least which will improve the present situation.

THE SIMULTANEOUS INSTALLATION OF SEVEN HIGH-TENSION SUBMARINE CABLES

The Union Railway Company, of New York, has recently added to its high-tension distributing plant seven submarine cables across the Harlem River from its main generating station at 216th Street, Manhattan, to a point opposite on the Bronx shore. This makes a total of 17 cables crossing at this point, and the details of the recent installation of seven of

engineering standpoint was brought out in the later installation, the plans for which were materially altered.

The contract for manufacturing the cables as well as for their installation was let to the Waterbury Company, of New York. During preliminary operations by this company it was found expedient to remove one of the then existing cables. A suitable steam lighter with boom, hoist and tackle was brought to the ground and the heaving lines were attached to the cable to be removed. It was found after several ineffectual attempts to raise the cable that the trouble lay in the fact that the cable

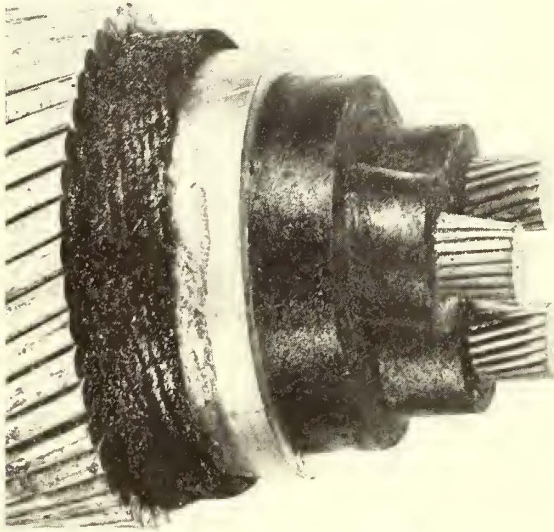


Fig. 1—Harlem Cables—Component Parts

them, simultaneously, are of more than passing interest owing to the engineering features involved.

A large portion of the trackage of this company lies in the Bronx, whereas the power station is on Manhattan Island. This necessitates the transmission across the Harlem River of all current to the substations in the Bronx. Up to September, 1910, 10 three-conductor No. 0000 paper-insulated, lead-cov-



Fig. 3—Position of Reels on Lighter

being operated upon was lying under several, if not under all, of the others. The disturbance to the remainder of the cables was noted at the cable houses when a strain was put upon the one cable and, after careful consideration, the attempt was abandoned as likely to cause serious damage to the other cables. Thus on account of the method followed in laying the original cables, namely, one at a time, it was necessary to abandon the

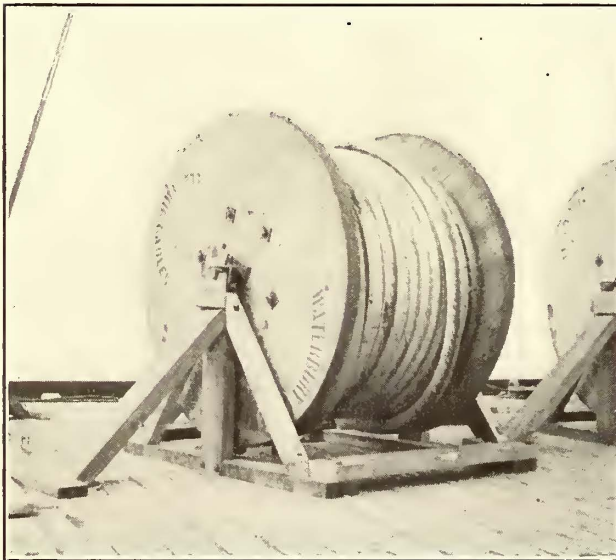


Fig. 2—Harlem Cables—Special Cradle Construction

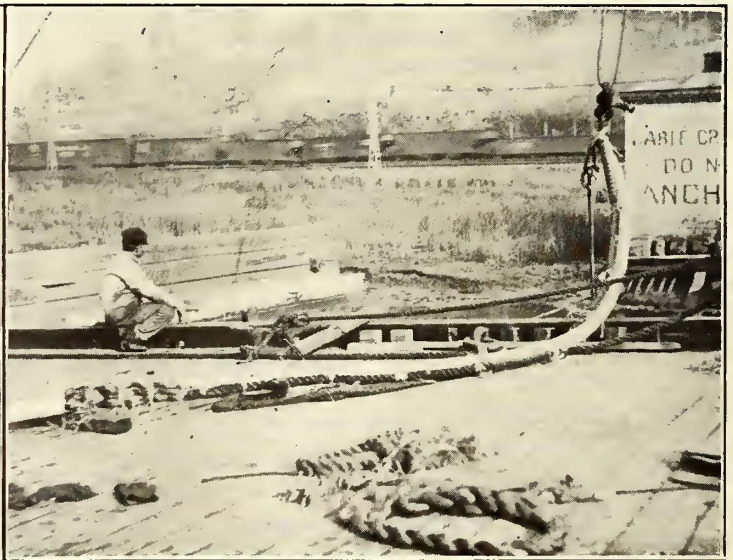


Fig. 4—Method of Lashing Leader to Cable End

ered and armored cables at a pressure of 6600 volts gave the desired transmission capacity, but increased trackage, traffic and heating load, with a desire to establish relief cables, led to the installation of seven additional cables of the same capacity and type. The original cables were installed between cable houses one at a time, tested and tagged and put in service. That this method of installation where a large number of cables is involved is not economical or good practice from an

cable which was to have been removed. As this type of cable, exclusive of installation charges, costs in excess of \$1.50 per foot, and as the distance between cable houses was something over 650 ft., the value of the abandoned cable can readily be seen to be an appreciable amount.

The Waterbury Company proposed to T. F. Mullaney, chief engineer of the Union Railway Company, a plan whereby the cables to be installed could be laid simultaneously, so that they

would occupy the same position in relation to each other throughout their length from one termination to the other. By following such a plan no cable could become fouled with another, and should an occasion arise demanding the removal of any one of them it could be done at no danger to the remaining cables. That this was a considerable undertaking can be noted from the specifications for the cable involved, especially in the matter of weight. Fig. 1 is a view of the cable laid, showing its component parts. The conductors are three in number, No. 0000 B. & S. gage stranded. Thirty-seven 0.0756-in. wires composed the strand. Around each conductor is a $7/32$ -in. wall of saturated paper. The three conductors are laid up into a core with jute fillers to make round, and a $7/32$ -in. belt of saturated paper is placed about them as shown. Over the belt is placed a $6/32$ -in. lead sheath containing 2 per cent tin. The lead sheath is served with tarred jute to act as a bedding for the armor wires, which are 42 in number and of No. 0000 B. & S. gage galvanized steel. The completed cable weighs 18.7 lb. per foot, or a total of 40 tons for the entire amount installed. The electrical features of the cable are as follows: Working voltage 6600, three-phase, at 25 cycles. The test pressure placed upon the cables at the factory of the manufacturer was 30,000 volts and, after laying, 20,000 volts.

In accordance with government regulations, a trench for the reception of these cables was dredged in the bed of the river to a depth of 26 ft. below mean low water. This necessitated an average cut of about 8 ft. in the dredging work. When finished the trench was approximately 10 ft. on the bottom,

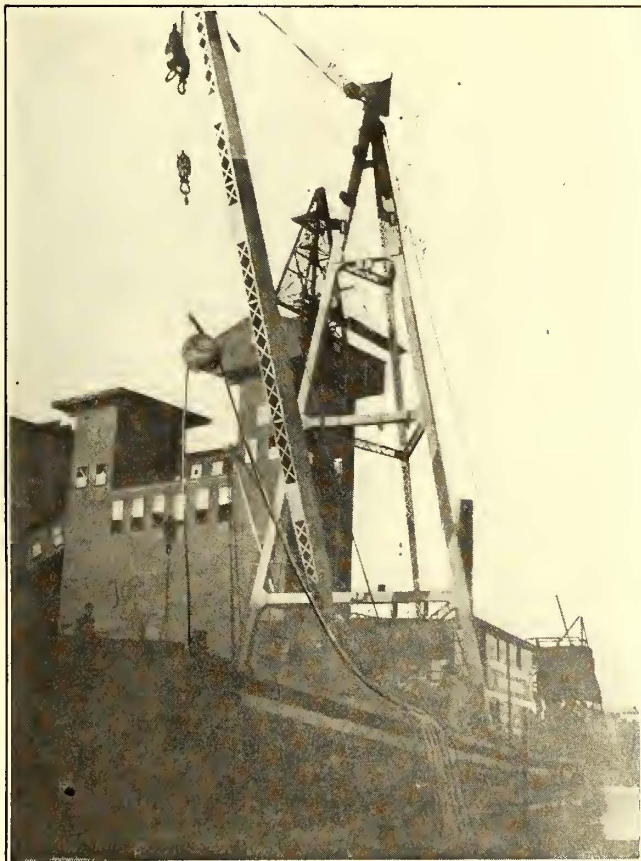


Fig. 5—Harlem Cables—Taking Slack Off Reel to Get at Cable End

widening to about 20 ft. at the surface of the river's bed, and extended the full width of the navigable portion as designated by the United States Engineers' Office. The time necessary to complete this work was about one week, 3500 cu. yd. of material being removed and towed to sea and there dumped.

In order that every facility for handling the cable reels should be ever present during installation operations, a 75-ton steam lighter with a complete equipment was employed to

transport the reels and for holding them while laying. The dimensions of the deck space available for storing the reels were 30 ft. x 65 ft. This was just sufficient. Special cradles were constructed to care for the cable reels and their design may be seen in Fig. 2. Owing to the slant of the deck, a side thrust was created which was cared for by the bracing shown, extending at the proper angle from just below the shaft to the deck.

Owing to the necessity for paying the cable off the lighter



Fig. 6—Harlem Cables—Diver Cutting Servage Straps

so that a spacing of approximately 12 in. would be maintained between every two cables—that is, so that all the cables would be brought within a space of about 7 ft. at the point of paying off—it was necessary to set the cradles in the form of an arc, with the paying-off point as the center. This arrangement is illustrated in Fig. 3, which shows the seven reels in position. The four cables at the right had been made fast to the racks in the east cable house at the time the photograph was taken and show the angle maintained between the reels and the paying off point.

The east or Bronx shore ends were made fast first. Owing to shallow water and bulkheads it was impossible for the lighter to approach the cable house entrance nearer than 70 ft., as shown in Fig. 3. This distance was overcome easily, however, as the lighter was equipped with a "gipsy engine," a boom with a right-angle reach of 90 ft. and three sets of hoisting falls. When the boom was full out it was easily possible to place it at the cable-house entrance. To the cable end a "leader" or pulling line was lashed by means of servage straps spaced about 3 ft. apart. The leader extended along the cable from its end about 25 ft., which was 5 ft. more than the length of cable to be pulled into the cable house. The other end of this leader was passed through a snatch-block secured to the cable house wall at about the level of the entrance holes and thence back to the drum of the gipsy engine. A set of falls were attached to the end of the cable and a slight strain was put on.

When this rigging was complete the leader was hauled in, carrying the cable toward the house. At the same time the boom and falls supporting the cable were moved out with the cable end and lowered so that the proper entrance level for the cable end could be obtained. The lashings on the cable end are shown in Fig. 4. When the end reached the entrance to the house the first servage strap holding the leader to the cable was cut. This freed the cable for a distance of about 3 ft., or to the point where the second strap was secured. Tension was again applied to the leader. This pulled out more cable, until the second servage strap was against the entrance. This strap was then cut, which freed 3 ft. more of cable, and

the working continued. This operation was kept up till the desired 20 ft. of cable was inside the house.

Surprisingly few men were required to secure these ends in the manner described. The machinery was made to do practically all of it. It was necessary to have a diver to stand at the house and cut the servage straps as they approached the entrance as the cable was worked up into the house. This was an arduous task. Fig. 6 shows the diver at work at the east cable house entrance, and to the extreme left of the house may be seen the snatch-block with the leader passing through it. In this way one after another of the seven cable ends was made fast.

The most dangerous portion of the work followed that just described, and consisted in getting the lighter across stream, paying the cable out meanwhile. The tides in the Harlem River at the point of work are probably as strenuous in their fashion as any to be encountered in and about New York Harbor. For this reason all attempts to cross were delayed until the first slack high water. This period lasts only about 15 minutes and quick action must be taken. Two tugs were chartered for the purpose, and their captains were made

can occur should a bend be made less than the allowable limits of curvature. The protection from such a hazard consisted in providing an empty reel under each cable when handled and having the drum of this reel of such a diameter that when the cable was over it the radius of the bend was ample to avoid an unsafe bend. The basic problem of the west shore landing consisted in removing the cable ends from the reels and then from the deck of the lighter, at the same time keeping them in their proper interrelations. This was accomplished in the following manner: An empty reel was placed under the outside or most southerly cable just back of the containing reel. This reel was then attached to the boom falls by a wire rope sling attached to the reel bar. A spreader was provided in this sling so as to allow the reel free movement about the bar. This reel was then raised, thus carrying the cable from off the retaining reel. When the end was free it was lashed to a hand line running up on the shore. Fig. 5 shows this detail of the work and the height to which the empty reel had to be raised to clear the cable from the containing reel. The spreader provided in the sling may be seen just above the reel in the illustration mentioned.

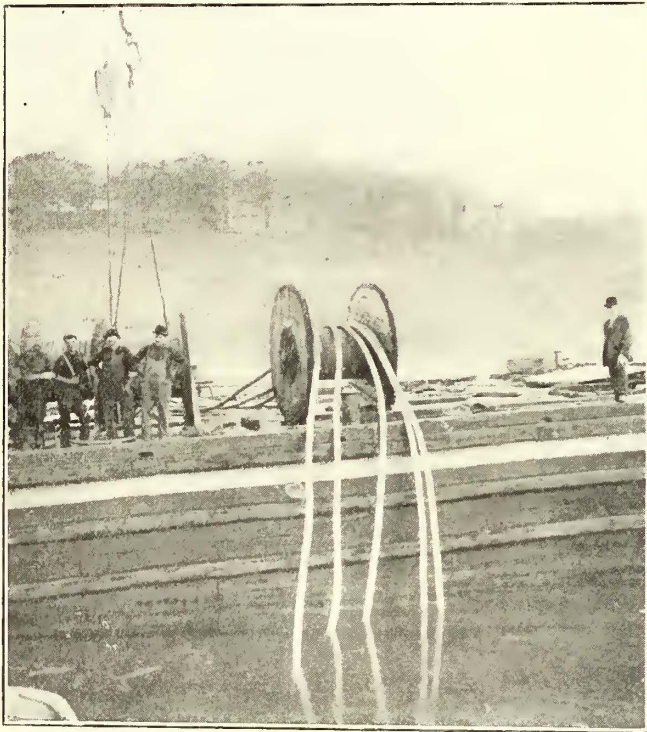


Fig. 7—Harlem Cables—Cables on Empty Reel

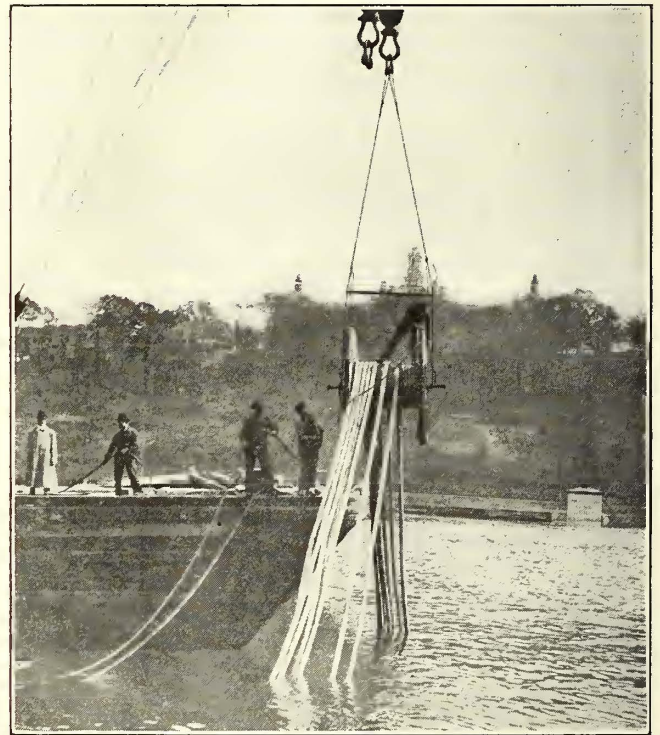


Fig. 8—Raising Reel and Cables to Clear Lighter

acquainted with the features of the work and received full instructions as to signals, etc. The center line of the trench was marked by range poles carrying white flags. J. B. Adams, of the Waterbury Company, directed the movements of the tugs from the deck of the lighter, where he could keep in range with the markers. When everything was in readiness the tugs began their portion of the work and the stream was crossed. Each reel was manned, and a braking strain was obtained by means of 2-in. x 6-in. timbers placed under the flange of each reel. By concerted action produced by signaling each cable was payed off with the same amount of slack, which was regulated by the strain, and by means of spacing blocks at the rail of the lighter were maintained at the proper separation of 12 in. and in the same relation to each other. The crossing of the river occupied about 10 minutes.

The landing of the west shore ends presented obstacles entirely at variance with those of the opposite side, for there remained on each reel, when the lighter was tied fast to the west dock, about 60 ft. of cable. The manipulation of the cables on account of this condition required extreme care. With cables such as these were, serious and irreparable damage

Another empty reel was set up on the deck of the lighter near the bow, and over the drum of this reel all of the cables were to be placed. When a cable was freed of its reel by the foregoing method and the shore line was fast to it, it was lowered onto the drum of the second empty reel, the hand line being used to haul the slack cable up on the shore as it was lowered. The most southerly cable on the deck, as originally placed, was in the same position on the reel as that commonly used for all of the cables in the west shore landing. This reel, still on the deck of the lighter, with five of the cables in place upon it, is shown in Fig. 7. When all seven cables were in place upon this reel it was slung from the boom falls and slightly raised above the deck. The lighter was then backed out of the way, leaving the cables suspended from the boom but free of the deck. This was possible because the boom of the lighter had an overhang forward when full out of about 30 ft. Fig. 8 shows the seven cables in the common reel just clear of the lighter's deck. The east cable house may be seen in the background to the right.

One of the deck reels with its cradle was then mounted on the shore opposite the point at which the cables were suspended

from the boom, and all the ends which had been pulled up on shore when the cables were being lowered into the one reel were raised and placed over the drum of the shore reel. Tackle was then made fast to a manhole in 216th Street and run to the seven cable ends and to the drum of the gipsy engine on the lighter. As this line was heaved the seven cables were simultaneously pulled farther up on the shore, the

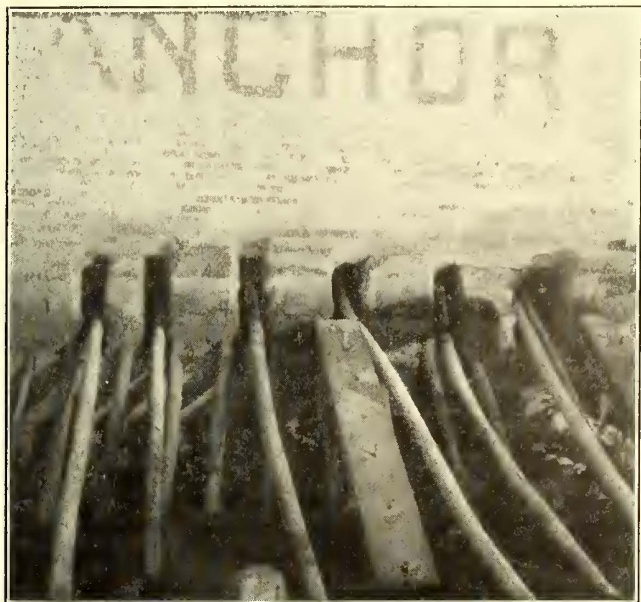


Fig. 9—Harlem Cables—East Cable House with Cables in Position

boom carrying the suspended reel being lowered to furnish the slack. The shore reel in its cradle acted as an idler wheel or pulley, greatly reducing the strain necessary to pull the cables. This operation when completed left all the cables in their proper relation, extending from the shore straight down into the water, the carrying reel having been taken out from under them.

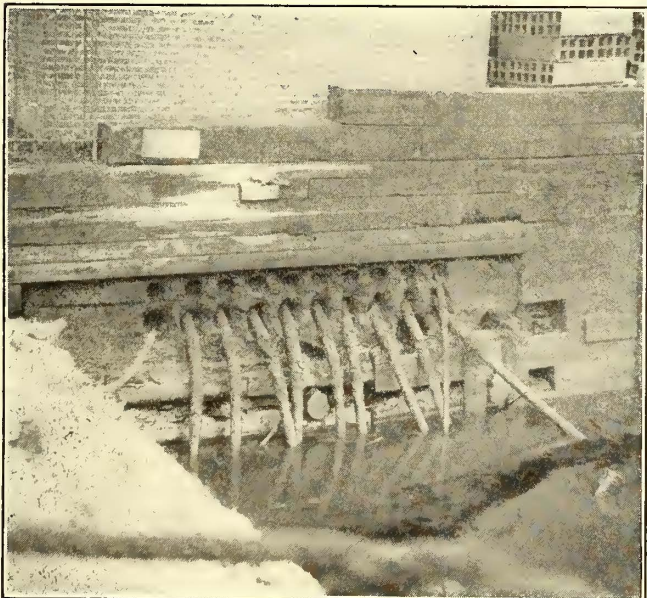


Fig. 10—Harlem Cables—West Cable House, Showing Duct Entrances

The same methods of pulling the ends of the cables into the house as were adopted for the east side were used in securing the west ends, namely by a pulling line secured to the cable at several points by servage straps which were cut at the entrance to the cable house as the cable was worked inside. The west side landing was more difficult because of the fact that the cables enter the house at right angles to their direc-

tion in crossing the river. The east cable house entrance is directly in line with the crossing. Fig. 9 shows the east cable house entrance, the top cables being those under consideration. For some reason ducts were not provided in the walls of this house for additional cables, so that holes had to be put through the concrete foundations as shown. The bottom cables in this case are those existing at the time of this installation and previously referred to. Fig. 10 shows the west cable house entrance, which is at right angles to the direction of the cables lying in the river bed. Spare ducts were provided in this house, as may be seen. This photograph was taken previous to the installation of the seven cables just described, and these cables later occupied seven of the top row of ducts shown.

The cable to the extreme right in Fig. 10 was pulled into the position indicated while the effort to raise the existing cable already mentioned was in progress. It clearly illustrates the interference caused by position. It was this fact, together with a logical review of conditions, which caused the simultaneous installation plans to be perfected. It was the consensus of opinion of those interested in this installation that whenever several cables are to be laid at one time they should be so laid as to preserve the same relations in the matter of location from one termination to the other. In submarine work it is impossible to view the progress of the work in the water, so that simultaneous installation in some such manner as that followed in this work is to be recommended.

The work described was completed and put in service about the first of January, 1911.

RECENT IMPROVEMENTS BY THE CORSICANA GAS & ELECTRIC COMPANY

The Corsicana (Tex.) Gas & Electric Company has recently constructed the car house illustrated in the accompanying engraving. It is of concrete throughout, the roof being concrete with a coating of bitumen to shed the water. The building is 30 ft. wide x 120 ft. long. It is lighted by three skylights 6 ft. x 12 ft. The skylights and windows are glazed with wire glass set in metal framing. The company has recently put two new



New Concrete Car House in Corsicana

pay-as-you-enter cars in operation and during the last year has ballasted most of its tracks.

This work has been carried on under the immediate direction of J. W. Carpenter, president and general manager of the company. Mr. Carpenter was formerly with the General Electric Company at Schenectady, but has been associated with the Corsicana Gas & Electric Company for the past four years. The Corsicana company operates 4 miles of track and 6 cars.

ELECTRIC EXPRESS DEVELOPMENT IN MASSACHUSETTS

Electric express service is rapidly coming to the front in Massachusetts as a source of income from street railway operation. During the past seven years the companies have had the benefit of working under a general law placing final jurisdiction regarding freight and express franchises in the hands of the Massachusetts Railroad Commission and are no longer dependent upon special legislation in this connection. The returns of the companies, as filed with the board for the nine months ended June 30, 1910, show that a revenue of about \$175,000 was derived by the companies during that period from the carriage of express matter and freight. About 35 companies have had authority given them to carry express matter or freight at the present time, franchises having been granted in about 100 municipalities.

Prior to 1903 special legislation had to be secured to permit a company to engage in the carriage of freight or express matter, unless such provision was included in the charter of the company. The passage of Chap. 202, Acts of 1903, replaced with a general law the course of special legislation which in the past had conferred vague rights upon particular companies. The law now stands in an amended form as Chap. 402, Acts of 1907, and provides that a street railway company may become a common carrier of newspapers, baggage, express matter and freight upon such portions of its system and to such an extent as, after public notice and hearing, upon the petition of any interested party, the aldermen or selectmen of municipalities and the Railroad Commission may approve. In case the local authorities act adversely or fail to act within 60 days from the date of the filing of the petition an appeal may be taken to the Railroad Commission, which then determines through public hearing whether public necessity and convenience require the granting of the petition. The board then is required to issue a finding, either dismissing the petition or setting forth the conditions upon which the company is to act as common carrier. Any company acting under this authority is subject from time to time to the regulations of local authorities, with the approval of the board as a final tribunal. The authority conferred upon any company by this act may be revoked or terminated at any time wholly or in part by the Board of Aldermen or Selectmen, with the approval of the commission. Since the passage of this law there have been efforts to obtain legislative authority for the grant of limited franchises for freight and express service, but the policy of the commission has been to favor the indeterminate franchise. Chap. 278, Acts of 1908, authorized all street railway companies within the State to carry milk and cream, subject only to the supervision of the Railroad Commission and regardless of any previous restrictions.

The companies now authorized to carry express or freight are as follows: Springfield Street Railway Company, Old Colony Street Railway Company, Boston & Northern Street Railway Company, Blue Hill Street Railway Company, Brockton & Plymouth Street Railway Company, Interstate Consolidated Street Railway Company, Springfield & Eastern Street Railway Company, Westboro & Hopkinton Street Railway Company, Natick & Cochituate Street Railway Company, Concord, Maynard & Hudson Street Railway Company, Connecticut Valley Street Railway Company, Lexington & Boston Street Railway Company, Middlesex & Boston Street Railway Company, Berkshire Street Railway Company, Boston & Worcester Street Railway Company, Citizens' Electric Street Railway Company (Newburyport), Fitchburg & Leominster Street Railway Company, Gardner, Westminster & Fitchburg Street Railway Company, Hartford & Worcester Street Railway Company, Haverhill & Amesbury Street Railway Company, Milford, Attleboro & Woonsocket Street Railway Company, Worcester & Southbridge Street Railway Company, Providence & Fall River Street Railway Company, Shelburne Falls & Colraine Street Railway Company, Taunton & Pawtucket Street Railway Company, Holyoke Street Railway Company, New Bedford & Onset Street Railway Company and Dartmouth & Westport Street Railway Company.

Franchises have been granted for the carrying of express, baggage or freight in the following municipalities:

Westfield, Russell, Huntington, Abington, Rockland, Whitman, Bridgewater, Middleboro, Springfield, Chicopee, Agawam, West Springfield, Canton, Milton, Plymouth, Kingston, North Attleboro, Taunton, Brockton, Dighton, Rehoboth, Raynham, Easton, Seekonk, West Bridgewater, Hopkinton, Ashland, Sherborn, Brimfield, Waltham, Westboro, Natick, Wellesley, Watertown, Lakeville, Freetown, Fall River, Quincy, Randolph, Avon, Hudson, Stow, Maynard, Acton, Concord, Deerfield, Whately, Hatfield, Cheshire, Stoughton, Newton, Marlboro, Southboro, Framingham, Billerica, Hanson, Pembroke, Somerset, Palmer, Monson, Wilbraham, Hinsdale, Ware, Lee, Stockbridge, Newburyport, Fitchburg, Leominster, Lunenburg, Gardner, Westminster, Sturbridge, Plainville, Great Barrington, Andover, Chelmsford, Ipswich, Lawrence, Hadley, Amesbury, Haverhill, Salisbury, Attleboro, Bellingham, Blackstone, Franklin, Hopdale, Mendon, Milford, Wrentham, Southbridge, New Bedford, Braintree, Holbrook, Egremont, North Adams, Sheffield, Merimac, Shrewsbury and Northboro.

Two types of electric express and freight orders are issued by the Railroad Commission, the first covering cases where the local authorities approve the petition of the company, and the second cases where the local authorities are for some reason overruled by the commission. An example of the first is given in the petition of the Berkshire Street Railway Company for authority to act as common carrier of baggage and freight in Great Barrington, and of the second in the similar petition of the Boston & Northern Street Railway Company in the town of Andover. The decisions of the commission in each case are appended.

EXPRESS, STREET RAILWAY.

Petition of the Berkshire Street Railway Company for authority to act as common carrier of baggage and freight in Great Barrington.

The petitioner has obtained from the selectmen of the town of Great Barrington, by an order dated Aug. 12, 1907, and amended by an order of said selectmen adopted Feb. 28, 1910, authority to conduct the business of a common carrier of newspapers, baggage, express matter and freight within that town.

After notice and hearing, — it is

Ordered, That the board hereby certify that public necessity and convenience require that the Berkshire Street Railway Company act as a common carrier upon the lines of railway named in the order of the selectmen granting said authority, to the extent of receiving, carrying and delivering such baggage and freight, described in the schedule on file with the petition, as is usually transported by express companies, restricted to exclude besides explosives all articles and commodities the transportation of which may be hereafter prohibited by the board, upon the understanding that the facilities by which and the manner in which the business is conducted shall be subject to supervision and regulation by the board from time to time as the public interests may require.

Attest: CHARLES E. MANN,

March 10, 1910. [6732]

Clerk.

Petition of the Boston & Northern Street Railway Company that it be required to act as a common carrier of baggage and freight in Andover.

It appearing, after notice and hearing, held under the provisions of Chapter 402 of the Acts of 1907, that the Boston & Northern Street Railway Company has heretofore filed with the selectmen of the town of Andover a petition for approval of the right to act as a common carrier in that town; and the selectmen having acted adversely on said petition, and the Board being of opinion that the rights petitioned for ought to be granted, — it is

Ordered, That the board hereby certify that the public convenience and necessity require the granting of this petition, and therefore that the Boston & Northern Street Railway Company be required to act as a common carrier upon the lines of its railway in Andover, to the extent of receiving, carrying and delivering such baggage and freight, described in the schedule on file with the petition, as is usually transported by express companies, restricted to exclude besides explosives all articles and commodities the transportation of which may be hereafter prohibited by the board.

This order is made subject to the following regulations and restrictions:

1. The company shall receive and deliver baggage, express and freight at suitable places or stations, and without discrimination or favor to any person or corporation.

2. All baggage, express and freight shall be transported in suitable cars to be provided with proper fenders, brakes and safety appliances, and to be run at no time at a higher rate of speed than that at which the company operates passenger cars.

3. The exercise of the authority herein granted shall in no way alter or abridge the duties and obligations of the company relative to the transportation of passengers, nor in any way interfere with the conduct of the passenger service.

4. The company shall be subject to such further regulations and restrictions as shall be lawfully made from time to time.

5. The authority herein granted is given upon the express condition that it shall not operate in any way to enhance the value of the assets of the company in the event of a purchase of the railway property by the town or State.

By the Board,

CHARLES E. MANN, Clerk.

June 30, 1910. [7824]

The accompanying table shows the approximate earnings of

the different companies from the carriage of express or freight in the nine months ended June 30, 1910:

TABLE SHOWING GROSS INCOME AND INCOME FROM FREIGHT AND EXPRESS, VARIOUS COMPANIES IN MASSACHUSETTS, FOR YEAR ENDED JUNE 30, 1910.

Company.	Gross Income.	Express and Freight Income.
Old Colony	\$2,141,044	\$63,980
Boston & Northern.....	3,432,902	.....
Connecticut Valley	149,097	2,684
Middlesex & Boston.....	469,839	2,117
Boston & Worcester.....	368,943	.....
Berkshire	342,479	7,232
Brockton & Plymouth.....	72,415	2,592
Pittsfield (now Berkshire).....	137,920	1,453
Providence & Fall River.....	35,916	12,709
Shelburne Falls & Colraine.....	19,164	11,230
Springfield	1,179,582	13,791
Worcester Consolidated	1,283,067	1,821
Worcester & Southbridge.....	183,279	2,268
Fitchburg & Leominster.....	195,438	3,205
Gardner, Westminster & Fitchburg.....	45,364	2,401
Holyoke	361,391	9,639
New Bedford & Onset.....	80,403	7,453
Dartmouth & Westport.....	170,494	26,030

NOTE.—Companies earning less than \$1,000 from carriage of express or freight are omitted from above tabulation.

The Railroad Commission has long recognized the advantages of electric express service, and comparatively little difficulty has been encountered by the companies in receiving carrier rights from the board, although in some cases the commission has issued special instructions. Thus in the granting of rights to the Old Colony Street Railway Company in Quincy the commission ordered the company to carry baggage, express matter and freight without discrimination in suitable cars equipped with proper brakes, fenders and safety appliances and without interference of any kind with the passenger service. The company is further informed that its assets are not to be considered enhanced by the common-carrier privilege, in the event of the purchase of the road by the State. It is not permitted to receive or deliver merchandise within the limits of any street or public way, and not more than two freight cars are to be run at any one time, nor can they be run in the highways between 12 p. m. and 5 a. m. The company is authorized to transport commodities usually handled by express companies, with the exception of explosives.

A provision in the Massachusetts law enables street railway companies to carry liquor, but in cases where the local authorities object the word "liquors" is usually stricken out by agreement between the company and the town authorities. The Railroad Commission has no authority to refuse to grant a franchise which includes liquors in the list of articles a company may carry.

The Boston Elevated Railway Company has as yet no freight or express carrying rights, but recognizes a growing demand for such facilities from companies which seek to send goods into Boston and transport them from the city into outlying districts. The company recently petitioned the Boston City Council for freight-carrying rights, but, pending the development of comprehensive plans, the petition has been denied, the matter not having as yet been considered on its merits. It is probable that legislation will be proposed at the 1911 session of the General Court to extend further the possibilities of electric express and freight carrying.

B. J. ARNOLD TO INVESTIGATE PROVIDENCE AND BUFFALO

At the request of the Mayor and Common Council of Providence, R. I., B. J. Arnold, chief engineer board of supervising engineers, Chicago Traction, will conduct an examination of the surface railway conditions of Providence and will present a report on this subject with recommendations as to improvements. On Feb. 11 Mr. Arnold outlined in a speech before the Conservative Club at Providence some of the problems which were confronting street railways at the present day and the methods which had been adopted in other cities, particularly in Chicago, to improve the local street railway system. According to Mr. Arnold the best results are secured only when the subject is approached in a broad and co-operative

spirit by the public, the company, the city government, the property owners and the financiers interested in the property. Other speakers were Edward G. Buckland, vice-president of the New York, New Haven & Hartford Railroad, which controls the electric railways in Providence, and Henry Fletcher, Mayor of the city.

Mr. Arnold has also been engaged by the International Traction Company, Buffalo, to appraise its properties. This appointment was made because of proposed refinancing plans of the company for which the Public Service Commission, Second District, New York, required an appraisal of the physical property of the company. The company submitted the name of Mr. Arnold as appraiser to meet this requirement and the commission approved his selection.

PRESIDENT TAFT'S TRIP OVER THE LINES OF THE ILLINOIS TRACTION SYSTEM

A short account was published last week in the ELECTRIC RAILWAY JOURNAL of the trip taken by President Taft on Feb. 11 over the lines of the Illinois Traction System as a guest of William B. McKinley. The accompanying illustration shows the President about to board the private car No. 233 of the Illinois Traction System at Decatur, Ill. For this view this



Reception by President Taft During His Trip Over the Illinois Traction System

paper is indebted to the International Stereograph Company, Decatur.

In the view President Taft is shown shaking hands with C. F. Handshy, general superintendent Illinois Traction System. At the President's left is standing Mr. McKinley with his hand on H. E. Chubbuck, vice-president executive of the company. At the steps of the car is J. M. Bosenbury, superintendent of equipment and motive power. The others are members of the reception committee from Springfield and of the President's party.

A municipal coal supply, with the Corporation Tramways as distributing agency, is a project which the Social Democratic and Independent Labor parties in Huddersfield, England, are advocating. Though not yet general, coal trucks are operated on the tramways in Huddersfield. The coal is carried from the railway sidings to three of the largest mills, and it is stated that the cost of carriage is about half what is charged for carrying coal in the ordinary way and that the corporation makes a substantial profit. The Labor party contends that in its tramway system the corporation is admirably equipped to handle, carry and deliver coal, and that by so doing the cost of coal to the householder would be cheapened about 5d a ton. Quite a number of English municipal railways carry light freight in competition with wagon service.

THE PROPOSED SCRANTON-BINGHAMTON RAILROAD

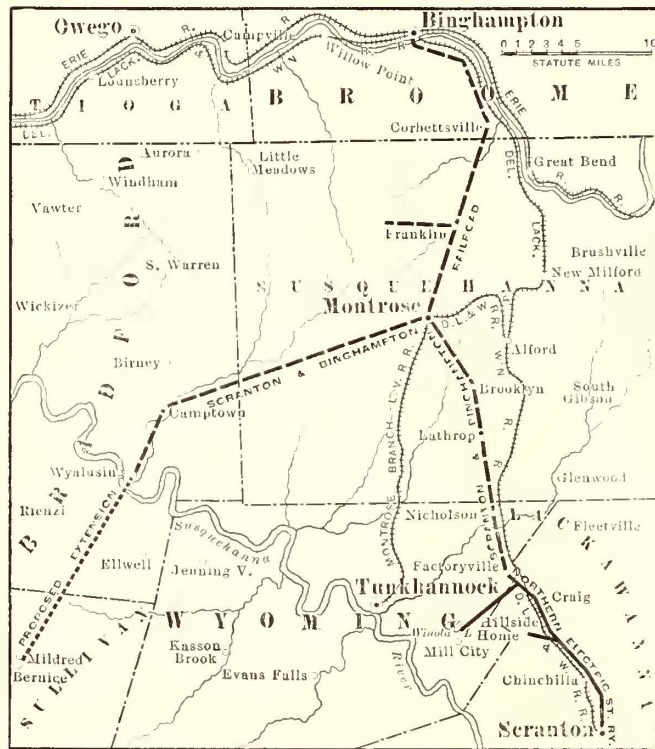
The Northern Electric Street Railway Company, of Scranton, was leased on July 1, 1910, to a new corporation known as the Scranton-Binghamton Railroad Company, which is to construct two lines—one from Scranton, Pa., to Binghamton, N. Y., and the other from Montrose, Pa., to Wyalusing, Pa. The first line will begin at Factoryville, a point on the line of the Northern Electric Street Railway 15 miles from Scranton, and will terminate at Binghamton, 50 miles distant, by way of Montrose, the county seat of Susquehanna County, Pa. The branch line through the Wyalusing Valley will be 30 miles long. The subsidiary Northern Electric Street Railway now has over 20 miles in operation and shortly will add 10 miles more, so that the system when completed will embrace 110 miles of track.

The Scranton-Binghamton Railroad Company has a steam railroad charter, but the Wyalusing branch only will be operated by steam until such time as it will pay to electrify it. It is

The standard track construction throughout will include 75-lb. T-rail. The overhead construction will be of the bracket type, similar to that of the Northern Electric Street Railway, with No. 0000 trolley throughout. The initial power requirements will be met by installing two 750-kw turbines in the enlarged plant of the Northern company at Dalton, 11 miles from Scranton. The transmission circuit to the three 400-kw substations will be 33,000 volts, three-phase, 25 cycles, the potential being double that which is now transmitted from Dalton. The new rolling stock for the Scranton-Binghamton lines will be of full interurban type, with baggage compartment, toilet room, etc. The smaller Northern rolling stock, however, will be fitted for train operation over the new line by installing automatic multiple unit control.

The handling of dairy products will be a very important feature of the new system. The district to be opened up now produces at least 5000 40-quart cans of milk a day, which have to be transported by teams to the steam railroad stations 8 miles to 20 miles distant. In connection with the development of the dairy business it is planned to establish a central creamery for the production of high-grade milk products. The milk products, as well as other perishable articles, will be handled like express matter. It is probable that electric locomotives and freight cars will be employed for this purpose. Sidings will be established wherever suitable terms can be made. In some instances farmers have offered right-of-way in exchange for this privilege.

The Scranton-Binghamton Railroad Company is owned by the same interests which built the Northern Electric Street Railway. The officers are as follows: President, T. J. Foster, president International Text Book Company, Scranton; vice-president, F. W. Wollerton; secretary and treasurer, W. L. Connell; general manager, and in charge of construction, R. W. Day.



Map of Northern Electric Street Railway, Scranton, and Projected Extensions by the Scranton & Binghamton Railroad

expected that the main line will get most of the large summer-resort business which is now brought to Montrose in a round-about way by the Delaware, Lackawanna & Western Railroad. In fact, the electric railway will save 11 miles each way. Freight and express matter will be an important factor on both new routes. The completed system will serve a population, adjacent and tributary to the lines outside of Scranton and Binghamton, of approximately 50,000, or about 500 per mile of track. The total population, including Scranton and Binghamton with their suburbs, is figured at 270,000.

The company has obtained a 60-ft. right-of-way which will not only permit double-tracking eventually, but also will allow the high-tension transmission poles to be set at a safe distance from the railway. Locations and surveys have been completed, and as much preliminary grading and similar work is under way as the winter weather permits. The first 2 or 3 miles of the main line will require rock cuts up to 1000 ft. in length, but the rest of the system will offer no physical difficulties. The first section to be completed will be from Factoryville, Pa., to Nicholson, Pa., a distance of 7 miles. It is planned to have this division in operation by the fall of 1911.

MAIL SERVICE ON ELECTRIC RAILWAYS

There were in operation on June 30, 1910, a total of 539 United States mail routes on electric and cable railways, covering an aggregate length of 7197.54 miles and involving an annual expenditure of \$673,830. The annual report of Joseph Stewart, second assistant postmaster-general, covering the year ended on that date, relates to the transportation of mails. It gives the following results for the year, as compared with the preceding year:

	ELECTRIC AND CABLE CAR SERVICE.		
	Year Ended June 30, 1910.	Increase Over Prev. Yr. No.	Per Cent.
Number of routes.....	539	14	2.67
Length of routes (miles).....	7,197.54	228.20	3.27
Annual travel (miles).....	11,629,652.15	*309,720.96	*2.59
Annual rate of expenditure.....	\$673,830.26	\$29,852.48	4.64
Av. rate of cost per mile of length.....	\$93.61	\$1.21	1.31
Av. rate of cost per mile traveled.....	5.79 cts.	*0.40 ct	*7.42
Av. number of trips per week.....	15.53	*0.94	*5.71

* Decrease.

In his report Mr. Stewart says: "The appropriation for the fiscal year was \$730,000; the amount expended, as reported by the auditor, was \$662,155, leaving a balance of \$67,845, out of which unsettled accounts must be paid. The appropriation for the fiscal year of 1911 is \$720,000. The annual rate of expenditure was: July 1, 1910, \$692,727; Sept. 30, 1910, \$690,684. The sum estimated as necessary for the fiscal year ending June 30, 1912, is \$740,000, being \$20,000, or 2.77 per cent, more than the appropriation for the current fiscal year.

"In accordance with the provision of law allowing the maximum rates of compensation to be paid for electric and cable car service, readjustments have been made, where the facts and circumstances would justify them, which have resulted in a net increase of \$9,708 for the fiscal year.

"The act making appropriations for this service for the fiscal year of 1910 includes a provision that not exceeding \$30,000 of the sum appropriated may be expended, in the discretion of the Postmaster-General, where unusual conditions exist or where such service will be more expeditious or efficient

and at no greater cost than otherwise. Under this provision the total annual rate of \$7,844 has been authorized. The act making appropriations for the fiscal year ending June 30, 1911, reduces the sum available to \$10,000. At the time of the writing of this report the annual rate of expenditure under this provision was \$8,565. It will be advisable, therefore, to increase the amount available for the year 1912 to \$15,000.

"In the last annual report attention was called to the desirability of making a certain amount of the appropriation for electric car service available for substituted motor wagon service, to enable the department to care for cases where it becomes advisable to substitute motor wagon service for electric car service. This could not otherwise be done on account of the fact that the appropriation for regulation screen wagon service is generally no more than sufficient to care for present contract obligations and increases which are foreseen. The appropriation act for the fiscal year of 1911 contains a provision in connection with the item for electric and cable cars authorizing the expenditure of not exceeding \$100,000 of the appropriation for regulation screen or motor screen wagon service, which may be substituted in lieu of electric or cable car service. . . . (in case of) unreasonable demands by electric car companies . . . in large cities."

Railway post office cars are operated on 681.63 miles of electric lines, an increase of 13.55 per cent over the previous fiscal year, and they furnished 625,044 miles of service in the year, an increase of 1.59 per cent. Closed-pouch service was furnished on an aggregate length of 6197.33 miles of electric lines, an increase of 2.65 per cent, furnishing 9,135,302 miles of service, or an increase of 4.18 per cent.

ELECTRIC AND CABLE CAR SERVICE IN OPERATION ON JUNE 30, 1910.

State or Territory	Number of Routes.	Length of Routes. Miles.	Distance Traveled per Annum. Miles.	Annual Rate of Expenditure. Dollars.
Maine	14	151.94	202,327.89	7,214.36
New Hampshire	10	76.85	118,703.88	7,011.98
Vermont	7	40.80	83,581.92	2,736.47
Massachusetts	63	614.03	1,175,037.91	72,301.01
Rhode Island	10	131.21	298,453.54	11,020.35
Connecticut	27	242.48	350,825.95	11,301.83
New York	40	548.69	1,148,790.30	68,839.42
New Jersey	14	148.07	278,974.88	12,476.95
Pennsylvania	73	908.46	1,586,736.06	82,456.22
Delaware	..	..	..	..
Maryland	12	229.05	528,545.61	48,274.46
Virginia	8	86.11	89,529.32	3,020.16
West Virginia	6	52.65	77,723.05	2,478.45
Total first section...	284	3,230.34	5,939,230.31	329,131.66
North Carolina	3	15.38	28,089.12	1,005.35
South Carolina	4	24.02	36,580.46	1,141.37
Georgia	4	28.75	61,343.07	2,043.15
Florida	3	19.78	29,005.97	998.18
Porto Rico	1	7.37	17,301.65	519.13
Alabama	6	47.03	122,699.92	3,751.29
Mississippi	2	3.80	5,152.80	229.51
Tennessee	6	80.27	156,860.60	6,484.26
Kentucky	2	29.70	81,851.79	2,455.54
Total second section.	31	256.10	538,897.38	18,627.78
Ohio	69	1,072.72	1,598,210.59	68,390.71
Indiana	13	241.90	198,093.43	5,972.87
Illinois	21	283.16	590,397.12	71,633.48
Michigan	20	414.45	550,504.23	23,052.56
Wisconsin	5	35.49	58,607.22	2,217.79
Minnesota	7	117.30	157,840.13	4,794.46
Iowa	11	257.06	267,503.84	10,570.09
Missouri	4	128.02	422,691.01	61,379.53
Total third section..	150	2,550.10	3,843,847.17	248,011.49
Arkansas	..	..	..	..
Louisiana	2	17.44	62,671.80	1,958.33
Texas	5	127.89	156,128.55	4,731.26
Oklahoma	3	26.40	33,805.93	1,105.03
Kansas	5	45.81	62,204.76	1,866.12
Nebraska	2	35.35	127,492.22	5,099.68
South Dakota	..	..	..	..
North Dakota	1	2.51	2,473.15	175.00
Montana	..	..	..	..
Wyoming	..	..	..	..
Colorado	3	48.91	75,047.92	2,263.89
New Mexico	..	..	..	..
Arizona	1	4.07	5,730.56	250.00
Utah	2	24.73	37,252.36	1,212.49
Idaho	4	72.02	85,887.82	3,828.84
Washington	11	256.37	316,457.22	19,203.70
Oregon	8	102.16	150,528.11	5,927.49
Nevada	..	..	..	..
California	27	397.34	191,996.89	30,437.50
Alaska	..	..	..	..
Hawaii	..	..	..	..
Total fourth section.	74	1,161.00	1,307,677.29	78,059.33
Grand total	539	7,197.54	11,629,652.15	673,830.26

TRANSFER TALKS IN TORONTO

For some time the Toronto Railway Company has been following the practice of posting on the bulletin boards of its car houses from time to time "talks" on the subject of transfers and other topics dealing with the operation of cars. The information contained in these talks is taken from private reports, complaints or complimentary letters received at the head office, or from other reliable sources where the information obtained is thought to be of benefit in educating the men to a better conception of their duties. The plan is followed of illustrating the points made, where possible, with actual incidents and of giving the trainman's number as proof to the men that the story is bona fide. This, it is believed, assists in bringing the lesson home. A few of the transfer talks follow:

"TRANSFER TALKS TO CONDUCTORS. THE VALUE OF A PROPERLY MADE TRANSFER REPORT

"No doubt some conductors think that the filling in of transfer reports is a piece of red tape invented by somebody in the head office who liked to make work for other people. A lot of the older men can remember when there was no report to fill in, and some of the younger fellows haven't been long enough on the job to see why anyone wants to keep track of the transfers.

"If you will think for a minute that 40 per cent of the people who pay a fare ride on another car without paying a fare and with only a transfer to hand in you will see that the company has a very good reason for keeping tab on the transfers. You don't need any long argument to prove that side of the question. It may not have occurred to you, however, that the transfer reports are important from the conductor's point of view. Well, here is a little instance that happened the other day:

"A well-known citizen came into the head office to complain about a conductor on a Belt Line car for punching his transfer an hour late. He said he got on a Belt Line car at the corner of King and Sherbourne Streets, rode up to Spadina and Queen, and there boarded a Dundas car. When he handed in his transfer the Dundas conductor refused it because it was an hour late. He looked at the transfer and sure enough it was punched for 12:10 instead of 1:10. Moreover, instead of being punched for Dundas the transfer was punched King. The conductor seemed to have made a nice mess of it, and the man was good and mad.

"However, the Belt Line conductor's transfer report was looked up and the transfer traced. Then it was found that the transfer was punched at the right time and was properly recorded. The conductor was right; the man wouldn't lie, and he wasn't trying to beat the company out of a fare. Everybody was puzzled for a minute. Then the passenger remembered that an hour earlier in the day he had ridden on a Belt Line car and had got a transfer to King East. When he got off he didn't see a car right on the spot and as he had only a little way to go he shoved the transfer in his pocket and walked. An hour later he got another transfer, correctly punched, but made a mistake and handed in the wrong one.

"It was one on him all right, so he apologized and went home. If the company wanted a testimonial for its system of checking transfers he would give a good one.

"Now, if this system hadn't been adopted, or if the Belt Line conductor hadn't made up his report properly, he would have had no way of proving that he hadn't made a bad break. It would have been his word against the passenger's, and the circumstantial evidence against the conductor would have been strong. Suppose he had had the bad luck to get into trouble like this two or three times. He might have been right every time, but he would have had no way of proving it.

"This ought to prove that the transfer reports aren't red tape any more than bookkeeping is. The conductor who doesn't look well after his transfer report and the business man who tries to muddle through without books are in the same boat.

"THE OBSERVER."

"TRANSFER TALKS TO CONDUCTORS. THE WELL-DRESSED BEAT

"Conductor No. 1769 let a man bluff him out of a fare on a Bloor car a couple of weeks ago, probably because Mr. Passenger was well dressed and carried himself as if he amounted to something out of the ordinary. This chap got on the car at the corner of College and Spadina with three others. The conductor called for the fares and collected three, but as the fourth man paid no attention to him he evidently came to the conclusion that he had paid.

"When the car got down McCaul Street our friend the dead-head asked for a transfer to King East. At this the conductor balked, for he probably had a suspicion of the passenger. Anyway, he told him that he should have asked for his transfer when he paid his fare. So the passenger took the conductor's number and got off, telling him he would have him fired.

"Conductor No. 1769 needn't be alarmed about that. He won't be fired for declining to give a man a transfer long after the time he is supposed to have paid his fare. He is much more likely to get into trouble for not collecting fares. There wasn't much excuse for him this time, for there weren't many people on the car. Next time he won't be bluffed just because a man is well dressed.

"Whether he was suspicious of the passenger or not, No. 1769 was dead right in not giving him a transfer when he didn't remember whether he was entitled to one or not. The time to give a transfer is when the fare is paid. Passengers are getting used to this habit and a few object lessons such as No. 1769 gave the deadbeat on the Bloor car will help a whole lot.

"Deadbeats are nearly all well dressed. If they weren't they could not get away with it, and as they don't intend to pay for their clothes they might as well order a \$40 suit as a \$10 one.

"There is one tall, elderly man who lives in South Parkdale. I have ridden on the car with him a dozen times and have never yet seen him pay a fare when the car was anyway crowded. When the conductor calls out 'Fares, please!' this aristocratic old chap takes a peek at the conductor over the edge of his paper and goes on reading. He is well dressed and looks like a banker. But he's just a 'beat' and one of these days he'll get what's coming to him.

"THE OBSERVER."

"The Following Extracts Were Taken from Reports Received at Head Office:

"Took King West at 3:05 p. m. Car 1116. Run 10. Conductor 205. Car well filled, several standing, first-class service given here. Conductor neat, very prompt, did not miss a fare, handled fare box well, examined and punched transfers carefully. One passenger gave an old transfer, but conductor detected it at once and had the passenger give a good one. Another passenger, seeing the incident, remarked to his friend: 'I always carry a stock of old transfers and often pass one off on a conductor, especially when a car is crowded.' All streets called regularly. Running all right.

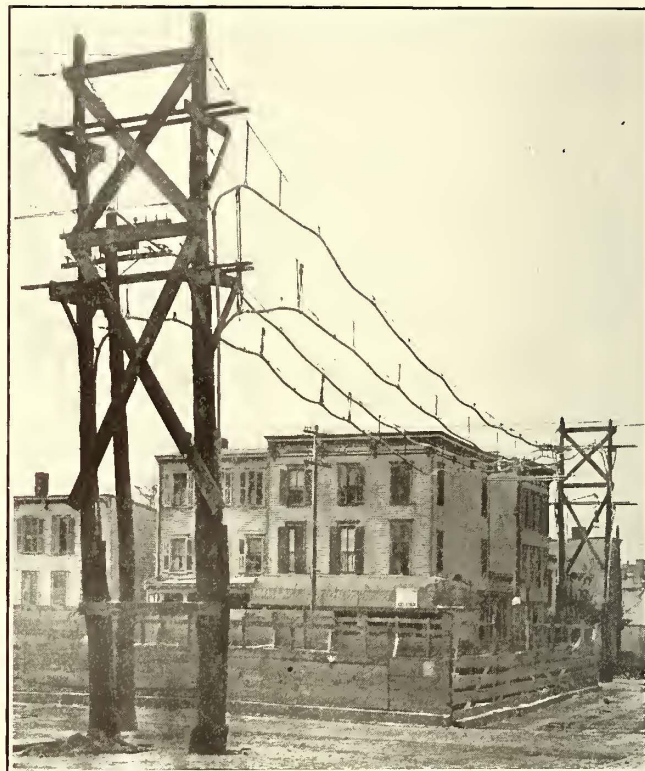
"Bloor 674. Conductor 1521, running east on College, 12:54 p. m. Twenty-two on car, five got on at Spadina. Conductor collected fares promptly; one very well-dressed man wearing a fur coat handed conductor a Spadina transfer. Conductor looked it over carefully and said: 'Pardon me, but this transfer is away late.' The man said: 'I have just got off the other car.' Conductor said: 'It is your business as well as mine to see your transfer is punched correctly. I can't accept this transfer.' The man put in another ticket. I have noticed this man getting on cars several times and his transfer is always late, but this is the first time he has had to pay the second fare.

"Yonge car at Carlton Street at 8 p. m. Run 20. Conductor 755. There were about 28 passengers on during this trip to Cottingham Street. A transfer was not collected from a woman who sat beside the stove. She boarded car at Bloor Street and held the transfer in her hand all the time. The fare box was handled in a very clean manner during the trip. Conductor knocked all tickets down into the slot as soon as

they were collected, and the table was kept clear all the time. I did not see this conductor give any transfers out during the trip. Those he received were examined carefully. Conductor was neat in appearance. Car was clean; well handled by motorman."

TEMPORARY HIGH-TENSION OVERHEAD CROSSING IN BROOKLYN

The accompanying illustration shows the method used by the Brooklyn Rapid Transit System to maintain the continuity of four high-tension lead-covered cables at the corner of Fourth Avenue and Twentieth Street, Brooklyn. Owing to the construction of an underground railway along Fourth Avenue it was found necessary to remove the cable duct which crossed the subway through Twentieth Street. Four heavy messenger wires were attached to these poles and extended to the ground



Temporary High-Tension Cable Crossing Over the Fourth Avenue Subway, Brooklyn

level for anchorage by "deadmen." The four high-tension cables, weighing about 9.5 lb. per foot each, were brought directly up the poles from the conduit subway and suspended by marlines from the messenger cables. The installation has been in place since October, 1910, and has proved entirely satisfactory. The construction is such that any damage which could happen to cables of this kind can be quickly located and repaired. A cable used in this manner will last a long time under conditions similar to this installation, but it would hardly be advisable to use it underground again. Special attention was paid to the protection of each cable where it leaves the ground and where it is attached to the poles in order to prevent boys or other maliciously inclined persons from causing damage. Had wood been used it would have been stolen and the cable left exposed; consequently, heavy galvanized iron was employed. In order to prevent boys from climbing up the ground portion of the messenger wires the space was fenced off and the wires were covered with greased barbed wire.

The Moscow-Windau-Rybinsk Railroad in Russia has recently installed on its Tsarskoe-Selo branch some A. E. G. motor cars operated by Hagen storage batteries.

FIRST REGULAR MEETING OF THE NEW ILLINOIS ELECTRIC RAILWAYS ASSOCIATION

The first regular meeting of the new Illinois Electric Railways Association was held at the Great Northern Hotel, Chicago, on Feb. 17. At this meeting 25 railroads were represented. The two sessions were presided over by H. E. Chubbuck, president of the new association and vice-president executive of the Illinois Traction System. C. E. Flenner, auditor of the Aurora, Elgin & Chicago Railroad, who has been actively engaged in the work of forming the new association, acted as secretary of the Chicago meeting. The important features of the meeting included the adoption of a constitution and by-laws, the completion of the list of officers of the association and the hearing of a report on the advisability of consolidating with the Central Electric Railway Association. On this latter subject it was the judgment of the meeting that the work of the two associations could be unified in some respects, but that it would be inadvisable, from the standpoint of the Illinois roads, to amalgamate the two associations.

At the close of the afternoon session announcement was made that the representatives of the traffic departments of a number of roads had decided to form an auxiliary association and carry on work supplementary to that of the Illinois Electric Railways Association.

The program of the Chicago meeting included the reading and approval of the minutes of the preliminary meeting held in Chicago on Jan. 19 and the approval and acceptance of the work of the temporary organization and its committees. W. L. Arnold, general manager Elgin-Belvidere Electric Company, made a report as chairman of the membership committee, stating that practically all of the companies represented at the Jan. 19 meeting had become members of the association and that since that meeting he had sent out membership letters and received encouraging replies from a comparatively large number of roads. C. L. Wilcoxon, general manager Chicago, Lake Shore & South Bend Railway; G. T. Seeley, general manager South Side Elevated Railroad, and E. C. Noe, general manager Northwestern Elevated Railroad, spoke in turn regarding the interest which their companies had taken in the formation of an Illinois association, and during the course of the meeting announced that their companies would become members.

CONSTITUTION AND BY-LAWS

The proposed constitution and by-laws next were read by the secretary. The association then went into executive session. At the close of the executive session it was announced that the articles governing the formation and operation of the association had been approved and made effective. A summary of the clauses of most general interest follows:

"CONSTITUTION

"Article 2.—Object

"The object of this association shall be to promote knowledge on all matters relating to the construction and management of electric railways which may be brought before the association for consideration and discussion, to collect and disseminate information of value to electric railway interests, to promote the interchange of traffic, to encourage social relations among its members and in all other proper ways to advance electric railway interests.

"Article 3.—Membership

"Section 1.—The membership of the association shall be confined to the State of Illinois; provided that the association may at any regular meeting by vote of two-thirds of all the members present extend the scope of the association so as to include any State or States.

"Section 2.—The membership of this association shall be divided into two classes—i.e., active and associate.

"Section 3.—The active membership shall consist, first, of interurban roads and city surface and elevated lines located wholly or in part within the territory embraced by the organization, to be known as 'railroad members'; second, persons engaged in or connected with railway supply business in all its branches, to be known as 'supply members.'

"Section 4.—'Associate members' shall consist of officials of electric lines outside of the territory and officers of other like associations.

"Article 5.—Duties of Executive Committee

"Section 1.—The executive committee shall exercise a general supervision over the interests, finances and affairs of the association, provide suitable quarters for meetings and make all necessary purchases, expenditures and contracts required to conduct the current business of the association; but shall have no power to make the association liable for any debt to an amount beyond the funds which at the time of contracting shall be in the hands of the treasurer in cash and not subject to prior liabilities.

"Section 2.—The executive committee shall recommend to the association for its approval a salary to be paid to the secretary-treasurer.

"Article 9.—Election of Members

"Section 1.—To become an active, supply or associate member a candidate's name shall be proposed in writing to the executive committee by at least two members in good standing at least two weeks previous to a regular meeting. All applications must be accompanied by the dues for the first calendar year. The fitness of the candidate for membership shall be considered by the executive committee, and, if approved, shall be reported to the association at the next regular meeting. The name of the candidate shall be acted upon, unless withdrawn at said regular meeting, and election to membership shall be by ballot, hand, yea or nay vote, a majority electing as the meeting may determine.

"BY-LAWS

"Article 1.—Time and Place of Meeting

"Section 1.—The regular meetings of this association shall be on the third Friday of each January, March, May, September and November at 10 a. m., subject to change by the executive committee after due notice.

"Article 3.—Voting

"Section 1.—On matters pertaining strictly to railroad method and standards or rules each railroad member is entitled to one vote, to be cast by the highest ranking officer present, supply, associate and honorary members not voting on these subjects.

"Section 2.—On all subjects except those mentioned in Section 1 all representatives of member companies, supply members and associate members may exercise the right of franchise.

"Article 4.—Dues

"Section 1.—The initiation fee shall be \$10 per company, and the annual dues shall be 50 cents per year per mile of track.

"Section 2.—The annual dues for supply members shall be \$25 for each company, and shall be payable at or before the annual meeting.

"Section 3.—The annual dues for associate members shall be \$5, and shall be payable at or before the annual meeting."

MEETINGS WITH THE RAILROAD COMMISSION

At the beginning of the afternoon session Mr. Chubbuck, speaking for the executive committee of the association, reported that it had held meetings and signified its willingness to accept the invitation of the Illinois Railroad and Warehouse Commission for any conferences which that body might announce.

REPORT ON CONSOLIDATION WITH CENTRAL ELECTRIC RAILWAY ASSOCIATION

B. E. Merwin, general superintendent Aurora, Elgin & Chicago Railroad, read the report of the committee of three which had been appointed to consider the feasibility of consolidating the new Illinois association with the Central Electric Railway Association. Mr. Merwin announced that a conference had been held with representatives of the Central Electric association and that the committee was impressed with the work which that association had done. He then called attention to the size of the association and to the benefits which its members obtained by co-operating in the solution of electric railway problems. He also spoke highly of the work of the Central Electric Traffic Association and described its rate and mileage bureaus. The committee, for which Mr. Merwin was speaking,

held that much good could be accomplished by consolidating the two organizations. The report of this committee was accepted and placed on file. The association then voted to continue this committee, consisting of B. E. Merwin, H. J. Vance and Charles Cox, instructing it to continue negotiations with the Central Electric Railway Association to determine whether or not it would be feasible for the roads in Illinois to join with the members of the Central Electric association in so far as the sale of interchangeable mileage was concerned. The committee was also instructed to determine, if the preceding arrangement could not be made, what plans should be put into effect to revive the sale of interurban interchangeable mileage in Illinois.

The association voted to continue the membership committee and instructed Mr. Arnold, chairman of that committee, to continue his campaign for new members and include in his correspondence the newly adopted requirements for admission.

ELECTION OF VICE-PRESIDENTS

Two vacancies in the list of officers were next filled by the election of Garret T. Seeley, general manager South Side Elevated Railroad, as first vice-president, and E. C. Noe, general manager Northwestern Elevated Railroad, as second vice-president.

TRAFFIC AUXILIARY

At the lunch hour the traffic representatives of eight roads in Illinois discussed the formation of a State traffic association which, among other things, could supervise the work of selling interchangeable mileage.

During the afternoon session of the Illinois Electric Railway Association Robert A. Barnett, traffic manager Chicago & Southern Traction Company, said that a number of Illinois roads, including the five interurban lines reaching Chicago, the Illinois Traction System and the Chicago, Ottawa & Peoria Railway, had considered the advisability of establishing a joint information bureau, ticket office and traffic office in Chicago. Mr. Barnett thought that the cost of such an office would be about \$10,000 a year. This would include the salary of a joint representative and would furnish an attractive location.

Mr. Chubbuck said that the Illinois Traction System and the Chicago, Ottawa & Peoria Railway had discussed having such an office to represent their two roads and that, therefore, they would very gladly co-operate with the other roads. He hoped that such an office might be established, but first thought it desirable for a committee to lay out carefully a scheme of work which would include the organization necessary, the cost and complete plans for apportioning the expense. A joint information bureau and ticket office would be valuable as city headquarters for representatives of outlying lines when visiting Chicago on business.

The association instructed the chair to appoint a committee of traffic men to prepare the information suggested by Mr. Chubbuck and to report at the March meeting of the association. The following committee was appointed: Robert A. Barnett, Chicago & Southern Traction Company; George Quackenbush, Illinois Traction System; Richard Breckinridge, Aurora, Elgin & Chicago Railroad; W. O. Woodward, Chicago, Lake Shore & South Bend Railway; E. H. Vivian, Chicago & Milwaukee Electric Railroad; A. W. Jordan, Chicago & Joliet Electric Railway. C. N. Wilcoxon spoke of the benefits to be obtained by the establishment of a joint ticket office and information bureau, and signified the willingness of his company to co-operate with other roads.

SIGNAL COMMITTEE

Following a short discussion on signals and their application to interurban railways, the chair appointed the following standing committee to collect information on signaling: G. T. Seeley, South Side Elevated Railroad; John Leisenring, Illinois Traction System; E. F. Gould, Aurora, Elgin & Chicago Railroad; T. M. Childs, Chicago, Lake Shore & South Bend Railway; L. E. Gould, ELECTRIC RAILWAY JOURNAL.

At the close of the Chicago meeting C. E. Flenner, speaking for E. C. Faber, general manager Aurora, Elgin & Chicago Railroad, invited the members of the Illinois Electric Railways

Association to make a trip over the Aurora, Elgin & Chicago line in one of the company's combination parlor and dining cars. Because of the lateness of the hour the trip was postponed.

The next meeting of the Illinois Electric Railways Association will be held at Bloomington on March 17. H. E. Chubbuck, vice-president executive Illinois Traction System, extended to the association the courtesies of a special train for a ride over the Illinois Traction lines which it is planned to take at the conclusion of the Bloomington meeting.

COMMUNICATION

BOSTON RAPID TRANSIT PLANS

Boston, Mass., Feb. 20, 1911.

TO THE EDITORS:

In the recent considerable discussions of plans for the improvement of rapid transit in Boston some important considerations have been too much left out of sight. The fundamental difficulty here in Boston is lack of foresight on the part of those who had the responsibility of planning the subways thus far constructed. As a consequence these have been merely palliative measures, unable to effect a radical cure of the existing evils. As you remarked in a recent article, the fundamental trouble in Boston is that all the transit lines converge inward like the ribs of a fan and are bound to produce congestion. The first subway served as a handle to the fan with the result to be expected, and the connection of this subway with the lines of traffic centering in the South Station was circuitous and ineffective. When the Washington Street subway was completed and the elevated trains removed from the original subway the case became even worse and the very heavy traffic converging at Park Street was practically cut off from the South Station. The transfer privileges readily granted by the Elevated Railway Company at Boylston Street involved going out of the subway, crossing perhaps the most crowded corner in Boston, waiting for a car and then pursuing a circuitous route thoroughly blockaded during the rush hours, so that as a matter of fact the traveler could always save time in good weather by throwing away the transfer and walking to the South Station. A suitable union of traffic between the old subway and the new, with efficient connections to both railway stations, for some reason does not seem to be considered favorably by the projectors of the new route.

Now the third subway, which is approaching initiation, is temporarily held up pending further consideration. The project as it stands will relieve congestion in the Back Bay district by adding to the congestion at the Park Street terminus, and a movement is now on foot to have its route changed from the river bank to one through Boylston Street. Further, a subway connection between the North and South Stations is planned.

Now, the particular point which the writer wishes to make is that these plans, which will undoubtedly relieve the situation for a while, leave out of account the unmistakable tendency of the city as regards growth. The business district is moving westward, primarily along Boylston Street, but inevitably also along other parallel and cross streets of the Back Bay, and none of the subway schemes thus far projected takes adequate account of this tendency. The projected subway down Boylston Street would be an excellent thing for the merchants along a comparatively short stretch, but it would not meet the other requirements demanded by the coming development of neighboring territory. Nor would it be advantageous for railway transportation. The hotel district, like the business district, is moving westward, and within a few years the Back Bay station will become the important passenger station in Boston. In other words, the center of traffic 10 years from now is pretty certain to be near Copley Square instead of near Park Street. The railway congestion from trains coming in from westward and southward lies between

the Back Bay stations and the South Station. The construction of the South Station, indeed, was another piece of temporizing.

Bearing this in mind, one evident solution of the difficulty would seem to be a compromise between the two rival routes for the new westward subway, by which it would follow the river-bank course to Exeter or Dartmouth Streets, cross through the very heart of the Back Bay district, touch the Back Bay stations, which ought to be united instead of scattered as at present, and then swing around through Park Square and the Boylston Street subway to the North Station, either over substantially the old route or via the Washington Street route. In connection with this, a direct tunnel between the North and South Stations might or might not be necessary. The fact is, at all events, that 10 years from now Park Street will not be a central traffic point, nor will the South Station have anything like its present importance as regards the local passenger service. The city would be, in fact, better off if it were abandoned as a passenger station altogether and used merely as a freight station for the accommodation of the wholesale districts which lie near it. It seems a short-sighted policy to arrange the rapid transit situation with a view to the traffic conditions of 10 years ago instead of taking into account those which are likely to exist 10 years hence. Any subway construction superimposed on that already existing in Boston involves engineering difficulties, but they would not be substantially more serious under the arrangement here suggested than under those now projected. It is not always easy to foresee future lines of development in the growth of a city in time to allow for them, and plenty of mistakes have been made in the past, as they will be made in the future. Nevertheless, in the case of Boston the handwriting on the wall is perfectly plain so far as general tendencies go, and it should not be overlooked in executing the important and costly works for the betterment of the city.

ENGINEER.

TRANSPORTATION FACILITIES IN CHARLESTON, S. C.

The City of Charleston, S. C., which now has a population of 65,000, is situated on a peninsula $1\frac{1}{2}$ miles wide and 3 miles long. The electric railway service for this city and the nearby Sullivan's Island and Isle of Palms is furnished by the Charleston Consolidated Railway & Lighting Company, which operates a total of 41 miles of standard gage track and two ferryboats under the management of George H. Waring, general manager, and T. W. Passailaigue, superintendent of the railway division. The trackage is divided as follows: Six city lines on East Belt, West Belt, Meeting, King and Broad Streets, Rutledge Avenue north, Suburban and Navy Yard line to the extensive fertilizer works, lumber mills and government Navy Yard; and the Seashore division for trans-bay traffic, including the service to the company's noted pleasure resort on the Isle of Palms. The latest construction is a 4-mile extension, including 1 mile of double track, to the northwestern suburbs of Charleston. The line ends at a park called the Schuetzenplatz and also reaches the baseball grounds located at Hampton City Park. All curves on this line are double-tracked to insure maximum safety in operation. The United States Electric Signal Company's block signal system has been in successful use for over two years on both the Seashore and Suburban divisions.

CITY SERVICE

About 31 cars are regularly operated on the six city lines. The East Belt and West Belt lines give a 7-minute service, while a 10-minute headway is used on the other routes. Most of the cars are of the single-truck type, 25 ft. over all. However, the Belt lines have recently been equipped with Brill semi-convertible cars which seat 32 passengers. The new cars have 20-ft. bodies, are 28 ft. 7 in. over all and are equipped with two GE-67 motors each. The seat-use factor in the Charleston city service is about 66 per cent.

As elsewhere in the South, the Charleston company also has to cope with the problem of race separation on the cars. The

South Carolina "Jim Crow" law calls for the separation of the races only on suburban lines over 5 miles long, but by agreement with the Charleston municipality white and colored passengers are not allowed to sit together. This practice has been found more satisfactory to both races than the use of compartments or movable partitions.

SUBURBAN AND NAVY YARD LINE

The Suburban and Navy Yard line carries thousands of black and white workers to and from the fertilizer works. For obvious reasons this traffic is confined to separate cars during the rush hours. Between 6 a. m. and 7 a. m. and between 4.30 p. m. and 6.30 p. m. groups of six cars are sent out on 15-minute headway. Three cars of each group are for white and three for colored people. As the traffic decreases, similar cars are run two and two. A half-hour service is maintained with single cars during the day, and the passengers are then separated, white on one side of the aisle and colored on the other.

The principal rolling stock for this service comprises 15 semi-convertible cars 37 ft. over all with 30-ft. bodies mounted on DuPont trucks, which are equipped with two GE-57 motors. With these cars the 8-mile trip from the Battery in Charleston to the Navy Yard is made in 45 minutes. The latest cars for this service comprise six Brill full-convertible cars 46 ft. over all, with slat seating for 56 passengers. These cars will be used principally as trippers.

THE SEASHORE DIVISION

The Seashore division is an 8-mile line passing through the United States government reservations on Sullivan's Island, several summer resorts and the Isle of Palms, which last is the property of the Charleston Consolidated Railway & Lighting Company. The Mt. Pleasant terminus is reached by ferry from Charleston in 15 minutes. The boats, which are owned and operated by the railway and named "Lawrence" and "Sappho," are of 1500 and 750-passenger capacity respectively. Only the smaller boat is required in winter, but between May 15 and Sept. 15 the traffic is very heavy. The round trip to the Isle of Palms, including ferriage, costs only 30 cents for 22 miles. The one-way trip by car and ferry from Charleston is made in the fast time of 40 minutes. The Sunday and holiday travel to the Isle of Palms varies from 3500 to 5000 people, some of whom are brought into Charleston on reduced rate combination steam railroad tickets. The natural attractions of the island are enhanced by a dancing pavilion 1000 ft. x 140 ft. in size, which is large enough for 1500 dancing couples and 2000 pavilion seats at one time. There are a hurdy-gurdy and a Ferris wheel. On Sundays concerts are given by the Metz Military Band at a cost of \$3,500 for the season. Hotel Seashore, which can accommodate 300 guests, is located on the beach near the pavilion. There is also a large café adjoining the pavilion which caters to the large crowd of Sunday guests.

The rolling stock for this service consists of 19 double-truck cars seating 40 passengers and each operated by two GE-57 motors. During the periods of heavy travel each motor car takes a 40-passenger double-truck trailer. Two box cars, each equipped with two GE-57 motors, and two flat trailers are used to handle the freight business on this line. Express packages received from the Southern Express Company's agent at Sullivan's Island are handled at an average rate of 15 cents. The company also has a contract with the United States government for carrying mail. The annual revenue from mail transportation is about \$1,300, based on three cents per pouch-mile. Mail is carried on the Suburban division at the same rate.

The maintenance of way department of the Michigan United Railways has erected neat and substantial fixed signals at all places along the tracks between Jackson and Battle Creek where obstructions require that a snow plow be lifted. Each signal consists of a 6-ft. length of 1-in. pipe, to one end of which is attached a triangular-shaped flag of sheet steel. The pipe is painted black and the flag yellow. These markers can easily be set in the track grade at snow-plow obstructions and serve their purpose during the winter and easily be collected and repainted during the summer.

RAILWAY CROSS-TIES PURCHASED IN 1909

The Bureau of the Census of the Department of Commerce and Labor has just issued Bulletin No. 8 on forest products which gives the statistics of cross-ties purchased by the steam and electric railways of the United States in 1909. The total number of ties purchased in that year was 123,751,000. This is an increase of 11,285,000 ties, or 10 per cent over the number purchased in 1908, but it is 29,950,000, or 19.5 per cent, less than the number reported for 1907. The number of ties purchased for new track is especially significant of improvement. More than 13 per cent of the total number purchased in 1909 were for use in new track, whereas in 1908 only 6 per cent of the total number purchased were intended for new construction. The electric railways bought 2,615,000 ties for new track, which was equivalent to 31.4 per cent of their total purchases.

Ten kinds of wood supplied 97.3 per cent of all ties purchased. About 46 per cent of the total number purchased were cut from oak, whereas ties made from Southern pine, the wood ranking next in importance, represented only 17.6 per cent of the total. The increase in the use of inferior species of wood, especially gum, spruce and beach, is noteworthy as an evidence of the growing use of the method of wood preservation through chemical treatment. Approximately 77 per cent of all ties purchased in 1909 were hewed. Douglas fir is the only important lumber from which more ties are sawed than hewed. Of the ties purchased by electric railways 67.5 per cent were hewed and 32.5 per cent were sawed. Next to oak ties the electric roads purchased more chestnut ties than any other species. Almost as many Southern pine ties were purchased by them, and ties of cedar, redwood and Douglas fir ranked next in importance. The less durable woods are but little used by the electric roads, doubtless because they lack the facilities for applying preservative treatment which a number of the largest steam railroads now possess.

The total cost of all ties purchased in 1909 was \$60,320,700. The electric railways purchased ties to the value of \$4,181,700. The average price paid by electric railways for ties was 50 cents, whereas the average price paid by the steam roads was 49 cents. While the steam railroads paid an average of 49 cents for sawed ties the electric railroads paid an average price of 53 cents. Although the average ties used by electric railroads are smaller than those used by steam railroads, the prices paid for them are generally higher. This is due not only to the disadvantages incident to contracting for smaller quantities of material, but also to the fact that electric roads usually purchase ties at points where the price includes railroad transportation charges. The highest average price reported by electric roads was 82 cents for treated Western pine ties, while the lowest average price paid by them was 31 cents for hewed hemlock.

A total of 22,030,000 ties were treated by some preservative process. Of these electric roads purchased only 835,000. The ties which were treated before purchase by electric railways numbered 582,000 and 253,000 ties were treated after purchase. There are now 70 wood-preserving plants in the United States, a number of which are owned by the steam railroads. The principal preservatives used are creosote, oil and zinc chloride. The electric railways own only a few cylinder-treatment plants and the open-tank method is the one principally used for applying preservative treatment.

COMMITTEE ON FREIGHT AND EXPRESS TRAFFIC

The full personnel of the committee on freight and express traffic of the Transportation & Traffic Association has been announced by President Page. It consists of H. E. Reynolds, Boston, Mass. (chairman); Charles F. Berry, Portland, Maine; George W. Quackenbush, Springfield, Ill.; F. W. Watts, Utica, N. Y.; F. D. Norviel, Anderson, Ind., and A. R. Piper, Brooklyn, N. Y.

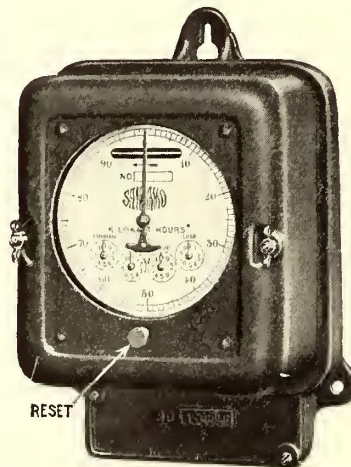
WATT-HOUR METERS FOR CAR SERVICE

Recognizing the growing demand for a suitable street car meter, which can be installed and operated with minimum attention, the Sangamo Electric Company, Springfield, Ill., has placed on the market the watt-hour meter illustrated herewith, after making exhaustive tests in regard to the amount of jarring, pounding and vibration which a mercury floated meter system could withstand. During the past two years the mercury flotation type meter has been in continuous service on many electrically lighted steam railroad cars, and has withstood successfully the rough usage and shocks unavoidable in traction operation. Street car service was also successfully met. The results have been so satisfactory that a complete line of meters designed especially for electric railways has been produced.

In general, the mercury meter consists essentially of a disk-like motor element partly or entirely submerged in mercury, so that current can be led in and out from this element by the mercury through fixed metallic contacts set in the walls of the chamber containing the mercury and disk. The reaction of the current passing radially or diametrically across the armature, with a magnetic field properly set with respect to

the armature, will cause a rotation which will be proportional to the amount of current passing through the armature.

The registering dials are five in number, four small and one large dial, all reading in kw-hours. The four small dials perform the usual functions of totaling the entire energy consumption, the readings being taken at any desired interval. The large dial and pointer constitute a trip register in which the gearing is so proportioned that energy consumption per trip or per diem causes the pointer to travel over



Watt-Hour Meters for Car Service

practically the entire circle. This long pointer can be reset by removing the seal cap on a reset mechanism and inserting a small key. When it is desired to eliminate the use of keys the meter is provided with a small push button reset mounted on the case.

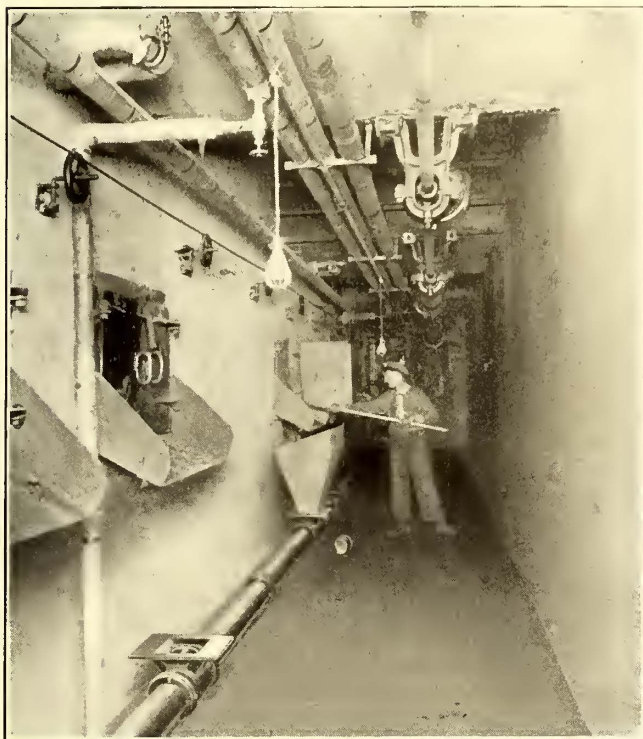
Before starting out a car the inspector sets the long hand to zero. Upon completion of the trip or day's run the reading of the register is noted in the inspector's record book, after which the hand again is reset to zero position ready for the next run. This resetting of the trip or day registering hand in no way affects the registering of the small dials, which totalize the entire amount of energy consumed.

The advantage of this fast moving reset pointer is obvious, as the amount of power required each day can be accurately determined, the motorman is constantly checked as to his skill in handling the equipment and the inspector has a definite basis on which instructions tending to better the service can be based. A meter of this type is also available as a check against station output, line losses, defective apparatus, etc.

The sixteenth annual report of the Boston Transit Commission for the year ended June 30, 1910, contains a large map in colors showing the routes of the Boston subway, the East Boston and Washington Street tunnels, the tunnel for the Cambridge connection and the proposed Riverbank subway. Acting Chief Engineer Edmund S. Davis presents an account of the construction work done to date on the tunnel under Beacon Hill for the Cambridge connection. He also refers to the preliminary studies made for the proposed Riverbank subway.

A PNEUMATIC ASH-HANDLING SYSTEM

A striking development in ash disposal has been worked out by the Green Engineering Company, Chicago, Ill., under the name of the "Geco" pneumatic ash-handling systems. In these systems a conveyor pipe is located adjacent to the pits where ashes from the furnaces are deposited. This pipe has intakes into which the ashes may be conveniently raked or shoveled. A continuous high-velocity air suction is maintained in the intakes for the ready feed of the ashes. The conveyor pipe is led to a separator and accumulating ash tank in which the high velocity of the air current which bears the ashes in suspension is suddenly reduced to almost no velocity by expansion, and the ashes are deposited in the tank at once. Further to facilitate such deposit, the ashes are subjected to a water spray just before entering the tank. The water serves to wet the ash particles, increasing their weight, as well as to attach the dust of suspension to the larger ash. An exhaust pipe which is placed at an angle radically opposed to the angle of entry of the ashes serves



Pneumatic Ash-Conveying System in Operation

to withdraw the air entering the tank. In fact, the exhaustor produces the air current through the entire system and its suction on the tank is sufficient to produce the high velocity in the conveyor pipe connected thereto.

Between the tank and the exhaustor there is placed a dust collector, through which the air, separated from ashes, must pass in a somewhat helicoidal path. This arrangement also provides for imminent contact of air currents with water surfaces still further to extract any particles of dust which may not have been deposited in the ash tank. The exhaustors are driven by the most convenient power available in the plant.

The systems are built in various sizes, rated by the amount of ashes to be conveyed per minute. Thus, for example, a 6-in. system has capacity of 150 lb. per minute; an 8-in. system, 300 lb., and a 10-in. system, 500 lb. The great conveying capacity of pneumatic ash-handling systems exceeds the ordinary ability of one man shoveling ashes under usual circumstances. It is therefore necessary to arrange the intakes convenient to the pits where the ashes accumulate to permit one man to feed the full capacity of the system.

Only one ash intake should be open at any one time, and only at that point can ashes be fed to the conveyor pipe. If two ash intakes were open at the same time the one farther re-

moved would be without air suction, as suction will naturally be spent at the opening nearest the separator tank.

The necessity of restricting the ash intakes to but one opening at any one time is really considered a decided advantage from the standpoint of labor required, as the relatively enormous carrying capacity of these systems makes it readily possible to handle as high as 9 to 15 tons of ashes per hour with one operator. There are few power plants in which the ash accumulation cannot be handled by one man in 10 working hours. It is customary to make the ash pits of such a size that one man can attend to the work of ash handling.

The weight of ashes to be handled will determine the relative volume of air to be exhausted, and the friction loss through the system will determine the amount of suction and corresponding power requirements. In some 6-in. systems 15 hp is sufficient, whereas the same size system may require 60 hp if the latter should employ an extremely long conveyor pipe, with several elbows or bends. Similarly, either of these systems of the same size conveyor pipe may require 15 hp to 40 hp more if intended to handle heavier ash. The corresponding figures for 8-in. systems may involve from 30 hp to 100 hp, and 10-in. systems from 50 hp to 150 hp.

The ash immediately travels toward the center of the pipe, where the greatest air velocity is maintained because there the retardation from the skin friction of the conveyor pipe is least. In other words, the ash does not touch the pipe after entering the air current and while continuing at maximum velocity. However, when the ash-laden air current reaches a bend in the conveyor pipe the heavier ash particles are projected forward to the outer surface or back of the bend. Owing to their high velocity the ashes at once attack this surface in the same manner as a sand blast. Suitable provisions, therefore, are made for the easy replacement of the surfaces so exposed at the bends. The life of wearing backs may vary from 10 days to two years, according to the velocity, nature and amount of ashes. The cost of replacing and maintaining these wearing pieces is insignificant in comparison with the possible savings over other methods of handling ashes. Inasmuch as the disturbance at elbows may, under some conditions, be continued by rebounds of ash from the wearing back to piping immediately beyond the fitting, it is customary to provide short replaceable lengths of pipe directly beyond the fittings.

The operation of these systems depends only on an engine or motor and its exhaustor as the entire moving machinery. These are both conveniently located and away from the ashes to be handled. They may be housed to protect them from the machinery-deteriorating conditions usually existing in boiler rooms or incident to the handling of ashes. The simplicity of the moving machinery, and particularly its remoteness from the point where ashes are accumulated, greatly reduces the maintenance cost, and always readily permits inspection under most favorable surroundings.

Conspicuously clean boiler rooms and surroundings are some of the attractive features contributed by the pneumatic system. Furthermore, the absence of moving machinery in boiler rooms and ash pits makes it most desirable when compared to ash-conveying devices of any other type. No possible danger can confront the operator while feeding ashes into the conveyor or in lubricating any moving parts. Since ashes are finally stored in sealed tanks, danger from fire is eliminated.

The conveyor pipe line can be arranged to avoid conflict with other apparatus and pass either around, above or below where no other system is possible. The ash storage tank may be located either inside or outside of the building, wherever most convenient to final discharge by gravity to either car or carts. A suitable valve for this purpose is attached to the cone-shaped bottom of the separator tanks. The final discharge from the exhaustor set is ordinarily conducted into the chimney or breeching serving the furnaces or directly into the atmosphere. The piping connections to the water spray are usually located convenient to the controller which is used to operate the motor, or to the engine throttle, as the starting of the entire apparatus involves only turning on power and opening the water spray.

ELECTRIC RAILWAY LEGAL DECISIONS

CHARTERS, ORDINANCES AND FRANCHISES

Georgia.—Right-of-Way—Right to Excavate.

Where a grantor in a deed conveys to the grantee a strip of land "for the purpose of right-of-way for a street railroad," and subsequently the same grantor conveys a lot of land to another party by deed in which the right-of-way of the railway company is called for as the southern boundary of the lot conveyed to such other party, the latter is not entitled to maintain an action for damages against the railway company for excavations made upon its right-of-way in broadening and lowering its bed for a railway track where there is no physical invasion of the property of such other party and no negligence upon the part of the company in constructing its roadbed affecting the property rights of the complainant. (*Darnell v. Georgia Ry. & Electric Co.*, 68 S. E. Rep., 584.)

Indiana.—Eminent Domain—Evidence—Admissibility.

Admissions of one joint owner of land sought to be condemned for an electric railroad right-of-way made in the absence of other owners are incompetent.

In proceedings to condemn land for an electric railroad right-of-way the damages must be determined by the fair cash market value of the land before and after the taking, and a witness testifying on the subject may not testify as to what he would pay for the land. (*Indianapolis & Cincinnati Traction Co. v. Wiles et al.* (No. 21,599), 91 N. E. Rep., 161.)

Iowa.—Breach of Contract—Failure to Carry to Destination—Damages.

Where a street railroad passenger left the car because it was not going, as usual, to the end of the line, and was compelled to walk some distance, his remedy, if any, was for breach of contract, and he could not recover in the absence of evidence of damage. (*Gustafson v. Cedar Rapids & M. C. Ry. Co.*, 126 N. W. Rep., 145.)

Kansas.—Injury to Abutting Property—Nature of Remedy.

If the public officers who are charged with the control of such matters authorize a subway for a car line in a public street an owner of abutting property the value of which is thereby diminished cannot interfere to prevent its construction, however seriously he may be inconvenienced by it. In such case his only remedy, if any, is by an action for the consequential damages. (*State ex rel. Dawson v. Parsons St. Ry. & Electrical Co. et al.*, 105 Pac. Rep., 704.)

Kentucky.—Corporations—Real Estate—Escheat.

The time within which a corporation must dispose of its real estate or allow it to escheat under Constitution, Section 192, begins to run on the corporation abandoning its purpose to use the property for its business. (*Commonwealth v. Kentucky Traction Co. of Louisville*, 131 S. W. Rep., 17-18.)

Kentucky.—Establishment and Maintenance—Franchises—Constitutional Provisions.

Where a street railroad company having a franchise to operate in a city was granted by the city, through its Council, the right to lay its tracks and operate its cars on a street not before used by it, in consideration of which it gave up the use of two other streets and conveyed to the city a piece of land abutting on the streets to which the tracks were moved for the purpose of widening it, this did not amount to the granting of a new franchise to the company which was required to be advertised and sold under the Constitution, Section 164, requiring cities to award franchises to the highest bidder. (*Woodall v. South Covington & C. St. Ry. Co.*, 124 S. W. Rep., 843.)

Louisiana.—Carriage of Passengers—Assignment of White and Colored Races to Separate Compartment—Insult of Passenger by Conductor—Right of Recovery.

The discretion vested in street railway companies and their officers and agents by Act No. 64 of 1902 with regard to the assignment of the white and colored races respectively to separate compartments in street cars is to be exercised by them at their own peril.

To apply the term "negro" to a white person is humiliating and insulting, and a suggestive question, such as "Don't you belong over there?" addressed to a white person by the conductor of a street car, who points to the seats reserved for negroes, is but little less so. In either case, and whether the language used be heard by others or not,

an action in damages will lie against the carrier. (*May v. Shreveport Traction Co.*, 53 So. Rep., 671-672.)

Massachusetts.—Street Railroads—Location—Abandonment.

A location for a street railway granted by the selectmen of a town was not abandoned by the president's unauthorized notification to the selectmen of an abandonment and request that the location be granted to another company, though it did not appear that all the conditions of the grant had been performed, abandonment being necessarily a corporate act. (*Clemons Electrical Mfg. Co. v. Walton*, 92 N. E. Rep., 459.)

New Jersey.—Establishment—Consent of Property Owners—Construction of Statute.

A consent of an abutting landowner required by the act of April 21, 1896 (P. L. p. 329), to confer jurisdiction upon the governing body of a municipality to grant permission for the construction of a street railway in the street contained a proviso "but without switch."

Held: (1) That the proviso "but without switch" in the consent is illicit and hence nugatory in two respects: First, because it is for the exclusive personal benefit of the consenting landowner, and second, because it is the substitution of another will for that of the representative of the public interests.

Held: (2) That the proviso did not nullify the consent.

Held: (3) That the consent, notwithstanding the proviso, was effectual for the purpose of conferring jurisdiction upon the legislative body of the municipality to grant permission for the construction of the railway.

Held: (4) That having thus acquired jurisdiction over the subject matter the legislative body could lawfully disregard the proviso "but without switch." (*St. Columba's Church of Newark v. Public Service Ry. Co.*, 78 At. Rep., 219.)

New Jersey.—Laying of Tracks—Location—Ordinance—Removal—Injunction—Gross Earnings Tax—Reduction.

When a trolley road has laid its tracks through the streets of a township in pursuance of an ordinance fixing location of its tracks, equity has jurisdiction to enjoin the removal of such tracks by the township.

Where a trolley road agreed to pay to a township annually 5 per cent of the gross receipts of the business of the road, it is not relieved from a portion of such payment because the distance it runs in the township has been shortened by the fact that other municipalities have been carved out of the township territory through which the trolley ran, nor can the sum be reduced by the fact that other sums have been exacted by these new municipalities for a right to lay an additional track through them.

This trolley road having formed a connection with another road, after which a single fare was charged for a passage over the entire system, the receipts from the business of the former road are to be regarded as such proportion of the entire receipts as the length of the former road bears to the length of the entire system of roads. (*Asbury Park & S. G. R. Co. et al. v. Neptune Tp. et al.*, 74 At. Rep., 998-9.)

New York.—Limitation of Actions—Injuries to Property—Actions—"Operation."

A cause of action against a railroad operating a road in front of premises accrues when every part of the road is adjusted according to its final construction and it begins to carry passengers, for until that time it is not in "operation," defined as active exercise of some specific function of office, or power exercised in producing an effect, though prior to that time construction and experimental trains had been operated. (*Rothman v. Interborough Rapid Transit Co.*, 121 N. Y. Sup., 200.)

New York.—Street Car Passengers—Single Fares—Right of Transfers—"Continuous" Route.

General Railroad Law, Section 104 (Laws 1890, Chapter 365, as amended by Laws 1892, Chapter 676), provides for a single fare in case of a continuous trip by any passenger between any two points on railroads or portions thereof and for a transfer entitling each passenger to a continuous trip to any point or portion of any railroad embraced in the contract with him, substantially as a single railroad with a single rate of fare, and for a penalty for non-compliance. Held, that where a temporary break occurred in the street car line during the construction of a subway under railroad tracks, requiring passengers to walk some 1200 ft. to

get a connecting car, their route over such line was not "continuous" within such section, and a passenger who could be carried by connecting lines in two ways, the one across the break being slightly shorter and more direct, was entitled to a "continuous" trip by car from his starting point to his destination, and the street railroad company could not insist that he take the shorter route, and any rule refusing the right to travel by means of transfers over the longer but continuous route and compelling him to take the shorter route to avoid a double fare was unreasonable under the existing conditions, though it would become reasonable when he was again given a continuous passage by the shorter route through the subway. (*Mannion v. International Ry. Co.*, 121 N. Y. Sup., 263.)

New York.—Passengers—Transportation Contract—Stop-over.

The holder of tickets issued by a street surface railroad company, good for one fare between two points, is only entitled to a continuous passage on each ticket and may not alight from one car on which he begins his journey and afterward board another car and complete the journey on the same ticket. (*Bonasera v. Buffalo & L. E. Traction Co.*, 118 N. Y. Sup., 748.)

Tennessee.—Foreign Corporations—Powers—Public Policy—Right to Purchase Stock in Other Corporations.

The statutes of the State or of the United States and the settled decisions of the highest court of the State are the sources from which public policy must be learned, along with the practice of the executive departments of the State government, and mere silence on a subject of the statutes or decisions as to the power of corporations may be sufficient to indicate that the matter is not against public policy, so that a foreign corporation may act in such matter where it is not against good morals.

In the absence of express power conferred by the charter of a corporation, or authorized by legislation, or by necessary implication, a corporation has no power to buy or subscribe for stock in another corporation.

Where a foreign corporation possessing the power to purchase the stock of other corporations purchased the majority of the stock of another corporation, the court, in the absence of legislation on the subject, could not hold that the purchase was illegal, except in so far as a monopoly might thereby be created in that line of business, or so far as there might be an unlawful restraint of trade or suppression of competition between rival corporations.

The act of a foreign corporation empowered by charter to purchase and hold the stock of other corporations in purchasing and holding a majority of the stock of street railway corporations operating street railways in widely separated cities without any physical connection or common interest does not create a consolidation of the corporations because of the absence of a union of corporate interests and stockholders, but the foreign corporation becomes merely a stockholder and the rights of the several corporations as such remain unchanged.

A corporation authorized to acquire stock of other corporations may acquire the permanent ownership of stock in another corporation, and may issue its own stock therefor, and may vote at all meetings of stockholders and exercise the privileges of a natural person, but its control must not defraud the rights of minority stockholders nor prevent the corporation whose stock is purchased from performing its public duties imposed by its charter. (*Clark et al. v. Memphis St. Ry. Co.*, 130 S. W. Rep., 751-752.)

LIABILITY FOR NEGLIGENCE

Alabama.—Injuries to Animals—Animals Near Track—Care Required.

It is not necessary to stop or check an electric car when an animal is seen near the track, unless the circumstances indicate that the animal is likely to move onto the track, (*Mobile Light & Railroad Co. v. Mackay*, 50 S. Rep., 1035.)

Alabama.—Carriage of Passengers—Personal Injuries—Actions—Pleading.

A plea of contributory negligence of a passenger injured in alighting from an electric car which alleges that she was guilty of negligence proximately contributing to her injuries in that she rode on the platform in violation of a rule published in the car in such a way that she could have seen it is insufficient as failing to show notice of the rule

and causal connection between its violation and the injury

A passenger incumbered with small bundles who steps from an electric car in the dark while it is slowing up to stop and is barely moving is not guilty of contributory negligence as a matter of law.

A charge that a passenger riding on the platform of an electric car without supporting herself with either hand is guilty of contributory negligence is properly refused.

There being evidence that a street car passenger was injured while alighting by a sudden increase in the speed of the car, it was proper to refuse to charge that it was not the conductor's duty to know of the passenger's position of peril at the time the speed of the car was increased. (*Birmingham Ry., Light & Power Co. v. Girod*, 51 So. Rep., 242.)

California.—Injury to Passenger—Starting Car—Signal by Another Passenger—Duty of Conductor.

There was no negligence of a street car company in the starting of a car throwing a passenger who was alighting, the starting signal, two bells, having been given without authority by another passenger, neither the motorman nor conductor having any reason to believe it would be so given, the motorman believing it was given by the conductor, the conductor instantly on hearing the signal calling to the motorman not to start and the motorman then endeavoring to prevent the starting; the company, through its motorman and conductor, not being required to anticipate and take precautions against such an unauthorized signal.

The collection of fares being part of the duty of the conductor of a street car, though it is equally his duty to look after the safety of his passengers, it is not error to instruct that he was in the performance of his duty while collecting fares; it appearing that he was collecting fares when the car stopped, that before giving his starting signal he would have gone to the platform to see whether all passengers so desiring had alighted, and that before he had done so a starting signal was given by a passenger, resulting in injury to another passenger who was alighting. (*Cary et al. v. Los Angeles Ry. Co.*, 108 Pac. Rep., 682.)

Colorado.—Negligence—Contributory Negligence—Last Clear Chance—Right-of-Way Over Tracks—Speed of Car.

A plaintiff may recover for personal injuries notwithstanding that his own negligence exposed him to injury if defendant after becoming aware of his peril, or after he could have become cognizant of it by the exercise of proper watchfulness and precaution, failed in that respect and such failure was the proximate cause of the injury.

By reason of its character as a means of conveyance, a street car has a preferential right over the space occupied by its tracks, but such right must be exercised with due regard to the rights of others.

Where, in an action against a street railroad company for causing the death of a bicyclist, it appeared that decedent was run into from behind by a car, that the motorman had full knowledge that hundreds of wheelmen daily rode along the space between double tracks, that they generally "lay over" to the other side to permit approaching cars to pass, and it further appeared that a car was approaching decedent at a distance of 200 ft. or 300 ft. away, that decedent had given no intimation that he was aware of such approach and was "lying over" to let such approaching car pass, it was negligence for the motorman to fail to slacken the speed of the car or, if need be, to stop the car until he knew that decedent was aware of his danger and would have ample time to protect himself therefrom, and the sounding of the gong or the ringing of a bell was not sufficient under the circumstances.

While perhaps a motorman may rightfully assume that a pedestrian will turn out of the way of the car, he cannot rest on such presumption so long as to reach a point where it will be impossible for him to control his car or give warning in time to avert injury. (*Denver City Tramway Co. v. Wright*, 107 Pac. Rep., 1074.)

Connecticut.—Master and Servant—Injury to Servant—Assumption of Risk—Evidence.

In an action for injuries to an electric railway lineman while at work on a trolley wire, evidence held to justify a finding that he did not assume the risk of a defect in the construction of the trolley wire. (*Arnold v. Connecticut Co.*, 75 At. Rep., 78.)

Connecticut.—Collisions—Contributory Negligence.

A driver of a wagon drove across street car tracks when he saw a car approaching about 100 ft. away. He watched the car until he saw it was getting too close for safety and then he whipped up his horse, but the car struck the rear wheel. When he turned to cross the track he relied on the motorman slowing up. The car was not running fast. Held, that the driver was guilty of contributory negligence as a matter of law. (*McKeon v. Connecticut Co.*, 75 At. Rep. 139.)

Connecticut.—Carriage of Passengers—Personal Injuries—Setting Down Passengers—Contributory Negligence.

Stopping a street car is an implied invitation to passengers to alight and an implied assurance that the place is safe unless notice is given to the contrary.

A street car passenger who had alighted safely passed around the rear of the car, brushed against the fender and fell. Neither she nor the carrier knew the fender was down, but the car was so lighted as to make the fender visible if she had looked. Held, that the direction of a verdict for the carrier was proper, plaintiff at the time of injury being merely a traveler on the highway as to whom defendant owed only ordinary care, of which no want was shown, and plaintiff being guilty of contributory negligence in failing to look before passing so close to the car. (*Powers v. Connecticut Co.*, 74 At. Rep., 931.)

Delaware.—Injuries to Passengers—Negligence.

In an action by a passenger for injuries received while alighting from the car caused by the sudden starting of the car, the plaintiff must show by a preponderance of the evidence that the negligence which caused the injuries was the fault of defendant and was the negligence described in plaintiff's declaration, and such negligence is not to be presumed, but the burden of proving it is on plaintiff. (*Benson v. Wilmington City Ry. Co.*, 75 Atlan. Rep., 793.)

Delaware.—Trolley Wires—Maintenance—Injuries to Travelers.

A street railroad company is not liable for the sagging of its trolley wire in a street from the effect of an unusual storm of wind and rain unless it fails to repair the injury within a reasonable time.

Where, notwithstanding a warning to plaintiff that defendant's trolley wire had sagged as the result of a violent storm, his wagon came in contact with the wire and he was injured, the warning imposed on him the duty to exercise reasonably all his faculties to prevent an accident, and if he failed to do so he was chargeable with contributory negligence. (*Wagner v. People's Ry. Co.*, 75 At. Rep., 610.)

Illinois.—Master and Servant—Fellow Servants—Who Are—Question of Law and Fact.

Whether servants of a common master are fellow servants is a mixed question of law and fact, as the definition of "fellow servants" is a question of law, while the question of the relation of fellow servants is one of fact, unless the undisputed evidence with legitimate inferences is such that all reasonable men must reach the same conclusion, in which case it is a question of law.

To create the relation of fellow servants, the servants must be directly co-operating with each other in the same work, or their duties must be such as to bring them into habitual association so as to afford them the power and opportunity of exercising a mutual influence on each other promotive of proper caution.

A conductor on a cable car operated on a street and a motorman on an electric car operated by the same company on a street crossing the first at right angles are not as a matter of law fellow servants, where the employees on the two lines are under the control of different superintendents in charge of different car houses, and the lines are not operated on a schedule requiring the meeting of the cars at the crossing, though rules of the company require, when cars on the lines meet at the crossing, that cable cars shall have the right-of-way, and though on a signal from the gripman the motorman may cross first. (*Bennett v. Chicago City Ry. Co.*, 90 N. E. Rep., 735.)

Indiana.—Statutory Limitation—Personal Injuries—Injuries to Wife—Excessive Damages.

The limitation in Burns' Ann. St. 1908, Sec. 285, limiting the damages for death by wrongful act, is not applicable to

an action for damages brought by the person wrongfully injured; but where an action is brought by a husband for negligent injury to his wife it cannot be ignored, but must be considered as a declaration of public policy fixing the maximum damages.

A husband 55 years old, with a life expectancy of 18 years, sued for negligent injuries to his wife, 42 years old. Prior to the injury the wife had performed her household duties and had rendered some assistance to the husband in connection with the manufacture and sale of cigars. Her services were worth \$8 to \$10 per week to the husband. She had not been able to perform her usual duties since the accident, and some of the injuries were of a permanent character. The husband incurred an indebtedness of \$620 for medical services. Held, that a verdict for \$10,000 was excessive. (*Indianapolis Traction & Terminal Co. v. Menze* (No. 21,360), 88 N. E. Rep., 929.)

Iowa.—Street Railroads—Operation of Cars—Duty of Motorman—Collisions—Evidence—Instructions.

The duty of a motorman on a street car to keep a lookout for persons within or approaching the zone of danger is different from that of an engineer in charge of an engine operated on a railroad right-of-way where there is no reason to anticipate the approach of persons.

Where, in an action for injuries to a person struck by a street car, the evidence showed that the motorman saw plaintiff working near the track in such a position that he was not likely to observe the approach of the car and apparently not giving attention to such approach, in time to stop the car before the accident, and that it was apparent to the motorman that plaintiff believed that the car was running on the other track according to custom, the court properly submitted the case on the theory that if the motorman saw, or, in the exercise of reasonable care, might have seen, that plaintiff was in a position of danger from the car or was putting himself in a position of danger without noticing the approach of the car, and if he failed to exercise reasonable care to stop the car before the accident, the street railroad was liable, notwithstanding plaintiff's negligence in putting himself in a position of danger. (*Welsh v. Tri-City Ry. Co.*, 126 N. W. Rep., 1118.)

Massachusetts.—Duty to Boarding Passengers.

Even if a street car conductor was not bound to wait until a passenger was seated before giving a signal to start, the motorman was bound to use ordinary care in so starting the car as to avoid injury to the passenger. (*Nolan v. Newton St. Ry. Co.*, 92 N. E. Rep., 505.)

Massachusetts.—Carriage of Passengers—Who Are Passengers.

Where a passenger, in taking a train, knowingly disregards the provisions made for his convenience and safety, and instead of using the platform, chooses a course with which he is not familiar, and which he knows was not intended for his use, he becomes a trespasser, or at most a mere licensee, and the carrier's duty is only to refrain from wanton or reckless conduct that would put the passenger in peril. (*Boden v. Boston Elevated Ry. Co.*, 91 N. E. Rep., 879.)

Massachusetts.—Negligence of Person Intending to Board Car.

Plaintiff attempted to cross a street to board a southbound street car at a place where cars usually stopped. When he reached the northbound track and the car was within 150 ft., he waved his hand to the motorman, who shut off the power and checked the speed. Believing that the car would be stopped as usual, and after again looking, plaintiff walked quickly onto the southbound track, and when about half way over, observing that the car was coming very rapidly, he increased his speed, but could not clear the track, and was struck. Held, that he was not negligent as a matter of law. (*Hunt v. Old Colony St. Ry. Co.*, 91 N. E. Rep., 884.)

Michigan.—Collisions with Animals or Vehicles—Liability.

While plaintiff was driving along a street by the side of defendant's track, and at a sufficient distance from the track to enable a car to pass, a car came up behind him and frightened his horse, which jumped to one side in front of the car and was injured. Held, that defendant was not liable for the injury. (*Bottje v. Grand Rapids, G. H. & M. Ry. Co.*, 122 N. W. Rep., 87.)

News of Electric Railways

Answer Filed to Rental Suit in Detroit

Corporation Counsel Hally, of Detroit, Mich., has filed an answer in the Wayne County Circuit Court to the Detroit United Railway's cross bill in the suit to compel the company to pay \$200 a day additional rental for the occupation of West Fort Street by its tracks, where it is claimed by the city that the franchises have expired. Mr. Hally denies that the earnings do not warrant the tax. In this connection, he states that the earnings are immaterial, as the franchises have expired and the city has control of the streets and the right to charge whatever rental it pleases for their use. Continuing, he urges that the company is not obligated to carry passengers on the streets where its rights have expired and denies that any duty rests upon it to carry passengers.

A meeting of the committee on franchises of the City Council was held on Feb. 15, 1911, to discuss the proposed traffic agreement between the Detroit United Railway and the Michigan United Railway by which the former was to bring the cars of the latter to a terminal in the business portion of the city. Mr. Hally had been asked to give his opinion on the legal phase of the matter, but he was not ready to do this and did not attend the meeting.

At a special meeting of the Michigan League of Municipalities, held at Detroit on Feb. 16, 1911, and attended by 55 officials of 30 of the largest towns in the State, a resolution was adopted which was prepared by Mayor Thompson, of Detroit, asking for amendments in the home rule law by the Legislature to allow cities to amend their charters without making a general revision, as is now required.

Another Subway Proposal in New York

Another proposition for the construction, equipment and operation of a municipally controlled rapid transit subway system in New York has been submitted to the Public Service Commission by Joseph Caccavajo and Marshall W. Brown, engineers. The new proposal covers each of the five boroughs embraced in Greater New York. The proposal includes the triborough route with certain modifications, the Fourth Avenue subway route with its extensions in Brooklyn, the Richmond Borough route under the Narrows from Brooklyn to Staten Island, the Lafayette Avenue route with extension to Jamaica, the new loop and tunnel to Fourteenth Street, Manhattan, through Bushwick Avenue and North Seventh Street; Utica Avenue and other extensions in Brooklyn and extensions over the Queensboro Bridge to Flushing, and the east and west Bronx extension to Lexington Avenue line. In addition, certain routes in Manhattan are provided in the new proposition. These include the Second Avenue line, which the city may take at its option, making a part of the general plan. The company agrees to obtain money as needed for the construction and equipment of the various routes by selling preferred stock at a price which will net its par value to the treasurer of the company, which stock shall obligate the company to pay 5 per cent cumulative dividends for the four years of construction and equipment and the first year of operation, and thereafter 10 per cent cumulative dividend.

Reasons for Segregation of County Traction Lines

The reasons underlying the physical and operating severance of the suburban lines of the County Traction Company from those of the Chicago Railways were recently made public by George B. Blanchard, president of the County Traction Company, in a letter addressed to the residents of seven suburbs which formerly had a 5-cent fare to Chicago. Mr. Blanchard's letter follows, in part:

"Records in the United States Circuit Court show that the lines in your territory did not earn enough to pay operating expenses. Foreclosure was therefore inevitable, and the fact that a 5-cent fare to the loop is impossible does not require further demonstration. It is quite possible that

a 5-cent fare would be practicable in a zone which would include your municipalities and that part of Chicago lying west of Forty-eighth Avenue provided the City of Chicago were convinced that by reason of increased business and the growth of the territory this would not seriously diminish the amount payable to the city under the Chicago Railways ordinance. It goes without saying that prolonged and expensive litigation is unsatisfactory and is not a substitute for street car service or street car earnings. The County Traction Company stands ready to do anything which it consistently can toward providing adequate and up-to-date service for your communities, and this statement is submitted with a view to clarifying the situation.

"In settling with the city the Chicago Railways is obligated to account for full fares for all persons transported. Before dividing the net receipts with the city the Chicago Railways is entitled to receive annually 5 per cent upon the value of its property. The city's share last year was \$800,000, and if the lines of the County Traction Company were in the city limits the Chicago Railways could afford to purchase the same, because any loss in operation would be shared by the city."

Power Contract in Baltimore.—A new 15-year contract for supplying 12,000 hp to the United Railways & Electric Company, Baltimore, Md., has been entered into by the Pennsylvania Water & Power Company. The contract made by the McCall Ferry Power Company with the United Railways & Electric Company in June, 1907, has been canceled on account of the inability of the McCall Ferry Power Company to complete its plant. The present plants of the United Railways & Electric Company in Baltimore will in the future be held for reserve service.

Geleerd Municipal Ownership Measure.—The City Council of Toledo, Ohio, on the evening of Feb. 13, 1911, adopted a resolution indorsing the Geleerd municipal ownership bill and provided for a committee to go to Columbus and urge its passage when the committee to which it was referred arranges for a hearing. The bill was prepared by Cornell Schreiber, city solicitor, under the direction of Mayor Whitlock and Representative Geleerd, and is a part of the machinery to be used in arriving at a settlement of the franchise question with the Toledo Railways & Light Company.

Meeting of Central Electric Accounting Conference.—The next meeting of the Central Electric Accounting Conference will be held on March 11, 1911. Both Springfield, Ohio, and Youngstown, Ohio, have been suggested as the place in which to hold the meeting, and the question has been left over to a vote by mail by the members. Important committee reports will be presented as follows: "Uniform Comparative Statistics" and "Amendments to the Constitution and By-Laws." The committee on membership will also report. The details of the program have not yet been arranged.

Franchise Matters in Des Moines.—The committee of 25 and members of the City Council of Des Moines, Ia., have unofficially rejected the Des Moines City Railway's proposed franchise, and have asked the company to submit a plan whereby the city may purchase and operate the plant. In accordance with this suggestion the company has submitted to the city a proposition to sell \$1,305,000 in stock to the city at 90 cents on the dollar. The city is to pay for this in bonds at 4 per cent. The company will then finance the rehabilitation of the plant in exchange for bonds. In order to further the negotiations, every effort will be made to secure the passage by the Legislature, which is now in session, of the necessary enabling act.

Inquiry into New York Commission.—Governor Dix, of New York, has announced that he has selected John N. Carlisle, Watertown, N. Y., to conduct an inquiry into the working of the Public Service Commission of the First District of New York. Mr. Carlisle is the retiring member of the Public Service Commission of the Second District of New York. He is a Democrat and a lawyer, and was

appointed to the commission a year ago to succeed Thomas M. Osborne, who resigned. Mr. Carlisle will remain in the commission until March, and after a short rest will take up his duties as investigator, under the Governor's commission. He will be succeeded in the Public Service Commission by Winfield A. Huppuch, the Governor's business partner and chairman of the Democratic State Committee. Mr. Huppuch will resign as chairman of the State Committee.

Municipal Ownership Resolution in Providence.—A resolution directing the City Solicitor to apply to the General Assembly at the present session for legislation to enable the City of Providence to acquire the appurtenances of the street railway, electric and gas lighting systems of the city was introduced in the Board of Aldermen on Feb. 6, 1911. The resolution asks authority for the city to obtain by purchase or by right of eminent domain all tracks, rails, poles, wires and all other structures and equipment erected or located in, upon or over the streets of the city. Also for obtaining possession of all tunnels, conduits, pipes, poles or other structures connected with the city's lighting system, either by gas or electricity. The resolution was referred to the special committee on lighting franchises, it being the object of its sponsor to have the matter considered at a joint meeting to be held with the committee on railroads.

Platform of Mayoralty Candidate in Chicago.—John R. Thompson, who is seeking the nomination for Mayor of Chicago on the Republican ticket, has announced his views in regard to public service corporation matters as follows: "The traction, lighting, telephone and all other public utilities to be strictly regulated and controlled by the city, and the cost of the service to be fixed at the lowest price consistent with efficiency and a reasonable return on actual capital invested. The transportation system, surface and elevated, to be put on a basis which will furnish adequate service at all times. This to include universal transfers and increased trunk and cross-line service in all parts of the city; the restoration of one fare to and from the adjacent suburbs; the construction and ownership by the city of a model and adequate subway; the strict enforcement for the benefit of the city and its people of all the traction ordinances in letter and in spirit."

LEGISLATION AFFECTING ELECTRIC RAILWAYS

Illinois.—Prof. David Kinley, of the University of Illinois, has completed the work of drafting the administration public utilities bill. Among the salient features of the bill are: The Railroad & Warehouse Commission is given jurisdiction over public utilities; regulation and supervision are provided; a bureau of standards is established and an appropriation is made to carry out provisions of the act; every utility shall file its schedules with the commission, and all rules and regulations affecting rates; no company shall charge or collect more than is specified in the schedules. No permit shall be granted to a second utility in the same municipality until it is ascertained by the commission that the public convenience and interest demand such second public utility.

Indiana.—A bill has been introduced to authorize the fixing of prices to be charged for electricity where such prices are not fixed by ordinance. This measure is believed to be directed against interurban railways which furnish current. A bill to prohibit trespassing on railroad property is urged by the Railroad Commission. Senate bill No. 381 would give the Railroad Commission power to act in the separation of grade crossings of steam railroads and interurban railways. A bill has passed the Senate which provides that foreign corporations operating in Indiana shall have no powers beyond those extended to like corporations organized under the Indiana law, and that they shall exercise no powers in Indiana which they cannot exercise under the laws of the State under which they were organized. An effort is being made to amend the block signal bill so as to limit the power of the commission to order roads to install block systems. A franchise bill introduced by Senator Grube provides for a referendum vote on franchises sought by railways from cities and towns. This bill failed to pass for want of a constitutional majority, but it was revived. The Legislature has adopted the omnibus plan of disposing of bills. Nine railway bills, the majority of which concern electric

railways, have been passed in a group by the Senate. These bills have likewise been reported favorably in the House. Three of the bills are known as the Indiana Railroad Commission bills. The first gives the commission additional authority over both steam and electric railways and provides for immediate report by telegraph of accidents which occasion the loss of life. The second bill greatly increases the commission's authority over witnesses, compelling them to answer all questions under penalty of punishment for contempt and to produce any book, record or report in their charge which the commissioners believe calculated to shed light on the cause of any accident or rate problem. The third prescribes a clearance of 21 ft. for wires and obstructions crossing railroad tracks and prescribes the method of fastening such obstructions. Other bills have been passed regulating the maintenance of telephone and telegraph wires across rights-of-way of steam and interurban railways and prescribing the method of their construction. A bill authorizing railroads to take stock in interurban railways was passed without objection, it being explained that the measure would enable steam railroads and interurban railways to build and maintain joint terminal stations at terminal points. A bill has also been passed requiring steam railroads and interurban railways to maintain crossing signs. The Wider House bill, designed originally to require one year's experience for all persons before being employed as motormen on interurban trains, after being amended so as to provide for such experience as the railroad commission may direct, has been engrossed and recommended for passage. If the commission does not ratify the employment, the man must not be permitted to act as a motorman. The following new bills have been introduced: A Senate bill requiring interurban railways to maintain waiting rooms in cities of 5000 or more population and a House bill to prohibit commissioners from giving railroads the right to use any portion of the public highways.

New Jersey.—A hearing was given by the Senate committee on railroads, canals and turnpikes on Feb. 15 on the question of amending the public utility law so as to confer rate-making powers on the commission and otherwise to change the law. Thomas N. McCarter, president of the Public Service Railway, was the principal speaker in behalf of the electric railways. He had carefully considered all the measures that had been proposed and had concluded that the best plan would be to let the present law stand and include in it a rate-making clause. He laid before the committee an amendment to empower the commission "upon complaint in writing filed with the said board, by the governing body of any municipality the people of which are affected by any rate, fare or charges imposed by any public utility, as herein defined, for service wholly within this State, or upon formal application of any such public utility, to direct any such public utility to make such change or changes in said rate, fare or charges as may be just and reasonable, and in determining what is just and reasonable said board shall consider the fair value of the property devoted to the public use, physical and otherwise, and all the financial, physical and economic circumstances of the business." Four public utility bills have been introduced in the Senate. Senate 5, presented by Senator Gaunt, is the old Robbins rate-making bill of former years. Senate 19 is a renewal by Senator Gebhardt of his last year's bill establishing a public utility commission with authority to make regulations and to procure their enforcement. Senate 14, also by Mr. Gebhardt, is a rate-making bill. The main bill before the Senate is the one drafted by Mr. Osborne, with the assistance of Frank H. Sommers, president of the State Utilities Board. It creates a new board of public utilities and gives it power on its own initiative to investigate and to fix rates. This bill has a companion, Senate 62, which repeals the present law. In the House there are two public utility bills, 20, by Mr. Streitwolf, and 167, by Mr. Egan. The latter is the administration bill.

Massachusetts.—A bill has been introduced in the Senate which provides for the construction of a tunnel under Boston Harbor to bring the Boston, Revere Beach & Lynn Railroad into the heart of Boston and connecting the systems of the Boston & Maine Railroad and the New York, New Haven & Hartford Railroad. The bill authorizes either of the above railroads to undertake the work, sub-

ject to the approval of the Massachusetts Railroad and Boston Transit Commissions as to route and details. With the consent of the double commission and of the Boston Elevated Railway, the tunnel may be connected with the East Boston tunnel or any other tunnel or subways hereafter constructed; and with like consent and approval the Boston, Revere Beach & Lynn Railroad may be connected with the East Boston tunnel and its trains run in it upon such terms as may be agreed upon by the railroads and the double commission. A very important section of the bill provides that within a time to be fixed the New York, New Haven & Hartford Railroad shall equip and operate two of its tracks between the South Station and Readville with electric motive power; the Boston, Revere Beach & Lynn Railroad is also to be electrified, and two tracks of the Boston & Maine Railroad between Lynn and the junction of the Gloucester branch with the main line in Beverly are also to be provided with electric motive power. The bill is understood to voice the plans of the New York, New Haven & Hartford interests in the direction of providing improved connection between the north and south sides of Boston, and in meeting the proposed competition of the Boston & Eastern Electric Railroad, which for several years has been trying to secure a certificate of exigency to build a high-speed interurban electric railway between Boston, Lynn and Salem. A bill has been introduced to provide for an investigation by the Boston Transit Commission of the matter of removing the elevated railway structure between the North Station and Sullivan Square. Another bill provides that the Railroad Commission and the Boston Transit Commission shall report a bill to enlarge the Park Street subway station in Boston along the lines advised in the recent report of the joint commission known as the "Big Four" to the Legislature on metropolitan improvements. A bill has been introduced into the House which provides that by July, 1914, all railroads having terminals in Boston shall operate their service within 10 miles of such terminals by electricity. A bill has been introduced by interests allied with the Boston & Eastern Electric Railroad for legislation to insure the issuing by the Railroad Commission of a certificate of exigency to the above company.

Ohio.—Senator Deaton has introduced a bill to extend the power of the State Railroad Commission materially. It would require schedules of rates to be posted at all railroad and interurban stations, with notice of 30 days instead of 10 days. In case of change of rates the commission could also suspend rates upon its own initiative. All freight and packages would have to be checked. A bill by Representative Kennedy would place city and interurban railways in the same class as steam railroad lines in reference to the grade-crossing law. The steam railroads object to the plan of Representative Winters, in his public utilities bill, to place the duties of the enlarged commission with the State Railroad Commission. They do not want the commission loaded down with other duties. The House committee on elections has recommended for passage the Crosser bill, which provides for the initiative and referendum. Councils may provide for a referendum upon any ordinance creating a right, granting a franchise, expending money or any other delegated power. The people may demand a referendum upon a petition signed by 8 per cent of the electors. Ordinances granting public utility franchises shall not be operative for 60 days after their passage. The Geleerd bill, which would authorize cities to own and operate street railways, has been referred to the House committee on cities, of which Representative Geleerd is a member. It is said that six of the 13 members of the committee are pledged to the bill. The Ohio State Liability Commission filed both a majority and minority report with the Legislature on Feb. 9, and each was accompanied by a bill for the consideration of that body. The bill based on the majority report would provide a State board of compensation awards to consist of five members to be appointed by the Governor, with the approval of the Senate, not more than three of them to be of the same political party. Compensation from a State fund, to be furnished by the employers of labor, would, under this bill, be graded according to the nature of the injury received and the employee would be paid such an amount as was considered justly due him. The bill advanced by the minority would provide a State liabil-

ity board of awards to consist of three members to be appointed by the Governor and approved by the Senate. Their salaries would be \$5,000 per year each, and their duties the same as those defined in the majority bill. The minority bill, however, requires a more definite classification of risks than the other for determining the premium that shall be paid by those who decide to contribute to the fund. The Winters public utility bill was introduced in the House on Feb. 15. This measure was drafted mainly to cover those corporations which have not previously been subject to State supervision. The State Railroad Commission is to be succeeded by "the Public Service Commission of Ohio," with enlarged powers extended to include interurban railways. Street railways are to be exempt from the provisions of the Winters bill because they operate under contracts with local municipalities. One of the provisions regarding railroads is that they shall so connect their tracks, where they are in proximity, as to allow of the prompt transfer of freight to connecting lines. Another provision stipulates that all utilities shall establish a depreciation fund which shall be used only for repairs and improvements, the commission to have authority to order such improvements as it deems just for the convenience of the public. Utility companies may merge, with the consent of the commission, but the capital stock of the consolidated company is not to exceed the combined capital stock of the companies consolidated with such additional sum as was paid in cash. The commission is to supervise all issues of securities. In case a municipality fixes a rate for service on the approach of the expiration of a franchise to hold during the interval before another grant is made the commission may intervene in case of unfairness and fix the rate at such figure as it finds to be just. All contracts with other companies relating to the construction, maintenance or use of their properties and to service are to be filed with the commission; also all schedules of passenger and freight rates. A system of accounts may be established, and annual reports, containing such information as is thought proper, are to be filed with the commission. No company shall be interested in rebates, or other considerations which prefer one patron to another or one locality to another. The bill has also been introduced in the Senate. The Calvey bill, providing that street cars must be provided with closed vestibules at both ends, has passed the House.

Oklahoma.—The House has killed the bill to provide toilets on interurban electric railway cars by postponing action on the measure indefinitely.

Rhode Island.—Senator Sanborn has introduced a bill to amend the charter of the Newport & Providence Street Railroad. This amendment allows the company to lay rails in Warren and Bristol, to connect with the tracks of the suburban company as well as in certain parts of Newport County. The bill has been referred to the committee on corporations. A bill has been introduced in the House to amend the section of the public laws which relates to employers' liability. An act introduced in the House to provide special rates for school children on all railroads has been tabled.

Tennessee.—A bill has been introduced to prohibit the installation of prepayment cars on street railways in Tennessee.

Texas.—The purchase of the Denison & Sherman Interurban Railway's line between Dallas and Sherman, 63 miles, by the Northern Texas Traction Company, and its consolidation with the latter company's line that runs between Ft. Worth and Dallas, is provided for in a bill introduced in the Legislature by J. C. McNealuss, Dallas. Senator McDonald Meachum, Vavasota, has introduced a bill to require all street and interurban railways to provide separate cars for whites and negroes. Under the present law the two races are required to occupy separate parts of street cars. The committee of the Senate on internal improvements has reported unfavorably Senator Collins' street car vestibule bill to forbid the operation of cars not fitted with vestibules, to require the operation of closed cars between Nov. 1 and March 15 and to make it obligatory for street railway companies to supplant open cars with cars without running boards and with center aisles. The bill had been advanced as a substitute for a House measure.

Financial and Corporate

New York Stock and Money Market

Feb. 20, 1911.

After a quiet opening this morning the stock market grew strong in the afternoon when it became apparent that the trust decisions would not be handed down by the Supreme Court. There is no doubt that the stock market is waiting for these decisions and that no decided movement in either direction is likely to occur until the decisions have been rendered.

The money market continues easy and the demand for strictly first class investment bonds is very satisfactory. Rates for money to-day were: Call, 2@2 $\frac{3}{8}$ per cent; 90 days, 3 $\frac{1}{4}$ @3 $\frac{1}{2}$ per cent.

Other Markets

In the Philadelphia market during the past week the traction issues have not been particularly active. There has been little demand and there has been no selling pressure. Prices have been inclined to sag and fractional losses have been recorded.

In Chicago traction shares have been almost entirely out of trading. A few lots of Metropolitan Elevated and of Kansas City Railway & Light have about covered the transactions. Prices have receded slightly.

Small lots of Boston Elevated and Massachusetts Electric were dealt in on the Boston Exchange during the past week, but there was little color to the trading. Prices remained practically unchanged.

There continued to be some buying of United Railways shares at around 17 $\frac{1}{2}$ in the Baltimore market last week, but the demand was not insistent. The bonds of the same company were also traded in with the usual freedom.

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

	Feb. 14.	Feb. 21.
American Light & Traction Company (common).....	a290	a290
American Light & Traction Company (preferred).....	a106	a106
American Railway Company.....	44 $\frac{3}{4}$	44 $\frac{3}{4}$
Aurora, Elgin & Chicago Railroad (common).....	44 $\frac{1}{2}$	44 $\frac{1}{2}$
Aurora, Elgin & Chicago Railroad (preferred).....	85	85
Boston Elevated Railway.....	a129	a129
Boston Suburban Electric Companies (common).....	a16	a16
Boston Suburban Electric Companies (preferred).....	a71 $\frac{1}{2}$	a71 $\frac{1}{2}$
Boston & Worcester Electric Companies (common).....	a9	9
Boston & Worcester Electric Companies (preferred).....	40 $\frac{1}{2}$	40
Brooklyn Rapid Transit.....	78 $\frac{3}{4}$	78 $\frac{3}{4}$
Brooklyn Rapid Transit Company, 1st ref. conv. 4s.....	84	83 $\frac{3}{4}$
Capital Traction Company, Washington.....	129 $\frac{1}{4}$	129
Chicago City Railway.....	*200	a190
Chicago & Oak Park Elevated Railroad (common).....	*3 $\frac{1}{4}$	*3 $\frac{1}{4}$
Chicago & Oak Park Elevated Railroad (preferred).....	*7 $\frac{1}{4}$	*7 $\frac{1}{4}$
Chicago Railways, ptcptg., ctf. 1.....	93	a93
Chicago Railways, ptcptg., ctf. 2.....	25 $\frac{1}{4}$	a25
Chicago Railways, ptcptg., ctf. 3.....	9 $\frac{1}{2}$	a10
Chicago Railways, ptcptg., ctf. 4.....	6 $\frac{1}{4}$	a6
Cleveland Railway.....	*91 $\frac{1}{2}$	91 $\frac{1}{2}$
Consolidated Traction of New Jersey.....	a76	a76
Consolidated Traction of N. J., 5 per cent bonds.....	a105	a105
Detroit United Railway.....	72	74
General Electric Company.....	a155 $\frac{1}{4}$	a154 $\frac{1}{2}$
Georgia Railway & Electric Company (common).....	a126	a125 $\frac{1}{2}$
Georgia Railway & Electric Company (preferred).....	a88	a87 $\frac{1}{2}$
Interborough Metropolitan Company (common).....	20 $\frac{1}{4}$	19
Interborough Metropolitan Company (preferred).....	a54 $\frac{1}{4}$	54
Interborough Metropolitan Company (4 $\frac{1}{8}$ s).....	79	78 $\frac{3}{4}$
Kansas City Railway & Light Company (common).....	21	a22
Kansas City Railway & Light Company (preferred).....	71	71
Manhattan Railway.....	*139 $\frac{3}{4}$	139 $\frac{3}{4}$
Massachusetts Electric Company (common).....	a18	17
Massachusetts Electric Companies (preferred).....	a88	a88
Metropolitan West Side, Chicago (common).....	a20 $\frac{3}{4}$	a21
Metropolitan West Side, Chicago (preferred).....	67	a67
Metropolitan Street Railway, New York.....	*19 $\frac{1}{2}$	15
Milwaukee Electric Railway & Light (preferred).....	*110	110
North American Company.....	72	71 $\frac{3}{4}$
Northwestern Elevated Railroad (common).....	a22	a22
Northwestern Elevated Railroad (preferred).....	a62	a62
Philadelphia Company, Pittsburgh (common).....	52 $\frac{3}{4}$	53 $\frac{1}{2}$
Philadelphia Company, Pittsburgh (preferred).....	42 $\frac{3}{4}$	43 $\frac{1}{2}$
Philadelphia Rapid Transit Company.....	a107 $\frac{1}{2}$	a20
Philadelphia Traction Company.....	a85	85
Public Service Corporation, 5 per cent col. notes.....	a96 $\frac{1}{2}$	a96 $\frac{1}{2}$
Public Service Corporation, ctf. 5.....	105 $\frac{1}{2}$	106
Seattle Electric Company (common).....	a111 $\frac{1}{2}$	a109 $\frac{1}{2}$
Seattle Electric Company (preferred).....	a100	101
South Side Elevated Railroad (Chicago).....	a72	a69
Third Avenue Railroad, New York.....	*11	11
Toledo Railways & Light Company.....	8	8
Twin City Rapid Transit, Minneapolis (common).....	110 $\frac{3}{4}$	110 $\frac{3}{4}$
Union Traction Company, Philadelphia.....	a47 $\frac{1}{2}$	a47 $\frac{1}{2}$
United Rys. & Electric Company, Baltimore.....	18	17 $\frac{3}{4}$
United Rys. Inv. Co. (common).....	46	47 $\frac{3}{8}$
United Rys. Inv. Co. (preferred).....	71	74 $\frac{3}{4}$
Washington Ry. & Electric Company (common).....	a36	a35
Washington Ry. & Electric Company (preferred).....	a88 $\frac{3}{4}$	a88
West End Street Railway, Boston (common).....	a92	92
West End Street Railway, Boston (preferred).....	102 $\frac{1}{2}$	102 $\frac{1}{2}$
Westinghouse Elec. & Mfg. Co.....	a71	a70 $\frac{3}{4}$
Westinghouse Elec. & Mfg. Company (1st pref.).....	a120	a120

a Asked. * Last Sale.

Annual Report of the South Side Elevated Railroad

The annual report of the South Side Elevated Railroad of Chicago for the year ended Dec. 31, 1910, shows an increase in gross earnings as compared with the previous year of 9.96 per cent, and in net earnings of 13.09 per cent. The sum of \$50,000 has been set aside for depreciation, making a total depreciation reserve of \$340,682. Earnings and expenses for the year were as follows:

EARNINGS.	
Passengers.....	\$2,343,782
Other earnings.....	90,163
Miscellaneous.....	23,544
Total earnings.....	\$2,457,489
EXPENSES.	
Maintenance of way and structure.....	\$130,278
Maintenance of equipment.....	161,789
Conducting of transportation.....	818,379
General expenses.....	227,287
Loop rental and expenses.....	315,778
Total operating expenses.....	\$1,653,511
Net earnings.....	\$803,977
Deduct interest on bonds.....	\$360,000
Deduct rental paid Chicago Junction Railroad.....	93,080
	453,080
Available for dividends.....	\$350,897
Dividends paid.....	153,448
	\$197,449

Charles V. Weston, the president, said in his statement to the stockholders:

"The gross earnings for the year just ended were \$2,457,488, compared with \$2,234,972 for the previous year, an increase of \$222,516, or 9.96 per cent. Expenses were \$1,653,511, as compared with \$1,523,954 for the previous year, an increase of \$129,577, or 8.5 per cent. Net earnings were \$803,977, as compared with \$711,018 for the previous year, an increase of \$92,959, or 13.09 per cent.

"The surplus from earnings for the last fiscal year was \$350,897, equal to 3.43 per cent on the outstanding capital stock of the company, as compared with 2.52 per cent for the previous year.

"The number of passengers transported during the last year was 46,875,642, as compared with 42,722,624 for the previous year, an increase of 4,153,018 passengers, or 9.72 per cent. The daily average traffic was 128,426 passengers.

"The very favorable increase in traffic on the lines of this company during the last year may be traced to several causes. During the months of July and August last year there were several conventions and other public demonstrations which attracted many visitors to the city and increased the traffic, but considered as a whole the business of the company for the year 1910 may be accepted as that which could be reasonably anticipated, taking into consideration the natural increase in density of population within the territory served and the attractiveness of the service afforded by this company.

"One very interesting and gratifying feature brought out by an analysis of the 1910 traffic is represented by increase of business within the short-haul zone on that part of the main line lying between Fortieth Street and Congress Street stations, just south of the loop. During the years 1907, 1908 and 1909 there was a decided falling off in traffic within the short-haul area mentioned. The total gain for the stations between Fortieth Street and Congress Street for the year 1910, compared with the previous year, was 14.43 per cent. The gain on that part of the line between Congress Street and Eighteenth Street stations, both inclusive, was 16.2 per cent, and between Eighteenth Street and Fortieth Street the gain was 12.9 per cent; all losses in traffic have been practically retrieved.

"There has also been a marked improvement in the traffic on the entire system during those hours not included in the rush hour periods.

"During the year there were some unusual operating costs, attributable largely to increased cost of fuel for the generation of power, due to blockades on the coal roads during the severe weather of January and February and to the coal miners' strike in Illinois, which continued over a period from April 1 to October, curtailing the supply of coal and radically advancing prices for that commodity. There was also an advance in the wages of employees in the transportation and shop departments of the service. The ratio of expense to earnings—including loop rental and all other expenses of every character, except the fixed

charges, which are made up of interest on bonds and the rental charges on lines leased from the Chicago Junction Railroad Company—was 67.3 per cent, as compared with 68.2 per cent for the previous year.

"There have been only slight additions to the physical property of the company during the last year. These consist of additional copper feeder cables. The cost of these additions to the feeder system was \$8,433. There were also some changes in the arrangement of Loomis Street station, to improve operating conditions there, at a cost of \$7,770.

"In the second quarter of the last year your directors deemed the financial condition of your company to be such as to warrant resumption of dividend payments to shareholders. Accordingly a dividend was declared for that quarter at the rate of 2 per cent per annum, and dividends have been declared and paid at the same rate for each succeeding quarter to date. You may reasonably expect the continuance of dividend payments at such rates as your directors may from time to time decide to be consistent with conservative and prudent business management.

"Summarizing the conditions of your company, the following may be said:

"The physical property is in first-class condition of repair. The efficiency of the entire plant is high. The company has no floating indebtedness other than current expenses. It had cash on hand amounting to \$805,189 on Dec. 31, 1910, and with a continuance of the safe policy of conducting the company, which has characterized it to the present time, you may confidently look forward to a steady and continuous improvement in its affairs."

Report of Detroit United Railway

The report of the Detroit (Mich.) United Railway for the year ended Dec. 31, 1910, as presented at the annual meeting of the company on Feb. 7, 1911, compares as follows with the report of the company for the year ended Dec. 31, 1909:

	1909	1910
Gross earnings.....	\$8,047,554	\$9,345,219
Operating expenses.....	5,042,724	5,981,065
Net earnings from operation.....	\$3,004,830	\$3,364,154
Income from other sources.....	144,833	152,768
Gross income less operating expenses.....	\$3,149,663	\$3,516,922
DEDUCTIONS		
Interest on funded and floating debt, and taxes:		
Detroit United Railway.....	\$1,325,568	\$1,463,809
Rapid Railway System.....	159,578	160,709
Sandwich, Windsor & Amherstburg Railway...	26,804	34,100
Detroit, Monroe & Toledo Short Line Railway..	147,166	149,104
Detroit, Jackson & Chicago Railway.....	221,013	222,900
	\$1,880,129	\$2,030,622
Credited to depreciation reserve.....	400,000	400,000
Credited to contingent liability reserve.....	100,000	100,000
Total deductions.....	\$2,380,129	\$2,530,622
Surplus income.....	\$769,534	\$986,299

PASSENGER STATISTICS, 1910

Revenue passengers.....	165,920,752
Transfer passengers.....	48,237,720
Employee passengers.....	6,379,538
Total passengers.....	220,538,011
Receipts revenue passenger.....	.0529
Receipts per passenger.....	.0398

MILEAGE STATISTICS, 1910

	Total
Car mileage.....	36,170,644
Earnings car mile.....	.2584
Expenses car mile.....	.1654
Net earnings car mile.....	.0930

The condensed balance sheet as of Dec. 31, 1910, shows:

ASSETS	
Value of entire property.....	\$40,160,230
Treasury securities.....	2,732,459
Accounts current.....	814,834
Current assets, such as cash, accounts receivable, material and supplies.....	623,842
Discount on gold notes and bonds.....	376,852
Total.....	\$44,708,217
LIABILITIES	
Capital stock.....	\$12,500,000
Mortgage bonds.....	23,333,000
Vouchers payable, bills payable, unredeemed tickets, etc.....	2,790,600
Total reserve fund.....	1,854,510
Surplus account and net income.....	4,230,107
Total.....	\$44,708,217

In presenting the report, J. C. Hutchins, president of the company, said:

"Provisions have been made to pay \$140,000 Detroit Sub-

urban Railway bonds at their maturity Jan. 1, 1911. An equal amount of Detroit United Railway 4½ per cent bonds, now held in escrow by the trustees, will be issued in their stead.

"The company, as in previous years, made liberal expenditures during this year in the maintenance of its tracks, rolling stock and other properties. On Jan. 1, 1910, the company's depreciation reserve stood credited with \$1,038,614. Larger expenditures than usual were incurred for extensive renewals of tracks and foundations, involving heavier construction to meet increased traffic conditions on various city lines. One hundred additional motor equipments were purchased during the year, costing \$58,987, which amount has been charged against depreciation reserve. There was added to the credit of the depreciation reserve during the year \$400,000, leaving said fund with a present credit balance of \$1,379,627. At the beginning of the year the company's surplus stood credited with \$3,244,539. There has been credited to the contingent liability reserve the sum of \$100,000 out of the earnings of the year 1910, making \$400,000 in said reserve. This leaves a present surplus of \$4,230,107."

Franchise Assessments in New York

The New York State Board of Tax Commissioners has completed its special franchise tax assessments for New York City. The total for 1911 is \$483,908,300, as compared with \$465,409,600 in 1910 and \$474,001,900 for 1909. The final assessments of the principal street railways for 1910 and the tentative assessments for 1911 follow:

	Final.	Tentative.
	1910.	1911.
Bleecker Street & Fulton Ferry Railroad.....	\$730,000	\$730,000
Broadway & Seventh Avenue Railroad.....	7,955,000	7,250,000
Brooklyn Rapid Transit System.....	53,276,300	59,304,800
Bronx Traction Company.....	250,000	260,000
Central Crosstown Railroad.....	660,000	400,000
Central Park, North & East River Railroad.....	2,750,000	1,800,000
Christopher & Tenth Street Railroad.....	1,172,000	1,172,000
Coney Island & Brooklyn Railroad.....	4,036,000	4,036,000
Dry Dock Railroad.....	1,400,000	1,400,000
Eighth Avenue Railroad.....	4,890,000	6,000,000
Fort George Railroad.....	317,000	317,000
Forty-second Street Railroad.....	1,600,000	1,200,000
Manhattanville Railway.....	4,206,000	4,600,000
Fulton Street Railroad.....	20,000	10,000
Hudson & Manhattan Railroad.....	10,900,000	11,500,000
Kingsbridge Railway.....	759,000	759,000
Long Island Electric Railway.....	425,000	425,000
Manhattan Railway.....	78,512,500	81,412,500
Metropolitan Street Railway.....	20,258,000	19,200,000
Nassau Electric Railroad.....	3,056,400	3,056,400
New York & Queens County Railway.....	2,275,000	1,057,000
Ninth Avenue Railroad.....	2,800,000	2,800,000
Pennsylvania Tunnel & Terminal Company.....	15,800,000	16,000,000
Richmond Light & Railroad Company.....	550,000	650,000
Sixth Avenue Railroad.....	4,550,000	4,550,000
Southern Boulevard Railroad.....	196,000	212,000
Third Avenue Railroad.....	7,920,000	8,300,000
Twenty-third Street Railway.....	2,700,000	1,625,000
Thirty-fourth Street Railway.....	1,206,000	700,000
Union Railway.....	4,420,000	4,700,000
Westchester Electric Railroad.....	150,000	150,000

Refinancing in Philadelphia

The Philadelphia (Pa.) Rapid Transit Company has given official notice of the special meeting of the stockholders of the company to be held on Feb. 28, 1911, at which the following matters will be acted upon in accordance with the plan for refinancing advanced by E. T. Stotesbury, of Drexel & Company, Philadelphia:

First—An increase of the indebtedness of the company from \$5,000,000 to \$15,000,000.

Second—The authorization of an issue of \$10,000,000 of 5 per cent gold bonds, and the execution of a deed of trust securing the same, being the increase of indebtedness above mentioned.

Third—The assignment and transfer to the Union Traction Company of Philadelphia, the lessor of Philadelphia Rapid Transit Company, under lease dated July 1, 1902, of all the interest and equity of Philadelphia Rapid Transit Company of every kind in the Market Street Elevated Passenger Railway, the Darby & Yeadon Street Railway, the Doylestown & Willow Grove Railway, and in all other railway properties acquired since July 1, 1902, and the re-transfer to the Philadelphia Rapid Transit Company of said interests and equity under lease without additional rental, the same as if they had been part of the Union Traction Company's system leased to the Philadelphia Rapid Transit Company July 1, 1902; such transfer to be in consideration

of the guarantee by the Union Traction Company of Philadelphia of the payment of the principal and the interest of said bonds from time to time maturing.

Fourth—Assenting to an increase in the capital stock of the Market Street Elevated Passenger Railway.

Fifth—The approval of a new system of keeping the books and accounts of the company.

Sixth—Such other business as may be germane to the above matters.

Prospects for Consolidation of Chicago Elevated Railroads

Henry A. Blair, chairman of the board of directors of the Chicago (Ill.) Railways, who has for some time been at work on a plan to consolidate the elevated railways in Chicago, returned to that city on Feb. 16, 1911, from New York. Questioned about the pending merger, he is reported to have said:

"We have made some progress and that is about all I can say at this time. I expect to return to New York about the end of this week to continue the negotiations. It is a big project, and I do not expect that it can be brought about in a week or a month, possibly not in a year. Every one concerned is agreed that a merger of all transportation lines is desirable, but when some one attempts to bring it about there are always some 'knockers' who get busy. I do not feel discouraged, however, and I still believe that the plans worked out last July will go through."

Colorado Railway, Light & Power Company, Trinidad, Col.—Application for the appointment of receiver for the Colorado Railway, Light & Power Company has been made in the Federal Court at Denver by W. H. Brown & Brothers, New York, N. Y., who allege that they are creditors of the company to the amount of \$250,000; that the coupons due on Feb. 1, 1911, on the \$1,864,000 of outstanding bonds of the company remain unpaid, and that the liabilities of the company greatly exceed the assets.

Coney Island & Brooklyn Railroad, Brooklyn, N. Y.—The Coney Island & Brooklyn Railroad has been granted permission by the Public Service Commission of the First District of New York to issue \$91,819 of 4 per cent bonds under the mortgage of Dec. 15, 1904, executed to the Mercantile Trust Company, as trustee. The company must sell the bonds so as to net not less than 80.

Elizabeth & Trenton Railroad, Trenton, N. J.—The stockholders of the Elizabeth & Trenton Railroad have authorized an issue of \$750,000 of bonds to provide funds for constructing an electric railway between New Brunswick and Elizabethport, and have also authorized the directors to lease the property of the company to the Public Service Railway. The incorporation of the Elizabeth & Trenton Railroad as the successor to the Trenton & New Brunswick Railroad and the New Jersey Short Line Railroad was noted in the *ELECTRIC RAILWAY JOURNAL* of May 28, 1910, page 957.

Federal Light & Traction Company, New York, N. Y.—The Federal Light & Traction Company has sold to White, Weld & Company, New York, N. Y., and Spencer Trask & Company, New York, N. Y., its entire authorized issue of \$2,000,000 of 6 per cent two-year notes dated Feb. 15, 1911, and due Feb. 15, 1913, but callable after Aug. 15, 1911, in lots of \$100,000 or over at par and interest upon 60 days' notice. The Columbia Trust Company, New York, N. Y., is trustee of the issue. The securities to be deposited as collateral for the notes represent a cash investment of not less than \$3,300,000. In addition the company will have in its treasury available for corporate purposes approximately \$1,000,000 from the proceeds of these notes.

Fort Smith Light & Traction Company, Fort Smith, Ark.—The authorized capital stock of the Fort Smith Light & Traction Company has been increased from \$1,600,000 to \$6,500,000. Of the previous capital stock of \$1,600,000 there were \$950,000 of common stock authorized and outstanding and \$650,000 of 5 per cent preferred stock authorized and outstanding. Of the new total of \$6,500,000 of authorized new stock, \$1,500,000 is common and \$5,000,000 7 per cent preferred, and of these amounts \$950,000 of common and \$920,000 of preferred are outstanding. Dividends on the preferred stock are payable on Jan. 15, April 15, July 15 and Dec. 30.

Ft. Wayne & Wabash Valley Traction Company, Ft. Wayne, Ind.—A new corporation is to be formed to be known as the Ft. Wayne & Northern Indiana Traction Company to take over the Ft. Wayne & Wabash Valley Traction Company. The present company has \$6,000,000 common and \$1,500,000 preferred stock, \$8,900,000 bonds and about \$1,000,000 of floating debt. The Ft. Wayne & Northern Indiana Traction Company will have \$4,000,000 each of common and preferred stock and \$15,000,000 authorized refunding bonds. Subject to all indebtedness, the Ft. Wayne & Wabash Valley Traction Company is to be taken over by the new company, it giving its common stock and \$2,500,000 preferred. Upon payment of \$17.50 a share, the old company preferred shareholders will get \$1,500,000 preferred stock of the new company, and \$2,622,200 of its common stock comes to holders of the present common stock. The \$17.50 per share fund is to be turned over to the new company. A banking syndicate gets \$125,000 of this fund and \$344,300 new common stock for underwriting the sale of \$1,000,000 bonds, \$1,000,000 preferred and \$1,000,000 common stock of the new company so as to yield it \$1,500,000 cash.

Interborough-Metropolitan Company, New York, N. Y.—Notice has been sent to stockholders of the Interborough-Metropolitan Company that the voting trust of that company, which expires March 6, 1911, will be extended until March, 1916. Stockholders are asked to authorize S. R. Guggenheim, R. R. Govin, Edwin Hawley, G. L. Hoyt and M. F. Plant to execute the renewal agreement. In a circular to the stockholders it is stated that this action is necessary in order to complete the subway plans that are under consideration. So far the company has received consent of approximately 75 per cent of both classes of stock. Under the new agreement there will be three new names added to the voting trust. These are Theodore P. Shonts, Andrew Freedman and Cornelius Vanderbilt. The other two are August Belmont and E. J. Berwind, both of whom were in the original voting trust. Regarding the new names the agreement says, in part: "Any vacancies among the voting trustees caused by the death, resignation or inability to act of Andrew Freedman and Cornelius Vanderbilt or any successor appointed to either of them shall be filled by August Belmont & Company as from time to time constituted. Any vacancy among the voting trustees caused by the death, resignation or inability to act of E. J. Berwind or Theodore P. Shonts or any successor appointed to either of them shall be filled by the Guaranty Trust Company, New York. Any vacancy among the voting trustees caused by the death, resignation or inability to act of August Belmont or any successor appointed to him shall be filled as follows: Said August Belmont shall, within 30 days from the date of this agreement, lodge with the Guaranty Trust Company an instrument in writing signed by him designating three persons for that purpose, and any such vacancy shall be filled in the order of their designation."

Ohio Traction Company, Cincinnati, Ohio.—Charles P. Taft, Cincinnati, has been elected a director of the Ohio Traction Company to fill a vacancy in the board of directors caused by Mr. Taft's resignation two years ago, since which time the place has not been filled.

Public Service Corporation of New Jersey, Newark, N. J.—The Public Service Corporation of New Jersey has issued the following notice to the holders of the preferred stock of the New Jersey & Hudson River Railway & Ferry Company: "By the terms of an agreement dated Jan. 9, 1911, the Public Service Corporation of New Jersey has guaranteed a continuance of the annual dividends of 6 per cent, payable semi-annually upon the first days of February and August, upon the outstanding preferred stock of the New Jersey & Hudson River Railway & Ferry Company. The corporation is now prepared to stamp upon such certificates as are outstanding the terms of this agreement, and for this purpose it invites you to send, by registered mail, to J. P. Dusenberry, treasurer, the certificate in your possession. When so indorsed the certificate will be returned."

Public Service Investment Company, Boston, Mass.—Stone & Webster, Boston, Mass., offer for subscription at 98½, yielding 6.10 per cent, \$500,000 of 6 per cent cumulative preferred stock of the Public Service Investment Company. The authorized capital stock of the company is

\$4,000,000, of which \$2,000,000 is preferred and \$2,000,000 common. Of the preferred stock \$1,500,000 is outstanding, while all of the common stock is outstanding. The company has no bonded indebtedness.

Somerset Water, Light & Traction Company, Somerset, Ky.—The United Water, Light & Traction Company has been incorporated with a capital stock of \$100,000 to succeed the Somerset Water, Light & Traction Company, the property of which was sold under foreclosure recently, as noted in the *ELECTRIC RAILWAY JOURNAL* of Jan. 28, 1911, page 182.

Washington, Baltimore & Annapolis Electric Railway, Washington, D. C.—The property of the Washington, Baltimore & Annapolis Electric Railway will be sold at foreclosure sale on March 20, 1911, at the Naval Academy Junction, under an order of the United States Circuit Court, which followed the filing of a bill by the receivers asking such action. The details of the plan of the committee representing the bondholders for the reorganization of the company were referred to in the *ELECTRIC RAILWAY JOURNAL* of Nov. 19, 1910, page 1044, and Nov. 26, 1910, page 1078.

Dividends Declared

- American Railways, Philadelphia, Pa., quarterly, 1½ per cent.
- Brockton & Plymouth Street Railway, Plymouth, Mass., 3 per cent, preferred.
- Brooklyn Rapid Transit, Brooklyn, N. Y., quarterly, 1¼ per cent.
- Columbus (Ohio) Railway, quarterly, 1¼ per cent, common.
- Galveston-Houston Electric Company, Galveston, Tex., 3 per cent, preferred; No. 4, 1½ per cent, common.
- Grand Rapids (Mich.) Railway, quarterly, 1 per cent, common.
- Halifax (N. S.) Electric Tramway, quarterly, 2 per cent.
- Kansas City Railway & Light Company, Kansas City, Mo., quarterly, 1¼ per cent, preferred.
- Northern Ohio Traction & Light Company, Akron, Ohio, quarterly, ¾ per cent.
- St. Joseph Railway, Light, Heat & Power Company, St. Joseph, Mo., quarterly, ½ per cent, common.
- Terre Haute Traction & Light Company, Terre Haute, Ind., 3 per cent, preferred.
- West Penn Traction, Pittsburgh, Pa., 1 per cent, common.

MONTHLY ELECTRIC RAILWAY EARNINGS

AMERICAN RAILWAYS COMPANY.						
Period.	Gross Revenue.	Operating Expenses.	Net Revenue.	Fixed Charges.	Net Income.	
1m., Jan. '11	\$314,387	.....	.....	.....	.....	.....
1 " " '10	293,132	.....	.....	.....	.....	.....
7 " " '11	2,389,092	.....	.....	.....	.....	.....
7 " " '10	2,236,617	.....	.....	.....	.....	.....
BROCKTON & PLYMOUTH STREET RAILWAY.						
1m., Dec. '10	\$7,672	\$6,561	\$1,111	\$1,575	*\$164	
1 " " '09	8,001	6,852	1,149	1,809	*659	
12 " " '10	119,626	84,662	34,964	20,160	14,804	
12 " " '09	130,786	92,949	37,837	21,668	16,169	
EL PASO ELECTRIC COMPANY.						
1m., Dec. '10	\$65,168	\$37,022	\$28,146	\$7,505	\$20,641	
1 " " '09	59,667	32,628	27,039	9,410	17,629	
12 " " '10	640,658	369,057	271,601	99,011	172,590	
12 " " '09	600,958	360,103	240,855	98,225	142,630	
OKLAHOMA CITY RAILWAY.						
1m., Dec. '10	\$55,314	\$37,261	\$18,053	.....	.....
1 " " '09	41,227	29,043	12,184	.....	.....
12 " " '10	648,330	399,830	248,500	.....	.....
12 " " '09	452,569	278,757	173,812	.....	.....
FORT SMITH LIGHT & TRACTION COMPANY.						
1m., Dec. '10	\$25,434	\$28,994	\$23,439	.....	.....
1 " " '09	45,611	24,531	21,080	.....	.....
12 " " '10	470,232	266,774	203,458	.....	.....
12 " " '09	395,800	225,187	170,613	.....	.....
OTTUMWA RAILWAY & LIGHT COMPANY.						
1m., Dec. '10	\$28,276	\$14,316	\$13,960	.....	.....
1 " " '09	25,745	12,856	12,889	.....	.....
12 " " '10	262,833	149,744	122,089	.....	.....
12 " " '09	236,583	126,103	110,480	.....	.....
PENSACOLA ELECTRIC COMPANY.						
1m., Dec. '10	\$25,561	\$13,878	\$11,682	\$5,119	\$6,563	
1 " " '09	20,410	11,726	8,684	4,597	8,087	
12 " " '10	273,103	159,605	113,498	60,532	52,966	
12 " " '09	246,664	141,338	105,327	52,631	45,695	
SEATTLE ELECTRIC COMPANY.						
1m., Dec. '10	\$493,843	\$260,801	\$233,041	\$107,452	\$125,589	
1 " " '09	481,893	289,035	192,858	103,709	89,149	
12 " " '10	5,588,189	3,212,789	2,375,400	1,307,330	1,068,070	
12 " " '09	5,854,175	3,394,538	2,459,638	1,242,663	1,216,974	

Traffic and Transportation

Ticket Sales in the New York Subway

The Public Service Commission of the First District of New York has issued a table of ticket sales by the Interborough Rapid Transit Company on the subway division which shows that between the opening of the subway lines on Oct. 27, 1904, and Jan. 1, 1911, 1,212,771,225 passengers were carried as follows: Two months of 1904, 16,241,869; 1905, 116,209,313; 1906, 149,778,370; 1907, 182,559,990; 1908, 220,991,212; 1909, 256,768,981; 1910, 270,221,490. The number of passengers carried in 1910 was more than double the aggregate carried in 1905—the first full year of operation. Liberal increases are indicated by individual stations during the five years ended Dec. 31, 1910. This is particularly noticeable with respect to the Times Square, Grand Central, Fourteenth Street and Fulton Street stations. At the same time the Lenox Avenue and Broadway branches, as well as the entire business between Ninety-sixth Street and South Ferry, show very large gains. A comparison of the number of tickets sold in the stations and sections of the subway mentioned follows:

	1910.	1905.
Lenox Branch.....	49,781,496	22,303,145
Broadway Branch.....	32,752,668	9,112,575
Ninety-sixth Street to South Ferry.....	154,117,174	84,714,568
Times Square.....	11,354,365	5,396,503
Grand Central.....	13,843,848	7,884,042
Fourteenth Street.....	12,593,253	6,387,271
Brooklyn Bridge.....	16,688,628	16,198,989
Fulton Street.....	13,109,949	5,722,456

There was a falling off in the number of tickets sold at the Brooklyn Bridge station last year from each of the three previous years. The Times Square and Grand Central stations, however, show a gradual improvement from their inception.

The following table shows the yearly ticket sales at the Times Square, Grand Central and Brooklyn Bridge stations since the opening of the subway:

	Times Square.	Grand Central.	Brooklyn Bridge.
1910	11,354,365	13,843,848	16,688,028
1909	10,776,529	13,309,953	16,980,474
1908	9,638,382	11,752,264	16,909,224
1907	8,608,030	11,041,818	23,175,615
1906	6,876,965	9,562,754	19,595,251
1905	5,396,503	7,884,042	16,198,989
1904 (two months).....	868,900	1,177,650	3,092,681

A comparison of the yearly ticket sales on the three divisions of the subway follows:

	96th St. to So. Ferry.	Broadway Branch.	Lenox Branch.
1910	154,117,174	32,752,668	49,781,496
1909	149,888,370	30,152,688	46,295,409
1908	134,415,454	24,877,110	39,877,715
1907	127,563,153	19,554,470	35,312,015
1906	107,183,278	13,002,816	29,473,234
1905	84,714,568	9,112,575	22,303,145
1904 (two months).....	12,699,107	1,688,813	1,853,949

Accident Prevention Campaign of Lehigh Valley Transit Company

At a recent meeting of the School Board of Allentown, Pa., Superintendent Raub, in his report, recommended to the board that the Lehigh Valley Transit Company be given permission to address the pupils in all the schools of Allentown, Pa. In an interview in regard to the plans of the company for its campaign to prevent accidents Edward C. Spring, traffic manager of the company, said:

"It is the policy of the Lehigh Valley Transit Company to do everything within its power to prevent accidents rather than wait for them to happen, and to this end it appears to us in consideration of the large number of accidents which happen to school children that our campaign of education cannot be more pertinently started than with the pupils of the public schools.

"Our plan is to have our claim department, which is under the supervision of R. H. Schoenen, visit the various schools in Allentown and give 15 or 20-minute talks to the children on the safeguards against accidents, impressing upon them the results which follow carelessness and negligence on their part. Afterward these talks will be followed up in all the schools of the various cities and towns along our line.

"We cannot help believe that the parents will appreciate this up-to-date movement, and will follow up the talks at

home by further impressing upon the child the necessity of care and caution while playing in and around the tracks of the company. This is one of the greatest movements that have ever been undertaken by transportation companies, and has been carried out successfully in the Middle West. We shall visit every grade, from the kindergarten to the high schools, both public and parochial. In Cleveland, Ohio, E. F. Schneider, the manager of the Cleveland, Southwestern & Columbus Railway, one of the largest interurban lines operating out of that city, made 360 addresses, speaking to upward of 30,000 pupils last year. These were little talks lasting from 10 to 20 minutes, impressing the children to be careful.

"The Lehigh Valley Transit Company believes that this new departure in our claim department will be sincerely appreciated by not only the parents of the pupils, but by the public in general."

Accidents in Indiana for the Quarter

The Railroad Commissioner of Indiana has issued Bulletin No. 14, which contains a summary of the accidents on the steam railroads and the electric railways operated in Indiana for the three months ended December, 1910, and Circular 71, on the prevention of accidents, which was addressed to the interurban electric railways of Indiana on Jan. 25, 1911, by the commission. This letter was published in the ELECTRIC RAILWAY JOURNAL of Nov. 19, 1910, page 1046. The comparative record of casualties on the interurban railways as made public by the commission follows:

PASSENGERS.			
WHERE—		1909.	1910.
On passenger trains.....		32	35
On station grounds.....		3	1
CAUSES—			
Collisions	12	11	0
Derailments	5	0	1
Getting on and off moving trains.....	9	5	5
Getting on and off trains after stops are made.....	1	4	4
Miscellaneous	8	16	16
RESULTS—			
Deaths	3	0	0
Fractures and dislocations.....	0	1	1
Sprains	2	1	1
Cuts and bruises.....	27	30	30
Miscellaneous	3	4	4
HIGHWAYS.			
WHERE—			
In vehicles.....	8	7	7
On foot.....	2	2	2
CAUSES—			
Struck on crossing.....	10	7	7
Teams frightened.....	0	2	2
Miscellaneous	0	0	0
RESULTS—			
Deaths	0	2	2
Sprains	0	0	0
Cuts and bruises.....	4	3	3
Miscellaneous	6	4	4
EMPLOYEES.			
EMPLOYMENT—			
Conductors	4	0	0
Motormen	3	6	6
Laborers	3	9	9
CAUSES—			
Collisions	3	3	3
Miscellaneous	7	12	12
RESULTS—			
Deaths	5	2	2
Fractures or dislocations.....	0	4	4
Sprains	0	0	0
Cuts and bruises.....	1	7	7
Miscellaneous	4	2	2
TRESPASSERS.			
WHERE—			
On tracks.....	8	7	7
Miscellaneous	0	3	3
RESULTS—			
Deaths	7	7	7
Fractures or dislocations.....	1	0	0
Sprains	0	2	2
Cuts and bruises.....	0	1	1

In commenting on the figures contained in the report the commissioners say:

"No passengers were killed on interurban railways during this quarter, while three were killed during the same quarter in 1909. Following the preceding quarter, when 50 passengers were killed in one quarter, this quarter makes a good showing. It indicates that more care and attention are being given by interurban officials and employees to safe operation. It indicates also that the people of Indiana, through its commission and otherwise, have taken up this most important subject and have given it full consideration. That there may be general information on this subject we publish as a part of this circular the circular letter, No. 71, which shows the action taken by the commission and the interurban railways to prevent

accidents on interurban railways. We note, also, that while in this quarter of 1909 there were five employees killed, there were only two killed in this quarter in 1910, one being killed in collision and one being struck by car."

Fenders and Wheel Guards in New York

Within the last two years the street railways in Greater New York have equipped 6350 cars with wheelguards and about 350 cars with projecting fenders at a cost of between \$250,000 and \$300,000 in compliance with orders issued by the Public Service Commission of the First District of New York. The projecting fenders are attached to the front dash of the car and extend beyond the bumper. The cars equipped with wheelguards carry two each, one on each end. The Metropolitan Street Railway has about 1800 cars equipped with wheelguards; the Third Avenue Railroad and the Union Railway have more than 1000, and the Brooklyn Rapid Transit Company has about 2000. Other companies have installed wheelguards as follows: The New York City Interborough Railway, 45 cars; Second Avenue Railroad, 250 cars; South Shore Traction Company, 10 cars; Westchester Electric Railway, 101 cars; Yonkers Railroad, 56 cars; Coney Island & Brooklyn Railroad, 410 cars; Richmond Light & Railroad Company and Staten Island Midland Railway, 177 cars. Projecting fenders have been installed as follows: New York & Queens County Railway, 239 cars; New York & Long Island Traction Company, 30 cars; Long Island Electric Railway, 37 cars; Van Brunt Street & Erie Basin Railroad, 10 cars.

The commission issued its order for the installation of wheelguards and fenders by all companies in Greater New York in April, 1909, following a series of tests which it conducted in the fall of 1908 at Schenectady and Pittsburgh to determine the relative efficiency of the different types of such devices. The reports of accidents for the fiscal year ended June 30, 1908, showed that 303 persons had been killed by accidents on street surface railways during the year, whereas after the wheelguards and fenders had been installed, namely, for the year ended June 30, 1910, the accident reports for the same companies showed only 152 persons killed during the year. The purchase of new and improved cars by the companies and the complete overhauling of old cars undoubtedly exerted an influence toward lessening the number of fatal accidents.

Accident in Sheboygan.—Several persons were killed at Sheboygan, Wis., on Feb. 9, 1911, when a car of the Sheboygan Railway & Electric Company plunged through an open draw at Sheboygan into the Sheboygan River.

Milwaukee Sprinkling Ordinance Valid.—The Supreme Court of Wisconsin has held that the city ordinance of Milwaukee which requires the Milwaukee Electric Railway & Light Company to sprinkle the pavement between its tracks and 1 ft. on each side is valid.

Toronto & York Radial Railway Desires to Operate on Sunday.—The Toronto & York Radial Railway, Toronto, Ont., Can., has applied to the Ontario Railway & Municipal Board for authority to operate its cars on Sunday on the Metropolitan branch to and from any city of more than 50,000 inhabitants.

New Passenger Tariff of the Los Angeles-Pacific Company.—The Los Angeles-Pacific Company, Los Angeles, Cal., has issued local passenger tariff No. 4-A, which cancels conductors' passenger tariff No. 4 and names one-way and round-trip fares between stations on all the lines of the company. The tariff was issued under date of Dec. 31, 1910, and became effective on Jan. 6, 1911.

Crew in Illinois Traction Wreck Indicted.—The motorman and conductor who were said to have been responsible for the wreck which happened near Staunton on the Illinois Traction System last fall were recently indicted by the grand jury. The State Attorney called the case immediately, but it has been postponed until the next term of court, as the motorman is ill with brain fever.

Traffic Between Louisville and Indianapolis.—Traffic between Louisville and Indianapolis was discussed last week at a meeting of the companies interested held at New Albany, Ind. Representatives of the following companies were present: Louisville & Northern Railway & Lighting

Company, Louisville & Southern Indiana Traction Company, Indianapolis, Columbus & Southern Traction Company and the Indianapolis & Louisville Traction Company.

Record of Thirteen Years Without a Fatal Accident.—In a communication sent to the *Chicago Record-Herald* recently by E. E. Downs, general manager of the Chicago & Milwaukee Electric Railroad, it was set forth that in the 13 years' life of the road not a single fatal accident has resulted from operation. During that period, according to Mr. Downs, between 75,000,000 and 100,000,000 passengers were carried. Mr. Downs said: "I do not think there is another railroad in America, either steam or electric, which has been in operation the same length of time or carried the same number of people that can show a record as clean."

Automatic Trips on Subway Local Tracks.—The Public Service Commission has adopted a final order requiring the Interborough Rapid Transit Company to install automatic trips in connection with all the red or danger signals on its local tracks in the subway by July 1, 1911. The commission decided that the full equipment of the local tracks with the automatic stops would seriously impede local traffic and be an unnecessary precaution. There are 98 places in the subway, however, where the local tracks are equipped with danger signals showing when a red light is displayed the presence of a train in the block immediately ahead, and at these points automatic stops will be provided.

Sentence Passed on Car Bandits.—One of the bandits who held up a car of the Los Angeles-Pacific Railway, Los Angeles, Cal., at Tokio station on the Venice short line on Jan. 26, 1911, has been sentenced to life imprisonment. In passing sentence the judge said: "A man who will hold up a train or a man and relieve him of his property will do anything to accomplish that purpose. He will not stop at murder. A man who possesses the nerve and the cool, collected abilities that you do is not a subject of reformation, in my judgment." Up to Feb. 10, 1911, the other members of the gang implicated in the hold-up had not been apprehended. Several passengers of the car which was held up were injured in the *mêlée* incident to relieving passengers of their valuables.

Hearing on Transfers in Jersey City.—The Board of Public Utility Commissioners of New Jersey has decided to give a public hearing upon the complaint of the Seventh Ward Improvement Association of Jersey City against the Public Service Railway in regard to the refusal of the company to give transfers on the Montgomery-Greenville-Culver Avenue line, which is a continuous route from the ferry in Jersey City to the car house in Greenville. The line is operated to two terminal stations, Greenville being at the end of the route and Culver Avenue about one-quarter of the distance from the terminal in Greenville. Complaint was made that the company refuses to issue transfers to passengers who may by mistake board a car marked "Culver Avenue" and compels them to pay an extra fare to continue their journey beyond that point. The company contends that the present system tends to prevent unnecessary overcrowding of short-line cars by long-haul passengers.

Handling an Excursion with a Locomotive.—On Feb. 14, 1911, the Illinois Traction System handled a large number of people into and out of Springfield. Trailers were attached to all morning trains from Champaign, Bloomington, Peoria and Clinton. An excursion party of 302 people was also handled from Decatur to Springfield, 40 miles, in six passenger trailer coaches drawn by one of the new 800-hp electric locomotives, which were described in the *ELECTRIC RAILWAY JOURNAL* for Oct. 8, 1910, page 646. The performance of this type of locomotive in freight service has been especially satisfactory, and this excursion gave an opportunity to observe one of the locomotives in passenger train service. The train was handled through city streets in Decatur and Springfield and over the 40-mile interurban division at a schedule speed of 20 m.p.h. From observation of the instruments in the locomotive it required only 350 amp at 500 volts to move the train at 38 m.p.h. The maximum amperage required to start the train was 500 and the full train could be brought to a stop from 38 m.p.h. in a distance of 600 ft. The Sprague-General Electric controllers on locomotives of this type have 18 points; on the first 7 points all four motors are connected in series. This arrangement accounts for the small starting current.

Wisconsin Commission on Fares in Neenah.—In the case of the City of Neenah against the Wisconsin Light, Heat & Traction Company and the Wisconsin Electric Railway the Railroad Commission of Wisconsin has ordered the companies to grant a 5-cent fare with transfer privileges between the two systems within the city limits in substitution for the fare of 5 cents now charged by each road for travel within the corporate limits. Both companies operate inter-urban lines between Neenah and Menasha, but the Wisconsin Electric Railway is the only one whose lines traverse Neenah from one end of the city to the other. The Wisconsin Light, Heat & Traction Company's lines extend but a short distance within the city limits. Passengers have hitherto been compelled to pay a fare of 5 cents on each road, and the city contended that the double fare was inequitable and not conducive to the best interests of the city. The respondents contended that the bulk of their business was between Neenah and Menasha and that the strictly city business within the corporate limits of Neenah did not justify the joint fare; also that their franchises called for fares not lower than 5 cents within the city limits. The commission overruled the franchise objection on the authority of the Supreme Court decision in the Manitowoc-Two Rivers fare case, mention of which is made elsewhere in this department.

Decision in Regard to Transfers on Staten Island.—In November, 1909, the Public Service Commission of the First District of New York, under Section 57 of the Public Service Commissions Laws, applied to the Supreme Court for a writ of mandamus directed to the Richmond Light & Railroad Company and to the Staten Island Midland Railway to compel those companies to exchange transfers at three points where the lines of the two companies intersect within the limits of the former village of New Brighton. At the trial before Justice Clark on Dec. 1, 1909, it was urged by the commission that at all three points transfers should be given because of conditions contained in the franchises which the two companies had obtained from New Brighton before consolidation. As to the two points on Castleton Avenue it was also urged that as the two companies, by virtue of a trackage agreement, operated over one set of tracks on Castleton Avenue, between Broadway and Columbia Street, transfers should be given under the provisions of Section 104 of the Railroad Law. On July 16, 1910, an opinion was filed in favor of the commission, on the ground that the franchises of the companies required transfers at all three points, and an appeal was taken by the company from the order entered. On Nov. 15, 1910, the appeal was argued before the Appellate Division for the Second Department and a decision was rendered on Dec. 30, 1910, sustaining, on the opinion below, the order made at Special Term.

Ruling by Wisconsin Supreme Court on Fare Case.—The Supreme Court of Wisconsin, in the case of the City of Manitowoc against the Manitowoc & Northern Traction Company, has handed down a decision to the effect that no franchise now in operation has the force of a binding contract between the parties thereto, provided the Railroad Commission sees fit to alter any provisions in the franchise. The question came to the Supreme Court on an appeal from the Circuit Court of Manitowoc County where the trial court refused to make permanent a temporary injunction against the Manitowoc & Northern Traction Company to restrain it from raising the rate of fare between Manitowoc and Two Rivers from 10 cents to 15 cents. The franchise states that 10 cents shall be the maximum fare between the two cities. All contracts will remain in force until the rates provided therein have been changed by the commission. If the rate is changed the contract is superseded. As the Manitowoc & Northern Traction Company has failed to bring the matter before the commission for a determination as to the reasonableness of the new rates the old rate must hold until such action has formally been taken and the new rate approved. The increase in fares between Manitowoc and Two Rivers was announced by the company on April 20, 1909, and on June 4, 1910, the injunction obtained by the city to prevent the company from putting the increase into effect was dissolved. As announced in the *ELECTRIC RAILWAY JOURNAL* of July 9, 1910, page 93, the increase was declared in effect on June 15, 1910.

Personal Mention.

Mr. A. J. Glynn has been appointed master mechanic of the Lake View Traction Company, Memphis, Tenn.

Mr. C. P. Taft has been elected a vice-president and a director of the Ohio Traction Company, Cincinnati, Ohio.

Mr. John Roberts has been appointed signal engineer of the New York, Westchester & Boston Railway, New York, N. Y.

Mr. W. F. McKnight, Harrel, Ark., has been appointed a member of the Railroad Commission of Arkansas to succeed Mr. William A. Falconer.

Mr. E. M. Haas, formerly superintendent of bridges and buildings of the Illinois Traction System, Peoria, Ill., has been transferred to another department.

Mr. George W. Bellamy, Mammoth Springs, Ark., has been appointed a member of the Railroad Commission of Arkansas to succeed Mr. John W. Crockett.

Mr. L. B. Martin, engineer maintenance of way, Illinois Traction System, Peoria, Ill., has had his jurisdiction extended to include the department of bridges and buildings.

Mr. Lewis C. Bewsey, who has been connected with the Indiana Union Traction Company, Anderson, Ind., for 15 years, has been appointed superintendent of the company in Indianapolis to succeed Mr. C. L. McMahan, resigned.

Mr. Walter J. Gillner, who has been connected with the claim department of the Indiana Union Traction Company for the last three years, with headquarters in Indianapolis, Ind., has resigned to become connected with the claim department of the Portland Railway, Light & Power Company, Portland, Ore.

Mr. W. Sumner Seibert has been appointed assistant to the secretary of the Railroad Commission of Pennsylvania, a newly created position. Mr. Seibert was acting secretary of the commission previous to the appointment of Mr. Archibald B. Millar as secretary of the commission, as noted in the *ELECTRIC RAILWAY JOURNAL* of Jan 21, 1911.

Mr. W. M. Archibald has been appointed engineer of maintenance of way for Galveston Electric Company, Galveston-Houston Interurban Railway and Houston Electric Company, which include the city lines of Galveston and Houston and the interurban railway between these cities. Mr. Archibald has had about 15 years' experience in Birmingham and other cities in similar capacities.

Mr. Edward Bell, local superintendent of the Illinois Traction Company's street railway and lighting properties in St. Louis, Mo., and Venice, Madison and Granite City, Ill., is en route to the Barbados Islands, off the northeast coast of South America to make an engineering study of the Bridgetown Tramways, which have been purchased by William B. McKinley, Champaign, Ill., and his associates. It is proposed to rebuild and re-equip this narrow-gage street car system, and Mr. Bell will make plans and recommendations for this work.

Mr. C. L. McMahan has resigned as superintendent of the Indiana Union Traction Company at Indianapolis, Ind., to devote his entire attention to the development of a farm which he has purchased between Paoli and French Lick, Ind. Mr. McMahan entered the employ of the company about 14 years ago as a motorman and conductor on the city lines at Muncie, in which capacities he served for more than four years. Subsequently he served in the office of the company at Muncie for two years. He was next appointed superintendent of the company at Indianapolis.

Mr. James P. Kineon, whose appointment as superintendent of the Ocean Electric Railway, Glen Cove Railway, Northport Traction Company, Nassau County Railway, and the Huntington Railway, all controlled by the Long Island Railroad, was announced in the *ELECTRIC RAILWAY JOURNAL* of Feb. 18, 1911, was graduated from the electrical engineering department of Yale University in 1905. During 1905 and 1906 Mr. Kineon was connected with the General Electric Company testing meters, small motors and transformers. During 1906 and 1907 he served under the electrical superintendent of the Long Island Railroad, and from 1907 to 1911 he was connected with the New York & Long

Island Traction Company and the Long Island Electric Railroad as superintendent in charge of transportation, maintenance of way, maintenance of equipment and the operation of power houses and substations.

Mr. W. H. DeWitt, who was appointed superintendent of transportation of the Ft. Dodge, Des Moines & Southern Railroad, Boone, Ia., as announced in the *ELECTRIC RAILWAY JOURNAL* of Feb. 4, 1911, began his railroad career with the Chicago, Burlington & Quincy Railroad as a switchman. Mr. DeWitt was subsequently made a brakeman and was later appointed a freight conductor. His next position was as passenger conductor. Then he was advanced to assistant trainmaster and from assistant trainmaster was advanced to trainmaster. Mr. DeWitt resigned from the Chicago, Burlington & Quincy Railroad to become superintendent of the Missouri & North Arkansas Railway at Eureka Springs, Ark. He remained with this company at Eureka Springs for two years and then became trainmaster of the Missouri-Pacific Railroad at Hoisington, Kan. He resigned from the Missouri-Pacific Railroad to become superintendent of the Ft. Dodge, Des Moines & Southern Railroad.

Mr. Timothy S. Williams, who was recently elected president of the Brooklyn (N. Y.) Rapid Transit Company to succeed Mr. Edwin Winter, resigned, was born in Ithaca,



T. S. Williams

N. Y., and was graduated from Cornell University in 1884. Immediately after graduating from college Mr. Williams accepted a position with the *New York Commercial Advertiser* as reporter and subsequently served that paper as Albany correspondent, city editor, Washington correspondent and editorial writer. While in Albany Mr. Williams frequently interviewed David Bennett Hill, who later was Governor of New York. Mr. Hill was a particularly difficult man to please in

the matter of an interview, and he is reported to have said that Mr. Williams was the only newspaper correspondent who always reported him correctly. As a result of the acquaintance which sprang up between Mr. Hill and Mr. Williams Mr. Williams while acting as Washington correspondent of the *Commercial Advertiser* was tendered the position of secretary to Mr. Hill and accepted the post. He served under Mr. Hill until Roswell P. Flower became Governor and remained with the latter as his private secretary. The interests of Governor Flower and his associates in the Brooklyn Rapid Transit Company at that time were very large, and Governor Flower induced Mr. Williams to accept the position of secretary of the Long Island Traction Company in 1895 and to become secretary and treasurer of the Brooklyn Heights Railroad a few months later. When the Brooklyn Rapid Transit Company was organized Mr. Williams was elected a director of the company and its secretary and treasurer. In 1900 he was elected first vice-president of the company and its constituents, and he continued in that capacity until recently, when he was elected president.

H. W. Wallace & Company, Chicago, Ill., consulting and operating engineers for the Fort Dodge, Des Moines & Southern Railroad, a 106-mile electrified steam railway, have placed a contract with the General Electric Company, Schenectady, N. Y., for re-insulating the trolley so that 1200-volt equipment may be used. The railway also is extending its transmission line five miles to East Fort Dodge to a new 1200-volt substation which will be located in an industrial district where much switching is necessary. This road has abandoned its steam locomotives and is handling both freight and passengers by electricity. Each of the two regular freight trains operating nightly between Des Moines and Fort Dodge ordinarily handles from 1000 to 1400 tons during a run.

Construction News

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

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

RECENT INCORPORATIONS

***Creston-Winterset Interurban Railway, Creston, Ia.**—Application for a charter has been made in Iowa by this company to build an electric railway from Creston to Des Moines. Capital stock, \$500,000.

***Northern Kentucky Street Railway, Newport, Ky.**—Application for a charter has been made in Kentucky by this company to build an electric railway in Newport. Capital stock, \$10,000. Incorporators: J. M. Dawson, Edward F. Kelly and Gwynne Dennis.

Southwestern Traction & Power Company, New Orleans, La.—Incorporated in Louisiana to build a 75-mile electric railway from New Iberia to Lafayette. Other lines from Morgan City to Jeanerette may also be built. Surveys will begin within a few weeks and it is said that financial arrangements have been made. Capital stock, \$1,500,000. F. W. Crosby, New Orleans, president. [E. R. J., July 23, '10.]

Kent Traction Company, Chestertown, Md.—Incorporated in Maryland to build a 10-mile electric railway to connect Tolchester, Fairlee, Georgetown and Chestertown with a branch to Rock Hall. Rights-of-way have been secured. Capital stock, \$200,000. Incorporators: Frederick G. Usilton, Wilbur W. Hubbard, J. H. Sidds, J. D. Bacchus, H. M. Kleinfelter, W. B. Copper and T. D. Bowers. [E. R. J., Feb. 13, '11.]

***Las Cruces Railway, Las Cruces, N. M.**—Application for a charter has been made in New Mexico by this company to construct and operate electric railways. Capital stock, \$10,000. Directors: Samuel T. Reynolds, El Paso; C. M. Haley, Isidoro Armijo and William P. Lapont, of Las Cruces.

***Niagara Frontier Railway, Niagara Falls, N. Y.**—Application will be made for a charter by this company at the next session of the Ontario Parliament to construct an electric railway from Fort Erie, Ont., to Niagara via Niagara Falls.

FRANCHISES

Los Angeles, Cal.—The Los Angeles-Pacific Railway has received a 45-year franchise from the Board of Supervisors to build its extension to connect Hollywood and Lankershim, via Cahuenga Pass.

Oakland, Cal.—The Oakland Traction Company has received a 30-year franchise from the City Council to extend its line over Hopkins Street in Oakland.

San Rafael, Cal.—George D. Shearer has asked the City Council for a 49-year franchise to build an electric railway over certain streets in San Rafael. [E. R. J., Dec. 10, '10.]

Suisun, Cal.—The Vallejo & Northern Railway will ask the Board of Trustees for a new franchise to build its railway along the deep water at Vallejo and over certain streets in Vallejo.

Waukegan, Ill.—The Waukegan, Rockford & Elgin Traction Company has asked the City Council for a franchise to build an extension in Waukegan. This will be part of an extension from Wilmot to Kenosha.

Winnipeg, Man.—The Winnipeg Electric Railway has received a franchise from the City Council to build several railway extensions in Winnipeg.

Lansing, Mich.—The Lansing & Suburban Traction Company has received a franchise from the City Council to build a double-track extension on Michigan Avenue in Lansing east from the Michigan Central Railroad track to the eastern limits of the city.

***Vicksburg, Miss.**—E. J. Bomer and S. B. Wilson have received a franchise from the Council to build an electric railway between Vicksburg and Walters, via the National Military Cemetery road.

West Caldwell, N. J.—The Pine Brook Electric Railway, Caldwell, has asked the Borough Council for a franchise to build its railway through West Caldwell. This proposed 12-mile electric railway will connect Pine Brook, Caldwell,

Fox Hill and Denville. S. W. Kerris, Pine Brook, is interested. [E. R. J., Jan. 21, '11.]

New York, N. Y.—The Hudson & Manhattan Railroad, New York, has received from the Public Service Commission an extension of time until June 15, 1913, for the construction of the Ninth Street extension of its line from Sixth Avenue to Fourth Avenue in New York.

Mechanicsburg, Pa.—The Valley Traction Company, Lemoyne, will ask the City Council for a new franchise to extend its railway through Mechanicsburg.

Chattanooga, Tenn.—C. E. James and associates have asked the City Council for a 40-year franchise to build five lines covering a large part of Chattanooga. Most of the lines are to be double tracked. [E. R. J., Jan. 28, '11.]

Beaumont, Tex.—The Beaumont Traction Company has filed an acceptance of the franchise recently granted it by the City Council for numerous improvements of its lines in Beaumont.

***Puyallup, Wash.**—R. S. Boyce and associates will ask the City Council for a franchise to build an electric railway in Puyallup. It is expected to extend this line to Tacoma. It is said that financial backing has been secured to build this railway.

Seattle, Wash.—The Seattle Electric Company will ask the Board of Public Works for a franchise to construct a double-track railway on Rainier Avenue in Seattle.

Vancouver, Wash.—The Mount Hood Railway & Power Company, Portland, has asked the City Council for a franchise to build a railway in Vancouver. A similar request will be made for franchises before the Councils of Washougal and Camas by this company.

TRACK AND ROADWAY

Alabama Traction Company, Montgomery, Ala.—This company has begun construction on its 25-mile electric railway in Montgomery. It is expected to extend it eventually to other towns. Charles G. Abercrombie, Montgomery, general manager. [E. R. J., Nov. 26, '10.]

Montgomery (Ala.) Traction Company.—This company expects to extend its railway from Skippack, the present terminus, to Schwenksville, Green Lane and Pennsburg, and other points along the Perkiomen Valley, instead of the North Penn Valley.

Nelson Electric Tramway Company, Ltd., Nelson, B. C.—At a special meeting of the directors of this company a report was presented showing that an additional \$10,000 is required to complete the railway in Nelson.

Fresno, Hanford & Summit Lake Interurban Railway, Fresno, Cal.—This company has secured contracts from the Hudson Counties Construction & Guaranty Trust Company, New York City, N. Y., by which \$1,250,000 has been obtained to build this 35-mile railway from Fresno to Kingsbury with a branch to Sanger. Construction will begin within 30 days. W. D. Mitchell, secretary. [E. R. J., Nov. 26, '10.]

Pacific Electric Railway, Los Angeles, Cal.—This company completed and placed in operation on Feb. 11 the 7-mile extension of its Los Angeles-Covina line to San Dimas.

Oakland & Antioch Railway, Oakland, Cal.—This company completed and placed in operation on Feb. 4 its extension between Concord and Bay Point. This railway will eventually connect Oakland, Concord Bay Point, Walnut Creek, Lafayette and Martinez.

Vallejo, Benicia & Napa Valley Railroad, Napa, Cal.—It is said that this company has let the contract for building an extension from Vallejo to Kellogg to connect there with the Santa Rosa & Clear Lake Railroad.

Grand Junction & Grand River Valley Railway, Grand Junction, Col.—A 13-mile extension from Grand Junction to Palisades will be built by this company during the present year.

***Hartford, Conn.**—Burton D. Potter, Hamden, has made arrangements for the incorporation of a company which contemplates the building of an inclined railway from the base to the top of Sleeping Giant in Mt. Carmel.

***Atlanta, Ga.**—J. D. Little, W. P. Andrews, J. Aldredge, Chas. Glover and others are organizing a company to build

an electric railway from Buckhead to the new Brookhaven Club, via the Peachtree Road, in Atlanta.

Columbus (Ga.) Electric Railway.—This company is extending its lines above Columbus. In addition the company is to erect overhead ground wires from Columbus to Goar Rock. This will require about 11,000 lb. of wiring. Other improvements are being contemplated.

Chicago, Ottawa & Peoria Railway Company, La Salle, Ill.—Construction will shortly be begun on the Joliet extension of this 90-mile road. The new work will include the construction of 22 miles of interurban railway from the eastern terminus of the present line at Morris to Joliet, and will include considerable street track in Joliet. The Joliet city work will cover unoccupied streets on which franchises were granted to the Joliet & Southern Traction Company. These franchises are now the property of the Chicago, Ottawa & Peoria Railway. The new extension of the Chicago, Ottawa & Peoria Railway will connect Princeton, La Salle, Ottawa, Peru, Streator and Morris with Joliet and its many routes of travel to Chicago. Also it will complete another link in the McKinley Syndicate's proposed high-speed electric railway between Chicago and St. Louis.

Taylorville Railway, Light, Heat & Power Company, Taylorville, Ill.—About three miles of new track will be built by this company in Taylorville during the present year.

Evansville, Ind.—It is reported that the Southern Railway is considering plans for electrifying its branch from Evansville to Rockport, Ind., via Jasper and Hamilton. Steam locomotives will be used for freight service as before. It is stated that the company will take over and electrify a small line from Huntingburg to Ferdinand, Ind., and extend it to St. Meinrad.

Gary & Southern Traction Company, Gary, Ind.—A 12-mile extension will be built by this company from Gary to Crown Point during 1911.

Capital Circuit Traction Company, Indianapolis, Ind.—It is announced that contracts are about to be let by this company for the grading work between Danville and Lebanon. This company proposes to construct an electric railway 146 miles long, belting Indianapolis and passing through seven counties and 14 incorporated towns. Hoover Hollon, general manager. [E. R. J., Jan. 29, '10.]

Chicago, South Bend & Northern Indiana Railway, South Bend, Ind.—This company has decided to spend \$75,000 for the double tracking of several lines in South Bend. Frank B. Cutshall, South Bend, general manager.

Iola, Kan.—D. H. Siggins, president of the Union Traction Company, Independence, J. J. Jones and associates have projected an interurban railway through Neosho, Allen and adjoining counties and connecting Chanute, Humboldt and Iola.

Wichita Railroad & Light Company, Wichita, Kan.—This company will build an eight-mile extension from Sedwick to Newton during 1911.

Annapolis, Md.—Robert Moss, Annapolis, and associates are interested in a plan to construct a 50-mile electric railway from Annapolis to Drum Point. It is said that 48 miles of this route, from Millersville to Drum Point, have been graded by the old Drum Point Railroad Company and may be sold to a new corporation.

Boston (Mass.) Elevated Railway.—Plans are being made by this company to double-track 32 miles of its line from Fargo Street, South Boston, along Summer Street, connecting the South Station with city points. A. L. Plympton, Boston, chief engineer.

Plymouth & Sandwich Street Railway, Manomet, Mass.—This company has begun the construction of its 14-mile extension to connect Fresh Pond, Cedarville, Sagamore, Sagamore Beach and Sandwich.

Duluth (Minn.) Street Railway.—This company will spend \$100,000 in improving its service during the present year.

Brooklyn (N. Y.) Rapid Transit.—This company will build about three miles of new track in Brooklyn during 1911.

Buffalo & Lake Erie Traction Company, Buffalo, N. Y.—It is stated that this company is making preparations to extend its tracks easterly from Fredonia to Sheridan early this spring. C. A. Alderman, chief engineer.

Kingston (N. Y.) Consolidated Railroad.—During 1911 this company will construct three miles of new track in Kingston.

Dayton & Troy Electric Railway, Dayton, Ohio.—This company will spend \$150,000 this spring on improvements which will include the installation of a high-tension line and the completion of the double-tracking of its railway.

United Electric Company, Dennison, Ohio.—About two miles of track will be built by this company from Uhrichsville to Dennison during this year.

Enid Interurban Traction Company, North Enid, Okla.—This company will extend its line six miles from Enid to North Enid and East Enid during the year.

Joliette & Lake Colonization Railway, Ottawa, Ont.—This company, which was recently incorporated to build a railway from Joliette, Que., to Montreal, states that the line will be operated by steam. [E. R. J., Feb. 11, '11.]

Peterborough (Ont.) Radial Railway.—This company will build a two-mile extension in Peterborough during the present year.

Philadelphia (Pa.) Rapid Transit.—This company has completed and placed in operation its new line between Philadelphia and Chester via the subway from Jupiter Street and Market Street.

West Penn Railways, Pittsburgh, Pa.—This company has plans now under way for building eight extensions to its lines. Steps looking toward financing the work were taken when the company authorized \$25,000,000 worth of bonds. A network of electric railways is planned to run through Fayette and Westmoreland Counties and extending into Washington and Allegheny Counties.

Chambersburg, Greencastle & Waynesboro Street Railway, Waynesboro, Pa.—About three miles of track will be constructed by this company from Pen Mar to Blue Ridge during the present year. Grading has been completed.

Nashville-Gallatin Interurban Railway, Gallatin, Tenn.—This company will begin on May 1 construction work on its proposed 30-mile interurban line between Nashville and Gallatin. Surveyors are now at work mapping out the route from Maplewood to Gallatin. [E. R. J., Jan. 21, '11.]

Jonesboro, Tenn.—Plans are being considered in Jonesboro to issue \$50,000 of bonds to provide funds to construct an electric railway from Jonesboro to Johnson City.

Nashville, Tenn.—Thomas P. Calhoun, Nashville, who is promoting the construction of a line from Nashville to Nolensville, reports that its construction is now practically assured. It is understood that it will be built by the Tennessee Rapid Transit Company. If the line is built citizens will provide for the construction of extensions.

Northern Texas Traction Company, Dallas, Tex.—It is reported that this company will build two extensions of its railway, one from Dallas to Terrell and the other from Dallas to Waxahachie.

Elkins (W. Va.) Electric Railway.—About six miles of track will be built by this company from Roaring Creek Junction to Bellington during this year.

Princeton (W. Va.) Power Company.—This company advises that it has now in operation about one and one-half miles of track between East Princeton and West Princeton. It operates two cars and furnishes power for lighting purposes. Capital stock authorized, \$50,000. Officers: S. J. Evans, president, general manager and purchasing agent; R. W. Reynolds, vice-president; L. H. Perkins, secretary, and M. Gleason, chief engineer, all of Princeton.

Chicago, Howard & Geneva Railway, Walworth, Wis.—This company will build a 10-mile extension from Walworth to Delavan under the name of Marengo, Havard & Northern Railway during 1911.

SHOPS AND BUILDINGS

Chicago, Ottawa & Peoria Railway, Ottawa, Ill.—This company will build a new paint shop near the car house being erected just west of Ottawa. The structure will be 40 ft. x 100 ft. There will be two repair pits, each 162 ft. in length. The northeast corner of the building will be three stories in height. This part will be 40 ft. x 24 ft. The tool room will be on the first floor; the second will be for drafting and the third for engineering. The build-

ing will be covered by a monitor roof 240 ft. in length. The walls of the building will be on a solid rock foundation. The Joliet Bridge & Iron Company has the sub-contract for the steel work. The cost is estimated to be about \$50,000.

Indiana Union Traction Company, Anderson, Ind.—It is stated that this company will build a new passenger and freight terminal station on West Washington Street in Winchester. The structure will be of brick and stone and will contain a waiting room and offices.

Lexington & Interurban Railway, Lexington, Ky.—This company contemplates the expenditure of nearly \$1,000,000 on improvements during 1911. Among them will be the erection of passenger and freight stations in towns reached by the interurban lines.

Boston & Northern Street Railway, Boston, Mass.—A new car house has been opened by this company in Wakefield on its Wakefield-Reading division. The structure is 240 ft. x 120 ft., and will be entered by 8 tracks from the Boston, Lowell and Lawrence lines. It will accommodate 50 cars and is equipped with a sprinkler system.

Richmond & Henrico Railway, Richmond, Va.—This company will construct a car house near the National Cemetery Road in Richmond. The structure will be of brick and reinforced concrete construction. The cost is estimated to be about \$15,000.

POWER HOUSES AND SUBSTATIONS

British Columbia Electric Railway, Vancouver, B. C.—This company has placed in operation an additional unit at the steam auxiliary plant in Vancouver. The new unit is a turbo-generator similar to the two units installed some months ago. It is of about 3000 hp and raises the capacity of the steam plant one-third.

Winnipeg (Man.) Electric Railway.—This company has awarded the contract for the equipment of its 17,000-hp power station to the Canadian General Electric Company. The generator will be driven by Curtis turbines and the equipment will be installed in four units of 3000 kw each.

Public Service Railway, Newark, N. J.—E. M. Waldron Company, Newark, has been awarded the contract for mason and other work on the new power house to be erected by the Public Service Railway in Perth Amboy. The iron and steel work will be done by Payne Brothers, Inc. The structure will be 180 ft. x 112 ft. and its highest point will be 100 ft. The exterior of the building will be of terra cotta and faced brick, the interior of vitrified brick. There will be two chimneys and large-capacity coal bunkers.

London (Ont.) Street Railway.—This company has decided to build steam power plant and abandon the proposals for the use of hydroelectric power from Niagara. C. B. King, general manager.

Portland Railway, Light & Power Company, Portland, Ore.—Contracts for the construction of the third and largest of all the power plants on the Clackamas River will be awarded by this company in a few days. The structure will be located on the Clackamas River three miles above the present one in operation and will have a capacity of 40,000 hp.

Charleston Consolidated Railway, Gas & Electric Company, Charleston, S. C.—This company has purchased from the General Electric Company one complete switchboard for its new power house in Charleston.

Laredo Electric & Railway Company, Laredo, Tex.—This company has purchased one 400-hp Keeler boiler from the Keeler Boiler Company.

Gray's Harbor Railway & Light Company, Aberdeen, Wash.—It is reported that this company will enlarge its power plant at Aberdeen. J. S. Thornton, purchasing agent.

Chippewa Valley Railway, Light & Power Company, Eau Claire, Wis.—This company is considering plans for improving its power dam at Cedar Falls.

Milwaukee Electric Railway & Light Company, Milwaukee, Wis.—The power house and terminals of this company at Racine are being enlarged. Two 125-kw (G.E.) low-pressure units and one 1500-hp turbo-generator are being installed.

Manufactures & Supplies

ROLLING STOCK

Wausau (Wis.) Street Railroad is in the market for one passenger car.

City Railway, Dayton, O., has ordered 10 pay-as-you-enter cars from the Cincinnati Car Company.

Philadelphia (Pa.) Rapid Transit Company, it is reported, will purchase from 150 to 250 new pay-within cars.

New York, Westchester & Boston Railway, New York, N. Y., is in the market for 60 all-steel 70-ft. passenger cars.

Springfield (Mass.) Street Railway has ordered 50 type CP-27 air brake compressors from the General Electric Company.

United Railways, San Francisco, Cal., has ordered 80 type CP-27 air brake compressors from the General Electric Company.

Great Falls Electric Properties, Butte, Mont., has placed an order with the American Car Company for eight double-truck cars seating 40 persons each.

Nahant & Lynn Street Railway, Lynn, Mass., has ordered two 30-ft. 8-in. motor car bodies and four Brill 27 G. E.-1 trucks from The J. G. Brill Company.

Long Island Railroad, New York, N. Y., noted in the ELECTRIC RAILWAY JOURNAL of Feb. 4, 1911, as being in the market for 50 steel motor cars, 30 steel passenger cars, 10 steel parlor cars, 5 steel combination baggage and mail cars and 5 steel passenger and baggage cars, has placed an order for these cars with the American Car & Foundry Company.

Central Pennsylvania Traction Company, Harrisburg, Pa., noted in the ELECTRIC RAILWAY JOURNAL of Jan. 21, 1911, as having ordered eight cars from The J. G. Brill Company, has specified the following details for the six pay-within cars:

Seating capacity.....	32	Heaters	Consolidated
Length of body.....	25 ft.	Headlights	Wheeler
Over vestibule.....	37 ft.	Journal boxes.....	Brill
Width over sills....	7 ft. 7 in.	Motors	2-G.E.-216
Over posts at belt..	8 ft. 2 in.	Push button signal,	
Body	wood	Consolidated	
Interior trim.....	cherry	Registers.....	Inter. double
Underframe	wood	Roofs	Monitor
Air brakes.....	National	Sanders.....	Natl. Brake & Elec.
Bumpers....	Brill angle iron	Sash fixtures.....	Brill
Car trimmings.....	bronze	Seats	Brill
Couplers	Brill	Seating material.....	cane
Curtain fixtures....	Natl. bal.	Springs	Brill
Curtain material....	Pantasote	Trucks.....	Brill 39-E
Gongs	Dedenda	Ventilators	Brill
Hand brakes.....	A. & W.	Wheels	National

TRADE NOTES

American Bridge Company, New York, N. Y., has appointed R. W. Bailey general manager of sales, to succeed James A. Huston, resigned.

Ideal Concrete Machinery Company, South Bend, Ind., has opened an office in the Old Colony Building, Chicago, Ill., under the management of H. I. Purcell.

Ackley Brake Company, New York, N. Y., has made arrangements for the manufacture in England of the Ackley adjustable brake for sale in the United Kingdom.

The Asbestos Protected Metal Company, Canton, Mass., has established a Western office at 613 Fisher Building, Chicago. Wilmot W. Burritt is in charge of this office and territory as district manager.

American Manufacturers' Export Association, New York, N. Y., has been formed to promote foreign trade. H. T. Wills, secretary of the National Tariff Commission Association, has been elected secretary of the new organization.

Siler-Pettit Manufacturing Company, Ft. Wayne, Ind., has been incorporated by E. E. Siler, B. F. Pettit and George S. Hanford, with a capital stock of \$250,000. This company will manufacture and sell oil pumps, tanks and distributing systems.

Orenstein-Arthur Koppel Company, Pittsburgh, Pa., manufacturer of industrial and portable railways, is planning to double the capacity of its plant at Koppel, Pa. The changes will mean that more than twice the number of men will be employed compared with the present force. Koppel is a few miles from Beaver Falls, Pa., and is in the Pittsburgh district.

Westinghouse Electric & Manufacturing Company, Pittsburgh, Pa., has received orders from the Isthmian Canal Commission for two 75-kw motor-generator sets, with a switchboard for the control of each, from the Cia Beneficiadora de Pachuca de Mexico for one 915-kva, three-phase, oil-insulated, self-cooling auto-transformer, and through Slowan, Thomas & Company, for the Chinese government, for two 150-kw, direct-current generators and a nine-panel switchboard.

Frank Koester, formerly with the Interborough Rapid Transit (Subway) Construction Company, J. G. White & Company, the Guggenheim Exploration Company and the American Smelting & Refining Company, all of New York, has recently opened an office at 115 Broadway, New York, as consulting engineer. Mr. Koester is author of "Steam Electric Power Plants" and "Hydroelectric Developments and Engineering."

Cincinnati Car Company, Cincinnati, Ohio, has applied to the Secretary of State of Ohio for permission to increase its capital stock from \$100,000 to \$1,500,000. It is intended to erect new shops and storage houses at Mitchell Avenue and the Baltimore & Ohio Railroad, on ground adjoining the present plant. Improvements and extensions will also be made to the present plant. The new stock will be taken by the Cincinnati Traction Company, of which the car company is a subsidiary.

Whipple Supply Company, New York, N. Y., will equip the 41 new cars of the Denver City Tramway with light-weight rolled steel section Hedley anti-climbers. This company also reports that the Terre Haute, Indianapolis & Eastern Traction Company will adopt the Hedley anti-climber in the form of a combination anti-climber and emergency pocket coupler. An order has been received from the Public Service Railway for 15 sets of Hedley anti-climber drawhead steel castings.

Pressed Steel Car Company, Pittsburgh, Pa., has made public its report for the fiscal year ended Dec. 31, 1910. Gross sales for the year amounted to \$27,977,978. The net profits derived from all sources were \$1,568,366. Of this amount the sum of \$1,417,496 was derived from works operation and the balance from dividends on securities, excess receipts, interest and discounts and other sources. During the year the company expended \$304,302 on improvements and betterments, about equally divided between the McKee's Rocks and the Allegheny works. F. N. Hoffstot, president of the company, wrote on Feb. 15, 1911, that the McKee's Rocks plant was still in full operation, but the Allegheny plant was closed down in November, 1910. Advantage was being taken, however, of the shut-down period to make certain changes and improvements necessitated by the abandonment of a lease held for some years on adjoining property at Allegheny. The Pressed Steel Car Company now owns all the capital stock of the Western Steel Car & Foundry Company, having acquired the minority interest during the year. Plans are being made for the installation of an up-to-date plant at the works of the Western Steel Car & Foundry Company capable of building any type of car at the rate of 50 per day. The Central Car Wheel Company, the property of which the Pressed Steel Car Company has leased, will be able, it is expected, fully to meet the demands for cast-iron wheels.

ADVERTISING LITERATURE

Arthur D. Little, Inc., Boston, Mass., chemists and engineers, have published Professional Paper No. 4, on "The Basis of Quality in Paper."

Warren Webster & Company, Camden, N. J., have published a booklet containing a number of views of buildings heated by the Webster system.

Electric Service Supplies Company, Philadelphia, Pa., has issued a booklet describing and containing views of various types of Peerless armature tools and car barn appliances.

Cheatham Electric Switching Device Company, Louisville, Ky., has issued Catalog No. 10 describing the "Cheatham Switch." The pamphlet also contains several testimonials from users of these switches.

Westinghouse Electric & Manufacturing Company, Pittsburgh, Pa., has recently issued Circular No. 1165 on Westinghouse "Fan Motors." In this connection two smaller folders, Nos. 4100 and 4101, have been issued, one dealing with d.c. and the other with a.c. fan motors.

Niles Car & Manufacturing Company, Cleveland, Ohio, has published a catalog illustrating and describing cars built for the Twin City Light & Traction Company, the Oklahoma Railway, Cleveland, Painesville & Ashtabula Railroad, Aurora, Elgin & Chicago Railway and a number of others. The catalog also contains specifications and illustrations of the trucks used by this company, which are manufactured by the Baldwin Locomotive Works.

Stone & Webster Engineering Corporation, Boston, Mass., has reprinted in pamphlet form the description of the Seattle-Everett Railway which was printed in the *ELECTRIC RAILWAY JOURNAL* for Aug. 27, 1910, page 320. The pamphlet is a very artistic and handsome example of the printer's art. The cover is decorated with a reproduction of a map of the Puget Sound district, showing the bow formed by the connecting interurban railways in this district. The pamphlet is illustrated by several fine half-tone engravings which are printed on plate paper and loosely fastened on the pages. These illustrations give an excellent idea of the high class construction employed on the line and some of the difficulties encountered in building through virgin timber country.

NEW PUBLICATIONS

Lignes Electriques Aeriennes. By Ph. Girardet. Paris: Gauthier-Villars, 1910. 181 pages, illus. Price, 5 francs.

This book is a recent addition to the engineering library issued by the publishers and contains a clear and detailed discussion of the matters which concern the erecting engineer of an electrical transmission line. Probably the chapters of most interest to the American readers are those relating to the manufacture and erection of concrete poles. These have come into extensive use in Europe because of their durability and low maintenance, compared with wooden and steel poles. They possess considerable elasticity and when built as described will withstand a strain at the top of the pole as high as 3,300 lb., although with a concrete pole line it is usual to use built-up steel towers at sharp turns. Spans of 330 ft. with concrete poles are not uncommon. One principal objection to the pole is its weight. A pole 40 ft. long weighs about 2900 lbs. This makes transportation expensive. Hence concrete poles are usually built on the ground in lots of 150 to 180, that is, so as to supply a pole line for a distance of 6 miles or 3 miles in each direction from the point of manufacture. The volume describes in detail the different methods of constructing these poles and attaching the cross arms. Other chapters cover the subjects of the preliminary survey of a transmission line, staking out the line, franchises, preparation for the work of construction and the work of construction itself. In the appendix a copy of the French law on transmission lines is given.

Lignes Electriques Souterraines. By Ph. Girardet and W. Dubi. Paris: Gauthier-Villars, 1910. 207 pages, illus. Price, 5 francs.

This book is a companion volume to the one just reviewed, and is devoted to the methods of constructing underground transmission lines, testing them and searching for faults. It is given up almost entirely to the method of laying the cables in trenches without conduits, a practice very extensively employed in France and increasing in use. The cables are protected outside of the lead covering with a layer of jute, then with a steel band covering, and finally with an exterior layer of tar or asphalt. They are laid in trenches 20 in. to 40 in. in depth, between two layers of sand, each from 4 in. to 6 in. in thickness. To protect them from the blow of a pick or shovel from a workman in the street, a layer of bricks or tile or strips of galvanized wire netting is laid over them. The volume describes in detail the methods of laying these cables, type of junction boxes employed, methods of testing and repairing, etc.