

# Electric Railway Journal

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### OPERATIVE AGREEMENTS IN CHICAGO

The abandonment or postponement of the plan for the consolidation of the elevated and surface railways of Chicago into a single unit for purposes of operation will probably be followed by an operating agreement between the surface companies alone and a separate operating agreement between the elevated companies alone. These should result in an improvement in both surface and elevated operation. The revised plan made necessary by the failure of the first negotiations to reach a satisfactory conclusion does not provide for any operating agreements between the two classes of roads such as would have been made if the proposed general merger had been worked out on lines which would have justified the companies in introducing more of the changes desired by the city. The steps that are now under discussion in Chicago will meet only part of the requirements for the betterment of transportation facilities. The remainder are dependent upon the adoption of a satisfactory financial and operating plan for the creation of a terminal subway in the downtown district and for such interchange agreements between the surface and elevated lines as will promote the use of the elevated lines for long-distance travel and will tend to restrict the shorter-distance haul to the slower-moving surface cars.

### BLOCK SIGNALS ON INDIANA LINES

The placing of contracts completing the installation of block signals planned for this year on the interurban lines in the State of Indiana affords an evidence of the willingness of railway managements to go to any reasonable length in meeting the wishes of the public. Every one of the lines in question has only recently been subjected to heavy loss from the disastrous floods in the Middle West, and in several cases the properties suffered material physical damage in addition to the losses in revenue due to the general suspension of service. There was,

in fact, every reason for a postponement of the work of signal installation until the railways had, at least in part, recovered from the effect of the disaster. The interurban mileage in Indiana is at present about 1500, and of this only 71 miles, or 5 per cent, is equipped with signals. Yet the projected installations will raise this approximately 300 miles, 20 per cent of the total interurban mileage, within a year. When it is remembered that approximately 40 per cent of the steam railroad mileage in the country has been equipped with block signals during the many years which have elapsed since automatic signals were first introduced, an idea is obtained of the relative magnitude of the work which the Indiana lines have undertaken.

### EFFECT OF STRIKE LOSSES IN DULUTH

The decrease in total revenue of the Duluth-Superior Traction Company shown by the abstract of the annual report for the calendar year 1912 published in the issue of the ELECTRIC RAILWAY JOURNAL for April 5, 1913, is the first reduction in gross reported by this company for any year since 1904. It is, of course, the result of the strike which lasted on the property for two months last fall. The decrease amounted to 4.6 per cent. It compared with gains in 1911 of 4 per cent, in 1910 of 9.4 per cent and in 1909 of 11.8 per cent. This, however, represents only the effect due to the traffic that the company did not receive because of the strike conditions. Another outcome of the strike was a charge against the surplus of \$75,561 on account of extraordinary strike expenditures. Without regard to this extraordinary charge, the ordinary operations of the year, after provision for operating expenses, taxes, interest and the regular dividends of 4 per cent on the preferred stock and 5 per cent on the common stock, showed a deficit of \$1,224. After the appropriation of \$70,114 for depreciation the net result was a deficit of \$71,338. The average gain per year in gross revenue in the three years preceding 1912 was 8.4 per cent. If there had been a gain in 1912 at the small rate of only 4 per cent, as in 1911, it would have made a difference of \$97,000 in gross revenue. Strike losses are a very serious charge on the revenues and prosperity of a company, and, while they arrest its progress, they are only a part of a larger and more general loss in curtailment of buying power and inconvenience that is suffered by the entire community.

### CONVENIENCE AS AN ASSET TO RAILWAYS

Experience indicates that where a public utility service is rendered in units which are purchasable by small sums of money its successful development depends to a large degree upon the factor of convenience. The introduction of shorter car intervals always tends to increase the amount of riding in cities and large towns, simply be-

cause it cuts down the total time required to journey between local points. Much of the business which has been captured in the suburbs from steam railroads by cars making much slower time than that of the trains has been due to the frequency of the electric service. And in like manner the sale of metal or other tickets encourages riding just as the possession of a book of drug store coupons tends to stimulate the use of the soda fountain far beyond its normal patronage with cold cash. On the lines of the Union Street Railway, New Bedford, Mass., a rather novel extension of this idea is in force in the weekly sale of nickels by representatives of the company to local merchants along its routes in the various centers of population in the long and narrow territory served. Every Friday the nickel distributors make the rounds of the stores, and by means of an even exchange of money a large volume of these useful coins is put in circulation immediately before the large industrial population of the city completes its week's work and begins its pay day shopping. The nickels are given freely in change and are in so much demand by the public that on a recent Friday when a certain large store was overlooked in the distribution immediate and forceful complaints were forthcoming. The company is convinced that the scheme has been an important factor in stimulating riding upon its lines, and the cost of endeavoring to flood the town with nickels is trifling in proportion to the benefits of the increased traffic.

#### **NO CORPORATION TAX FOR LEASED COMPANIES**

According to Attorney-General McReynolds, the refusal of the United States Supreme Court on May 12 to order a rehearing in the case of the Minehill & Schuylkill Haven Railroad involving the collection of the federal corporation tax has left a large loophole in the law. It is claimed that under the decision in this case, given by the Supreme Court on April 7, it will be possible for any corporation to escape payment of the corporation tax merely through leasing its plant to a holding company.

The facts in the Minehill case are briefly that the company, a Pennsylvania railroad corporation, leased its road in 1896 to the Philadelphia & Reading Railway for 999 years, at a certain annual rental, with the right to assume control and operation at the expiration of this time or upon violation of the lease. Since that time the Reading company has operated the line, but the Minehill company has kept its corporate existence, maintained its organization through annual elections, received rental, interest and dividends from a "contingent" fund, and paid annual salaries and dividends. Suit was recently brought by the Minehill company against the collector of internal revenue for the purpose of securing a refund of the corporation tax for 1908 and 1909, on the ground that it was not "doing business" within the meaning of the act as it was not fulfilling the prime object of its incorporation, the maintenance and operation of its road. It was the lessee which was "doing business" and it should pay the tax instead of the lessor. Objection was made that taxation would be escaped altogether, inasmuch as the Reading company could deduct from its gross income the amount of the rental paid, but the court held that it was the intention of Congress to have the lessee

make such deductions whether the lessor was within the scheme of taxation or not.

The government now fears that not only railroads but all other corporations may avoid taxation under the corporation tax law by simply leasing their plants and even that stockholders of a corporation may organize a holding and operating company, leasing its plant to the latter at a figure so high as to leave no taxable income, while, at the same time, the lessee corporation would not be taxable on its income. If this view is correct, the government is confronted not only with the necessity of refunding many thousands of dollars collected but also with the prospect of finding a constantly decreasing number of taxable companies.

As the decision of the court was simply upon the construction of the existing statute its effect will continue only so long as Congress retains that statute as law. The income tax provision of the Underwood tariff bill is based upon a different principle. The tax is one on incomes and is not restricted by any technical distinctions in regard to "doing business" but is specifically assessable against incomes from every source, with a few minor exceptions. Hence lessor companies, whether "in business" or not, will find themselves within the taxable limits.

#### **MONEY CANNOT BE PAID OUT IF IT IS NOT IN HAND**

The talk of Mayor Fitzgerald of Boston in reference to the conditions confronting the Boston Elevated Railway, which was published in our issue of April 26, is a rare example of courage on the part of a public man. Mayor Fitzgerald, speaking with evident sympathy for the trainmen, asked how they are going to get an increase in pay if the company is not in a position to pay out any more money. This is in marked contrast to the policy-inspired utterance of a member of a recent board of arbitration, who said that if the evidence showed that the men ought to receive more wages, they should have them without regard to the question of whether or not the companies concerned were able to pay dividends.

The issue involved in questions of this nature and its effect on the company, the employees and the public are very clear. A company is entitled to protect its legitimate investments, to pay a fair rate of interest thereon, and to pay its men such wages and render such service to the public as it can with consistent regard for all of the factors. It is not the duty of the company to meet demands of employees for increased pay by foregoing the payment of an interest return on the reasonable capital value of the property. It is the capital outlay which creates the property that furnishes work for the employees and, in connection with that work, provides service for the public. While capital is sometimes lost or does not earn a fair rate of interest, a large going company is impelled continually to add new facilities because of the demands of increased population for more transportation; and if the initial capital is lost, or if a fair rate of interest is not paid thereon, the additional capital to enable the company to meet the demands for further facilities will not be forthcoming.

This question is particularly acute just at the present time in Massachusetts, because the Board of Railroad Commissioners of that State has tried under the law to safeguard the interest of the public by directing the various transportation companies to issue new stock at the prices which it prescribed. These prices in the case of the Boston Elevated Railway, as well as in that of the Boston & Maine Railroad, both of whose securities have declined seriously, were fixed by the commission on different occasions at prices far above those now prevailing. When the State prescribes the prices at which the stockholders of corporations must buy the stock, if they buy it at all, does it not assume a moral responsibility in the matter? It says in effect that the stock is worth the price it names, and its pronouncement goes far to establish a market for the securities and to enable the company to secure the capital it needs for additions and betterments. Having helped in the sale of the securities at a high price, the State should not then wash its hands of the matter and let the securities and the owners save themselves if they can.

The thing that the public does not seem to understand is that the cost of wages is part of the cost of operation. The cost of operation must be met from the earnings, and if the earnings are not large enough to meet this cost, the enterprise must undergo reorganization, the rate of fare must be increased or the cost of operation must be reduced. If a company is protecting its capital investment and paying a fair rate of dividend—such a moderate rate for instance as the Boston Elevated Railway has maintained—and if it does no more than this, then it cannot meet an increase in wages and continue as a going corporation without a reduction in the quality or amount of the service or a reduction in the rate of dividends. A prosperous community owes the public utilities that serve it a fair rate of return and full protection.

#### **MUNICIPAL RESPONSIBILITY FOR STRIKE LOSSES**

In the United States District Court at Newark, N. J., last week a jury rendered a verdict which, if sustained, may prove of great importance to electric railways and others who suffer losses as a result of strikes. It concerns the liability of the municipalities for losses caused by failure to afford protection against strike damage and to enable business to be carried on. This case arose out of the strike of express-wagon drivers in 1910. The Wells-Fargo Express Company sought to prove and apparently convinced the jury that it had suffered \$300 damages to its property and \$43,000 loss of business as a result of the failure of the city to provide adequate police protection. These amounts were awarded by the jury to the company in spite of the fact that the city introduced evidence to show that it had added to the police force and had sought diligently to protect the property of the company and to enable it to carry on its business. It was shown by the company, however, that whatever may have been the efforts of the city, as a matter of fact adequate protection was not given.

As a part of the company's case evidence was introduced to the effect that its own employees were not on strike and that the interference with its business was incident to strikes declared against other express companies. How

much influence this had on the jury does not appear, but it seems to have little or nothing to do with the scope or application of the verdict, for the reason that in nearly all labor troubles the employer can show that a relatively small number of employees actually participate in the declaration of a strike, the majority being prevented from working by fear or intimidation which would not exist if thorough protection were given to men who desire to work.

There have been prior cases where railways and others have recovered against municipalities for failure to provide protection in case of strikes, but the disposition is usually to avoid litigation of this kind for the reason apparently that the utility company hesitates to antagonize a community by damage suits. More often the company that suffers loss by reason of inadequate protection talks about a damage suit and then after the trouble is over pockets its loss and forgets its threat to make the city pay. In the case of the nine weeks' strike in Philadelphia \$2,225,000 was charged to strike losses, a very large part of which could presumably have been recovered from the city, but no effort was made to make the city pay for its inadequate protection of property or for the business losses that proper policing would have made impossible, although these losses amounted to as much as \$50,000 a day for weeks at a time. No doubt, sound reasoning directed the Philadelphia company's course in this instance, but it is evident that if street railways would make it a rule to collect damages in every case where it could be shown that losses are due to inadequate police protection a few substantial verdicts would have the effect of making city administrations more active in protecting property and enabling companies to operate their lines. It too often happens that a city administration for political reasons is slow to take radical measures to suppress lawlessness, but if it were shown that such timidity is likely to cost a city heavily in dollars and cents, there would be a far stronger public demand than now exists for the kind of protection and policing that enables a company to run its cars in spite of the objections of strikers. If the fear of damages to be collected did not influence the mayor, it might at least bring some sense of responsibility to the representative citizens and taxpayers.

Too often when violence follows a strike the city authorities overlook their duties and the law-abiding citizens' responsibilities in the matter. Their first thought seems to be that of peace at any price, whereas the matter about which they should be most concerned is the maintenance of law and order. After these are established there is plenty of time to consider the merits of the controversy.

This seems to have been the sober second thought of the Mayor of Cincinnati this week. The strike there was accompanied with the usual acts of intimidation and destruction and even of murder. The only remedy for such a condition which suggested itself to the Mayor was "arbitration"! But after the company accepted this, the employees attempted to make important changes in the conditions under which they would arbitrate, and the city authorities have now been compelled to face the question which was really paramount from the first, that is, whether law or disorder is to rule. To this, of course, there can be but one answer.

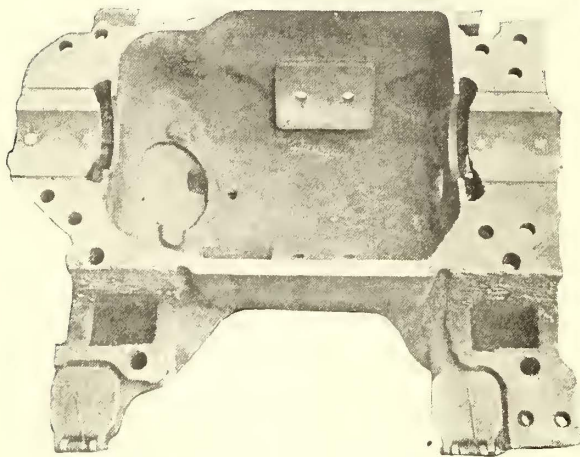
# Electric-Arc Welding and Other Features of the San Francisco Shops

Particulars Are Given of the Different Kinds of Shop Repair Work Undertaken in San Francisco with the Electric Arc—A List of Savings Made Is Included—Novel Equipment for the Paint Shop Is Also Described

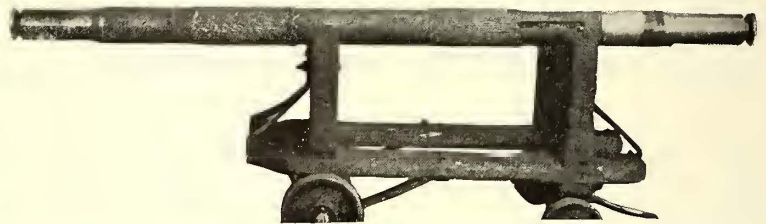
One of the features of the large shops of the United Railroads of San Francisco is the system of using the electric arc for a great many classes of electric railway repairs. The method was developed in the shops of the company by J. M. Yount, master mechanic; Edward S. Branaman, general foreman, and Thomas Finigan, purchasing agent. A portable welding outfit embodying the ideas of these inventors has since been placed on the market with their approval, and the system is used in a number of shops. It is employed, however, more extensively in the shops of the United Railroads property, the place of its origin, than in any other place, and it has there a greater range of service. An account was published in the issue of this paper for Jan. 11, 1913, describing some of the work done in the San

a building-up process; that is to say, layers of metal are fused on until it is brought up to a size somewhat larger than the diameter desired, after which it is put into a lathe and turned to the proper size. If the axle is 5 in. or 5½ in. in diameter, the bearing seats are first turned down to 4⅝ in. A steel shell made up of four formed segments of machine steel, 5/16 in. x 3¼ in. x 9 in., with four ¾-in. holes in each, is then placed around the axle, securely welded and turned down to the required diameter. The time required to weld the axle and finish it in the lathe varies according to the size, but neither method takes more than three hours to complete, and the average is much less.

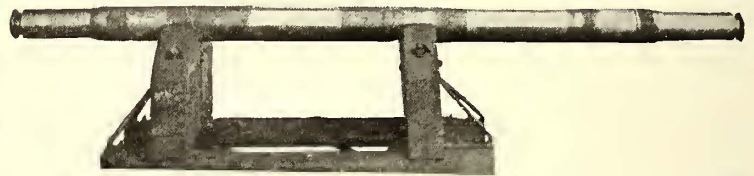
A very interesting and original method of making brake



San Francisco Shops—Motor Casing with Bearing Housings Renewed by Arc Welding



San Francisco Shops—Worn Axle Built Up in Motor-Bearing Seats



San Francisco Shops—The Same Axle Ready for Use After Metal Added to Worn Portions by Welding Has Been Machined

Francisco shops, but the greater part of that article was devoted to the methods employed for rehabilitating special work in that city. The shop uses are, however, much wider in their scope, and in the accompanying article an effort has been made to summarize some of the work accomplished as well as to give a statement of the cost of the operation applied to car parts and the net saving. These figures are taken from the shop reports of actual work done.

## PROCESS OF WELDING

The process of welding is so simple that it does not require an expert to handle it. In fact, any ordinary laborer can be instructed in its use after a few hours' practice. The welding apparatus consists of a portable rheostat from which is attached an insulated wire, to the end of which is fastened a piece of brass 1 in. thick and 1½ in. in diameter. Through the center of this brass is a ⅜-in. hole, through which is placed the 3/16-in. or 5/16-in. steel electrode, a set screw being inserted to hold the electrode in place. A piece of split fiber 26 in. long is placed over the wire to act as a handle and for the protection of the operator. The operator wears a leather hood with colored glass lenses for the protection of the eyes.

In welding axles two methods are employed, the size determining which one should be used. When the motor-bearing seats of an axle are worn too much for further service and the diameter is 4¼ in. or under, it undergoes

pins is employed. A piece of tool steel 1 in. in diameter is cut to desired lengths, generally 3 in., and a hole for the cotter key is drilled in one end. The head for the pin is made by winding a piece of Norway iron ¼ in. in diameter into a coil with an inside diameter of 1 in. This coil is then cut up into rings, and a ring is slipped over one end of the pin and welded; it is then hardened. The welding requires less than twenty seconds for each pin, and the total cost, including material and labor, is 4 cents per pin.

The welder has also been found to be very useful for cutting holes in various materials and in burning out rivets. It is particularly adaptable for burning holes in manganese steel. The following may be quoted as an illustration of what can be done. A core oven was to be made out of an old boiler ⅜ in. x 48 in. in diameter and 7 ft. long. There were to be two door openings 14 in. x 24 in. and one 24 in. x 24 in. The welder was put on the job, and in six hours the door openings and forty-eight rivets were burned out and three sets of hinges were welded on. Any other method of doing this work would have cost many times the amount charged to the welder.

In burning out metal a 1-in. round carbon point is used. Frames of various kinds made up of angles, channels and I-beams have been welded together without the use of a single bolt and in no case has there been a question as to the durability of the weld.

The system is being used daily for building extensions

on car bottoms. Some of the older types of cars are being remodeled into prepayment cars, and as it is necessary to add about 30 in. to each platform, a 1-in. x 5-in. iron is laid against the web of each platform sill and welded to the top and bottom flange, no bolts being used. The average cost of welding is \$2.16 per car.

Broken bumper irons, step hangers and various other things that were formerly sent to the blacksmith shop for repair are now sent to the welding room, and the time required for welding any one article is seldom more than one hour and oftener only a matter of a few minutes.

A great saving has been made on brakeheads and brake hangers. Formerly there was only one thing to do with a badly worn brakehead or hanger, and that was to send it to the scrap heap and replace it with a new one. Now, no matter how badly worn, it is possible to build it up and put it in a condition that will give it the same service value as a new one, at a fraction of its original cost.

SAVINGS EFFECTED

It is impossible to give an exact statement of the total saving made on car equipment by the company during the year 1912. In some instances the welder has added years to the life of certain equipment, owing to its being an old type and the impossibility of renewing certain parts that are no longer manufactured. Another important thing is the saving in time. A truck or motor frame can be removed from a car, repaired and replaced in a few hours, whereas if a new part was to be installed it might mean that the car would have to remain out of service for a number of days. It is even possible to do certain minor



San Francisco Shops—Brakehead with Worn Socket Before and After Repair

repairs with the apparatus in place. For instance, controller backs are welded in place, and even the connections are not removed.

The shop report for nine months shows that 234 car axles, twenty-nine truck frames, forty-seven compressor armature shafts, ninety-eight motor armature shafts and 630 gear cases have been welded, besides the many other parts given in the appended list.

If it should be assumed to have been necessary to replace each of the pieces just mentioned with a new part, then the net saving on these parts for nine months would have been \$10,251.14. If to this sum is added the saving made on the other pieces given in the list, the value of the welder as a factor in the economy of the shop is evident.

The accompanying illustrations show how some of the work is done. The view of the interior of a motor casing shows a GE-90 motor frame on which the axle-bearing housings have become worn too much for further service. In this case sufficient metal was built on to allow it to be finished to standard size. Heretofore the shop practice with worn-out motor frames was to bore out housings and put in a special liner. It should be noted that in welding motor frames no shells are used. The metal is put in layers of sufficient thickness to allow finishing to standard size. The actual time required for welding a frame of this kind is three and a half hours.

The second view shows a 4-in. axle that has undergone

the building-up process. The actual time required for welding this axle was two and three-quarters hours. The third view shows the same axle after it has been finished to standard size.

One view on this page shows a Brill brakehead that ordinarily would have been scrapped, as the sockets are worn 1/4 in. oblong and the face and ends of head are worn entirely away, making it unfit for further service. The second

REPORT OF ELECTRIC WELDING SHOP OF THE UNITED RAILROADS, SHOWING 101 DIFFERENT ARTICLES REPAIRED DURING THE YEAR 1912

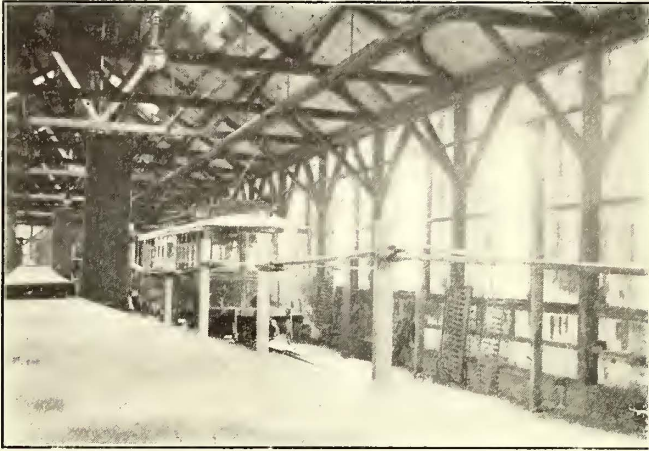
|   | Cost of Welding and Machine Work | Cost of New Part | Net Saving |
|---|----------------------------------|------------------|------------|
| AA-1 armature shaft without removing from core... | \$1.60                           | \$4.00           | \$2.40     |
| AA-4 armature shaft without removing from core... | 1.70                             | 4.72             | 3.02       |
| AA-4 armature shaft without removing from core... | 1.70                             | 4.50             | 2.80       |
| GE-1000 armature shaft without removing from core | 1.97                             | 8.25             | 6.26       |
| GE-80 armature shaft without removing from core   | 1.97                             | 14.78            | 12.81      |
| GE-90 armature shaft without removing from core   | 1.97                             | 14.78            | 12.81      |
| GE-57 armature shaft without removing from core   | 1.97                             | 10.90            | 8.93       |
| GE-73 armature shaft without removing from core   | 1.97                             | 15.13            | 13.16      |
| 10-in. brake cylinder                             | .....                            | .....            | .....      |
| U. S. No. 6 trolley base                          | 0.06                             | .....            | .....      |
| Register pins                                     | 0.01                             | .....            | .....      |
| Gong pins   | 0.01                             | .....            | .....      |
| GE-1000 armature cap, CE-14717                    | 0.22                             | 3.07             | 2.85       |
| GE-1000 armature cap, PE-14718                    | 0.22                             | 3.28             | 3.06       |
| GE-1000 axle cap, CE-14719                        | 0.22                             | 3.45             | 3.23       |
| GE-1000 axle cap, PE-14720                        | 0.22                             | 3.51             | 3.29       |
| Controller casting                                | 0.04                             | .....            | .....      |
| Side Bearings:                                    |                                  |                  |            |
| GE-90 armature-bearing cap, CE-40377              | 0.27                             | 6.07             | 5.80       |
| GE-90 armature-bearing cap, PE-40378              | 0.27                             | 6.07             | 5.80       |
| GE-90 axle-bearing cap, CE-40379                  | 0.27                             | 6.07             | 5.80       |
| GE-90 axle-bearing cap, PE-40380                  | 0.27                             | 6.07             | 5.80       |
| Car wheels  | 0.15                             | .....            | .....      |
| Bolsters  | 0.28                             | .....            | .....      |
| Dead lever guides                                 | 0.09                             | .....            | .....      |
| Gear case GE-1000 top, DE-15                      | 0.48                             | 6.80             | 5.32       |
| Gear case GE-1000 top, DE-6                       | 0.48                             | 7.30             | 6.82       |
| Gear case GE-1000 bottom, 71111-B                 | 0.44                             | 6.80             | 6.36       |
| Gear case GE-1000 bottom, 41044                   | 0.48                             | 7.30             | 6.82       |
| Dolly box   | 0.12                             | .....            | .....      |
| Wrench  | 0.06                             | .....            | .....      |
| Saw frames  | 0.62                             | .....            | .....      |
| GE-90, seventy-one-tooth, four-bolt split gear    | 0.27                             | .....            | .....      |
| Brill 27-G truck side frame                       | 0.72                             | 44.40            | 43.68      |
| Center plates, Brill 27 GE-2                      | 0.08                             | .....            | .....      |
| Brake levers                                      | 0.06                             | .....            | .....      |
| Gear case GE-90 top, DL-37945                     | 0.58                             | 18.32            | 17.74      |
| Gear case GE-90 bottom, 215322-B                  | 0.58                             | 18.32            | 17.24      |
| Pinion puller                                     | 0.36                             | .....            | .....      |
| Crane   | 0.48                             | .....            | .....      |
| Brake hangers                                     | 0.11                             | .....            | .....      |
| Circle bars                                       | 0.18                             | .....            | .....      |
| Controller castings                               | 0.04                             | .....            | .....      |
| Check plates for journal box                      | 0.07                             | .....            | .....      |
| Brakeheads  | 0.06                             | 1.15             | 1.09       |
| Brake pins  | 0.04                             | .....            | .....      |
| Car sign brackets                                 | 0.03                             | .....            | .....      |
| Grip crotches                                     | 0.72                             | 10.00            | 9.28       |
| Bumper irons                                      | 0.36                             | .....            | .....      |
| Step hanger                                       | 0.18                             | .....            | .....      |
| Tool holder for Armstrong planer                  | 0.18                             | 3.50             | 3.32       |
| Controller backs                                  | 0.08                             | .....            | .....      |
| GE-1000 motor frame                               | 0.96                             | 11.50            | 10.54      |
| Axle cap, GE-90                                   | 0.18                             | .....            | .....      |
| Burning hole for smokestack in furnace            | 0.36                             | .....            | .....      |
| Brakebeams  | 0.24                             | .....            | .....      |
| Peckham 14-B truck side frame                     | 0.90                             | 46.98            | 46.08      |
| Armature truck                                    | 2.22                             | .....            | .....      |
| Grip center plates                                | 1.25                             | .....            | .....      |
| Tools for boring machine                          | 0.12                             | .....            | .....      |
| Piston for steam hammer                           | 1.19                             | .....            | .....      |
| End frame for C. G. rheostat                      | 0.18                             | .....            | .....      |
| Gear case GE-80 top, DL-37921                     | 0.58                             | .....            | .....      |
| Gear case GE-80 bottom, 121664-B                  | 0.58                             | .....            | .....      |
| Switch cover                                      | 0.18                             | .....            | .....      |
| Drawhead  | 0.06                             | .....            | .....      |
| Brass foundry core oven                           | 2.52                             | .....            | .....      |
| Bench vise  | 0.08                             | .....            | .....      |
| Door sheave frame                                 | 0.04                             | .....            | .....      |
| Journal boxes, Brill 27-G-2                       | 0.30                             | .....            | .....      |
| Gate handles                                      | 0.04                             | .....            | .....      |
| Steady rest for lathe                             | 0.12                             | .....            | .....      |
| Gear case GE-57 top, DE-3                         | 0.54                             | 7.65             | 7.11       |
| Gear case GE-57 bottom, 88420-H                   | 0.54                             | 7.65             | 7.11       |
| Fender braces                                     | 0.06                             | .....            | .....      |
| Gear rods on seat                                 | 0.03                             | .....            | .....      |
| Guard rail  | 0.04                             | .....            | .....      |
| Draft rigging for work car                        | 1.08                             | .....            | .....      |
| Motor support hanger                              | 0.12                             | .....            | .....      |
| Brake connection rods                             | 0.06                             | .....            | .....      |
| Gear case GE-73 top, DL-37940                     | 0.58                             | 21.27            | 20.59      |
| Gear case GE-73 bottom                            | 0.58                             | .....            | .....      |
| GE-90 motor frames                                | 2.88                             | 16.80            | 13.92      |
| Machinist hammer                                  | 0.05                             | .....            | .....      |
| Frame for rail grinder                            | 2.88                             | .....            | .....      |

view shows the head after it has been to the welding room. It is now ready to be put back in service and will probably last as long as a new head. The time required for welding this head was twenty minutes.

A list of the various pieces welded, with a tabulated statement showing the cost of welding, the cost of a new part and the net saving, is included. It should be noted

that the cost of welding also includes the cost of machine work necessary to put the piece welded in condition for service. The cost of machine work in some cases exceeds the cost of welding.

The welding room is 20 ft. x 20 ft. and contains a table and a bench with a vise for holding small pieces while be-



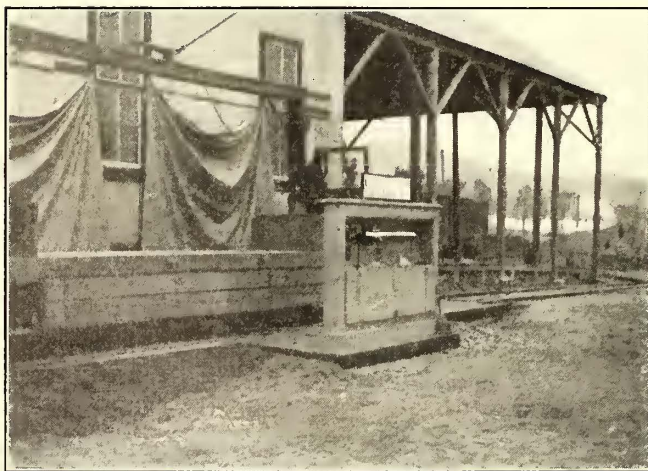
San Francisco Shops—Interior of Paint Shop with Adjustable Scaffolding

ing welded. Axles are placed between two centers and rotated by hand as the operator desires. A traveling hoist is used for handling axles and motor frames. Three portable welding outfits are in use, and three men are kept at work continually, two doing the heavy work and the other attending to the welding of small pieces and doing various jobs that require moving the welder to different parts of the shop.

Formerly the scrap heap occupied a very large space at the back end of the shop, but since the advent of the welder things have changed. The scrap heap has greatly decreased in size, and the output of the welding room has steadily increased. The once familiar phrase "Send it to the scrap heap" has been changed, in most cases, to "Send it to the welding room."

#### SAND BLASTING

Practically all apparatus for repair is exposed to a sand blast before being welded or undergoing any other repairs.



San Francisco Shops—Track Scales

The process is very simple and quick and rapidly cleans the grease and dirt from the part and makes the application of the welding process or other repair a simple matter. The sand blast is used even on such parts as commutators and the boards of controllers and thoroughly cleans the metal parts without affecting the insulation. Trucks also are

sandblasted when brought into the truck shop for overhauling. This not only removes all grease, dirt, old paint, etc., but it also gives a clean surface of metal so that it is easy for an inspector to see whether there are any mechanical defects in the truck which need attention.

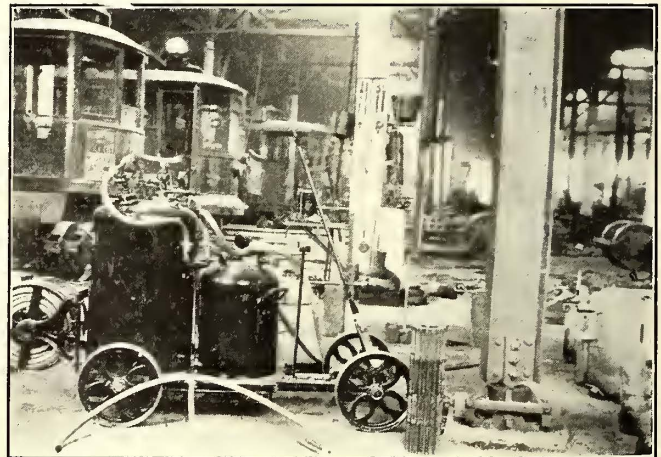
#### PORTABLE HEATER

Although the new process of electric welding is probably the most interesting feature of the shops of the United Railroads of San Francisco, the mechanical department has developed a number of other interesting appliances. One of these is a portable electric heater used for small forging processes on truck parts or other bulky material which it would be inconvenient to heat in an ordinary oil furnace.

The portable heater, as shown in the illustration, contains two tanks for the fuel, which is crude oil and distillate in equal portions. These are supplied under pressure to the burner, which is a blow-torch and receives its air from the compressed-air pipes which are carried about the shops.

#### THE PAINT SHOP

The company has recently completed a paint shop adjoining the repair shop. This shop has a capacity of twelve cars, and as the painting process requires six days, this allows two cars to pass through the shop per day. The paint shop is open at both ends so that the progress of the car through the shop is continuous. An interesting feat-



San Francisco Shops—Portable Burner

ure of this shop is the adjustable painter's scaffold, shown in an accompanying engraving. This scaffold runs the entire length of the shops.

The construction includes the use of permanent wooden posts, 4 in. x 6 in. and spaced 13 ft. apart. They are set in concrete to a depth of 8 in. The adjustable rack with which each post is equipped, for holding the painters' boards, is simply a strap-iron bracket made up of 1½-in. x ¾-in. iron, looped around the post and with an arm on its outer end on which the painters' boards rest. The angle at which this bracket hangs on the pole provides sufficient friction so that it will hold its position on the post under the weight of the painters. As it is simply looped around the post, its height, of course, may easily be adjusted. Steel cars, of which the company has a few, are sandblasted before being painted.

#### TRACK SCALES

Adjoining the shop is a set of car scales of 100 tons capacity which have recently been installed. These scales allow the company not only to ascertain the weight of any car on the system when desired, but the scales are also used for weighing all scrap taken from the shops. To get the weight of the scrap, the scrap car is first weighed empty and then loaded. The scales are also used for ascertaining the weight of ballast which is used on track construction.

## DEDICATION OF TRANSPORTATION BUILDINGS FOR THE UNIVERSITY OF ILLINOIS

The new Transportation Building and the Locomotive and Mining Laboratories of the University of Illinois have been formally dedicated to the use of the student body at Urbana, Ill., with appropriate exercises extending over May 8 and May 9. As a part of the program a number of speakers prominent in the railway industry made addresses, among them being Samuel Insull, president of the Commonwealth Edison Company.

Mr. Insull talked of the influence the engineering art has had upon civilization and emphasized the innumerable advantages it has brought and the luxuries it has afforded. He predicted that the next quarter of a century would see such a development of the electrical field as to be of huge benefit to every community in the country and recalled that the first time he saw a street electrically lighted was in 1878, when the embankment of the Thames in London was illuminated by arc lamps, the invention of a Russian. In conclusion Mr. Insull cited the benefits that modern invention has contributed to mankind, contending that Lord Macaulay was right when he said that the science of "abridging distance" could do more for humanity than almost any other force.

W. B. McKinley, president Illinois Traction System, spoke of the development of electric railways and the necessity for ample capital to carry on the work. The readiness with which money lent itself to any new project depended, he said, upon the prospects held out to investors for a reasonable return upon their investment and for the future stability of the enterprise. It was also necessary to secure legislation to enable electric railways to be built and operated and also to prevent unfair legislation when the road was in actual operation, under which they might be unable to maintain the proper relations between earnings and expenses, resulting in loss to investors and, as a consequence, inferior service. Mr. McKinley called attention to the problems of securing trained operating executives and of obtaining efficient and loyal men in the ranks. On the Illinois Traction System, he said, the best of feeling was maintained among the 3500 employees by keeping them in close touch with the management, and the courteous manners, splendid appearance, loyalty and interest of the men was one of the most noticeable features of that railway. The management assisted the men in their clubs, mutual aid societies, hospital associations and death benefit association. The affairs of these organizations were conducted by trustees elected by the men and they had proved successful in every way.

In conclusion, he stated that one of the most important problems of the electric railway was to operate the property in a manner that would return a reasonable profit to the company and give the maximum convenience and service to the public, as the relations existing between an electric railway and the communities which it served were very close. On these relations depended in great measure the success of the undertaking. The frequency of the service, the convenience to the farmer in having the cars stop at highway crossings, the familiarity which the patrons have with the organization from daily use, all made the electric line a home institution, and all it asked was fair play, honest criticism and the opportunity to assure good service by making a reasonable profit.

Albert Reichman, president of the Western Society of Engineers, spoke on the technical society as an aid to education, saying in part that the training an engineer received at a university was so broad that to a limited degree it enabled him to commence the practice of almost any branch of his profession, but that in order to excel an engineer must choose a comparatively narrow field of activity in which he can become thoroughly proficient. An engineer in

order to be successful must associate with his fellow engineers and he could best secure such association through the technical societies. The meeting of engineers under conditions where all were on a common footing fostered a spirit of kindly co-operation and helpfulness which bound them together and made each of greater usefulness to the others. It was only by wide co-operation that the best advancement could be made in engineering science and achievement. In the technical societies the various steps of mechanical development were depicted both from the practical and the theoretical standpoint. They afforded the engineer an opportunity to supplement his own knowledge by the experience of other engineers, to present to the world what he himself had accomplished and to receive criticisms and suggestions from his fellow-men.

The changing character of railroad problems was made the subject of an address by T. H. Goodnow, president Western Railway Club, who outlined the progress which had been made in the science of railroading during the past quarter of a century. He spoke of the vastly increased size and strength of the freight and passenger cars of the present day and of the great improvement in equipment.

In an address entitled "Vocational Education in Connection with Railroad Work," W. L. Park, vice-president Illinois Central Railroad, said that the men in the shops and on the track carrying heavy responsibilities for the maintenance of safety and economy desired to learn and to advance and should be assisted and encouraged. It was even difficult at times to obtain certain information with all the advantages of a great city or college, and this gave some conception, vague though it might be, of the conditions surrounding an operator, towerman or section foreman isolated almost as if on a lonely island by the environment of his occupation. The management on the Illinois Central had, he said, taken cognizance of these conditions, and that there was much eager demand for greater knowledge was evidenced by the thousands who were availing themselves of the opportunities presented by the company's educational bureau. That this raised the plane of intelligence there could be no doubt, and that it enabled some who had the requisite talent and genius to advance was evidenced by the recorded results.

## CHICAGO ELECTRIFICATION COMMITTEE

Joseph Holdom, chairman of the committee of investigation of smoke abatement and electrification of railway terminals of the Chicago Association of Commerce, presented a report on the progress of that committee at the hearing May 12 of the committee on railway terminals of the City Council. He referred first to the electrification plans and said that the territory being considered was divided into two zones, one comprising 191 sq. miles within the city and the other 237.6 sq. miles without the city. In these two zones there were 4501 miles of track, of which 2819 miles were within the city limits. Electrification by the third-rail system and by the overhead contact system was being considered. Consideration was also being given to the use of self-contained units such as storage battery locomotives and locomotives operated by internal-combustion engines. The committee was also making an exhaustive study of the subject of the abatement of smoke, not only from locomotives but from the stacks of stationary power plants, and a large number of observations had been made. He hoped the report would be completed by January, 1914.

At the same meeting Howard Elting, president of the Chicago Association of Commerce, said that the work of the committee up to the present time had cost \$250,000. This expense was being borne by the railroads, although they exercised no control over the course of the investigation other than that they had four representatives among the seventeen members of the committee.

# Convention of the Oklahoma Association

This Convention Was Held at Oklahoma City, May 6-8—Abstracts Are Presented of the Papers of Most Interest to Electric Railway Companies.

The second annual convention of the Gas, Electric & Street Railway Association of Oklahoma was held at Oklahoma City on May 6-8. The delegates were welcomed to the city by Mayor Grant, and following his speech the annual address of the president was delivered by F. W. Caldwell, of Shawnee. Abstracts of the papers of special interest to electric railway companies are published herewith.

## LIGHTNING ARRESTERS

Four main types of lightning arresters were described in detail with accompanying slides by W. B. Clayton, of the Southwest General Electric Company, after a short talk on the characteristics of natural and artificial lightning phenomena. In the compression chamber multi-gap arrester the gaps were inclosed in an air-tight chamber, and when the discharge took place the gases formed in the gaps were compressed, which aided the rectifying action in promptly extinguishing the arc. With the graded shunt resistance multi-gap arrester, the temperature of the arc was reduced by selecting metals of low boiling point for the cylinders and by limiting the value of the current by means of resistance. In an arrester of this kind the gaps would take care of high-frequency discharges and the resistance with the small number of series gaps at the bottom would take care of low-frequency discharges. For systems employing 6600 volts or more the aluminum cell arresters were best adapted, having an action very similar to that of the safety valve on a boiler. Horn gaps of various types were useful on the very high voltages and were adaptable to use in connection with the aluminum cell type. In conclusion the author made a plea for further co-operation between power plant engineers and the designers of lightning arresters in order to enable the latter successfully to cope with necessary demands.

## LEGISLATION AFFECTING PUBLIC UTILITIES

An interesting treatment of the question of legislation affecting public utilities was given by H. V. Bozell, of the University of Oklahoma. In it he presented some of the basic ideas of legislation in general, the power of the State to legislate in connection with the business of public utilities, the causes of some of the recent legislation, the general class of legislation resulting from these causes, subsequent effects upon the utilities and the proper attitude of the utilities regarding this legislation in order to conserve their own best interests. Summed up in brief, the author was inclined to think that the gross abuse of privileges by a small number of monopolistic utilities during the early days was responsible for the passing of drastic laws which proved a burden to those utilities which had aimed to be fair as well as to the guilty ones. But he pointed out the present tendency to place the regulation of utilities in the hands of commissions to allow of their protecting the utilities' interests as well as those of the community. There had been a noticeable effort of late on the part of all utilities to make a special point of reducing the causes for complaints, and it was the author's belief that a continuation and extension of this policy, together with the proper publicity measures and co-operation with the public service commissions, would work to the advantage of the utilities. A point worthy of special note was the statement made that if privately owned utilities were to be subject to state regulation by commission municipally owned utilities should be subject to the same control.

## LIABILITY INSURANCE

Frank H. Ellis, underwriter of the Kansas Employers' Inter-insurers' Exchange and the Illinois Indemnity Exchange, read a paper on "Liability Insurance." He first

discussed the conditions which led to the passage of employees' compensation laws in different states and mentioned briefly the chief features of some of them. The Kansas law was the mildest of any in effect. In that State payments did not begin until after two weeks of disability, and they could extend for a period not greater than eight years. The Wisconsin and the Illinois laws were the most drastic. Payments in Wisconsin extended for fifteen years, and in Illinois for life, in case of total disability. He believed that compensation laws offered a greater temptation to malingering and defraud. Moreover, workmen were quick to realize that there is no need for particular haste in getting back to work. On the other hand, compensation laws should serve to reduce the amount of litigation. At all events, the system, in the opinion of the speaker, was here to stay.

A serious evil, however, was that extortionate rates were charged for liability insurance by insurance companies. This condition was due to the indifference and lack of information on the subject by the public. In fact, insurance methods had not kept step with economical management in other directions. The ordinary business man did not like to think about his insurance and he would leave it for someone else to do. Under clerks were often permitted to handle insurance involving hundreds of thousands of dollars when they would not be permitted to buy even a barrel of fuel oil on their own initiative. In no other business does the middleman so utterly dominate the situation. The casualty companies, for instance, were spending from 50 per cent to 65 per cent of their income for expenses and commissions. These were paid for by the insuring public.

There are in general three possible means of escape, briefly as follows: First, carrying one's own risk, or so-called self-insurance, which was only open to the very few comparatively, since only the few had a sufficient spread of risk to make a safe venture. State insurance was open to a number of objections, among which are the question of dishonesty in its administration and the flavor of paternalism. In mutual insurance there was a defect which might cause trouble in that it provided a partnership liability. On the other hand, reciprocal or inter-insurance eliminated this liability and could be conducted at one-half of the expense ratio of stock insurance.

Best's insurance reports of last year recognized seventy-three such organizations in fire and casualty insurance as going and successful concerns, and the saving accomplished averaged between 40 and 60 per cent per annum. Inter-insurance was recognized by the insurance departments of nearly all states, and in Kansas, Illinois, Minnesota and many other states reciprocal exchanges were under the supervision of the state insurance departments and were licensed much after the manner of the stock companies.

## PREVENTION OF ACCIDENTS

A paper on this subject was presented by George W. Knox, second vice-president and general manager Oklahoma Railway. He cited the principal measures taken by railway companies in the safety campaign as follows:

"Great care in selection of trainmen and thorough physical examinations with proper tests as to hearing and sight.

"Schools of instruction for trainmen with competent instructors and follow-up system of inspection work of new men until such time as they become thoroughly proficient; in some cases return of the trainmen to the school of instruction for further instruction if found necessary.

"Systematic efforts to retain trainmen in the service



through square dealing with them; establishment of benefit associations and pensions.

"Lectures to trainmen by the claim agent and operating officials on prevention of accidents; lectures often accompanied by stereopticon views, showing various types of actual accidents, also dangerous points on the lines, bad curves, bad thoroughfares, garage entrances, blind alleys, block lights, etc.

"Printed safety bulletins to employees issued monthly.

"Examination and instruction of new men by claim agent before they are permitted to go to work.

"Close communication between departments in relation to cause and prevention of accidents.

"Organization of safety committees.

"Reasonable inquiries by inspectors and others in charge of trainmen into their manner and habits of living, their observance of the laws of health and decency.

"Office accident charts known as 'bogies,' with curves showing daily all classes of accidents occurring, curves showing daily and cumulative accidents, curves showing cumulative and daily accident expense.

"Carhouse competitive safety charts, known as 'bogies.' These charts show daily and cumulative curves of accidents in each carhouse numerically. They are continually watched by trainmen and cause a friendly rivalry between the trainmen of the various lines.

"Folding or sliding gates on both ends of cars undoubtedly decrease step accidents, particularly after the trainmen have become accustomed to their use. Theoretically, apart from defects in car steps and landings, gates should eliminate all liability to step accidents, and they will do so, the committee believes, if the gates are handled by trainmen according to rules.

"Concise and intelligent advertising conspicuously printed in the public press calling attention to reasonable and proper methods of avoiding accidents, with cuts illustrating common types of accidents.

"Safety cards posted in public schools.

"Safety lectures in public and other schools, women's and other clubs, universities, business colleges, etc.

"Desk blotters distributed in offices and mailed with bills to company's customers with warnings against accidents printed thereon.

"Letters to vehicle owners on avoidance of accidents, also cuts illustrating various kinds of collisions posted in barns of vehicle owners.

"Warnings against accidents printed on back of transfers.

"Cuts on cards posted in cars showing right way to alight from car."

Mr. Knox then described the practice of his own company as follows:

"The Oklahoma Railway Company began its active campaign for the prevention of accidents and the promotion of safety during the latter part of the year 1911. With one full year of this campaign in operation, the results reflected may be noted in the comparison shown between 1911 and 1912 with respect to the company's accident account. The number of claims for 1912 was reduced over the year 1911 by 30 per cent and the total amount paid for releases was in excess of 50 per cent less for 1912 than for 1911.

"The total disbursements for the claim department expense, included in which are the salaries of that department's employees, lawyers' fees and office charges, were 2.86 per cent of the gross earnings of the road. This may be regarded as very moderate when it is known that that item usually runs from 5 to 7 per cent and has run with some properties as high as 18 per cent. It will therefore be noted that the number of accidents in 1912, as compared to 1911, was not alone materially decreased, but that they were of such a character as to permit of over a 50 per cent

reduction in the aggregate cost of the settlements which were made by the company.

"While it is felt that the plans and methods proposed and employed in the handling of the accident and safety problem have been splendidly devised and followed and the results therefrom are showing very satisfactorily, we are still groping about for means by which the many details may be so manipulated as to enable the better accomplishing of the much desired results, i. e., the absolute minimum—or a 'bogie' as some have put it—in the number of accidents and the highest possible attainment in the matter of safety. Now, there is no possible way of fully realizing this condition unless there be a world-wide movement of co-operation among all civilization."

#### OTHER BUSINESS

Following the presentation of the papers the annual business meeting was held. At this meeting the association voted to change the membership from personal to company, but also to leave a class for individual membership. The company members were divided into three classes, those in towns of 5000 or less, those in towns of 5000 to 10,000 and those in towns of more than 10,000 population. Manufacturing and wholesale commercial companies were made associate members of the one class, and retail commercial firms and contractors associate members of another class. The registration at the convention reached the unusually large total of 125.

The following officers were elected for the ensuing year: President, F. E. Bowman, Ada; first vice-president, Lincoln Beerbaum, Enid; second vice-president, George Knox, Oklahoma City; secretary and treasurer, H. V. Bozell, Norman. The executive committee will be composed of the president and H. S. Cooper, Weatherford; W. H. Bagley, Tulsa, and R. D. Long, Muskogee.

#### GRAPHICAL RECORD OF CAR ACCIDENTS

B. F. Boynton, claim agent Portland Railway, Light & Power Company, has adopted an ingenious method of graphically recording the different kinds of railway accidents which occur on that system. He has cut a map of the city into twenty equal sections and pasted each section upon a flat board so that it can be easily handled. Then whenever there is an accident he places a pin in the map at the point where the accident occurred. Pins with heads of different colors are used to designate different kinds of accidents as follows:

Black, collision with vehicle.

Pearl, collision with person.

Green, collision with auto.

Pale blue, collision with car.

Brown, car leaving track.

Amber, injury caused by presence of structure or other object near track.

Dark blue, alighting from moving car.

Coral, stationary car accident.

Plain, fell off car at curve.

Round gilt, premature starting of car.

Square gilt, falling in car.

White, boarding moving car.

In this way twelve different kinds of accidents can be indicated on the map, and the accumulation of pins of any one kind at any single point or at several points on the map calls attention to the desirability of looking into possible remedial measures at that place.

For convenience in office use the twenty map sections are kept in a case with a corresponding number of horizontal shelves, the shelves being far enough apart not to interfere with the vertical position of the pins which are stuck into the map. Mr. Boynton removes all pins at the beginning of each month but makes a tabulated record of their location for reference purposes.

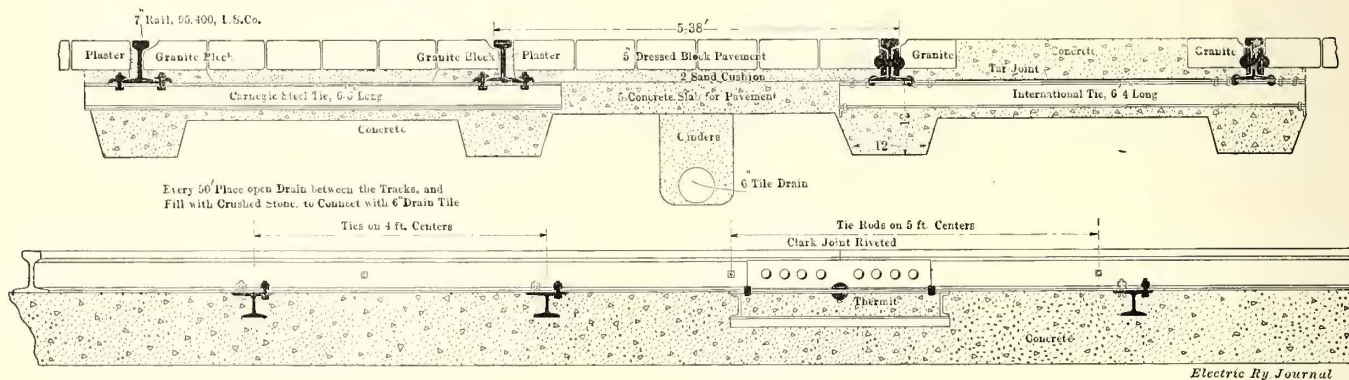
# Track Improvement in Cleveland

The Cleveland Railway Company Has Undertaken Extensive Rehabilitation of Its Permanent Way and Is Using for the New Track Steel Ties Set in Concrete Beams—A Brief Account of the Way Department's Equipment and Methods Is Included

With the maintenance-of-way department of the Cleveland Railway Company—well known for its originality in evolving new developments in track work, including the widely used Clark joint, which was turned over to the public without remuneration by its inventor, Charles H. Clark, engineer of maintenance of way—the present year will be an unusually active one. At least 20 miles of new track will be

separated by somewhat more than the length of the joint. These are joined by small angles riveted under the base at each end and by plates somewhat wider than the base of the rail riveted on top to carry the rails. The rail is clamped to the tie by special clamps held in place with wedges.

The ties are buried in a concrete slab which covers the full width of the track and is 5 in. thick. This is reinforced

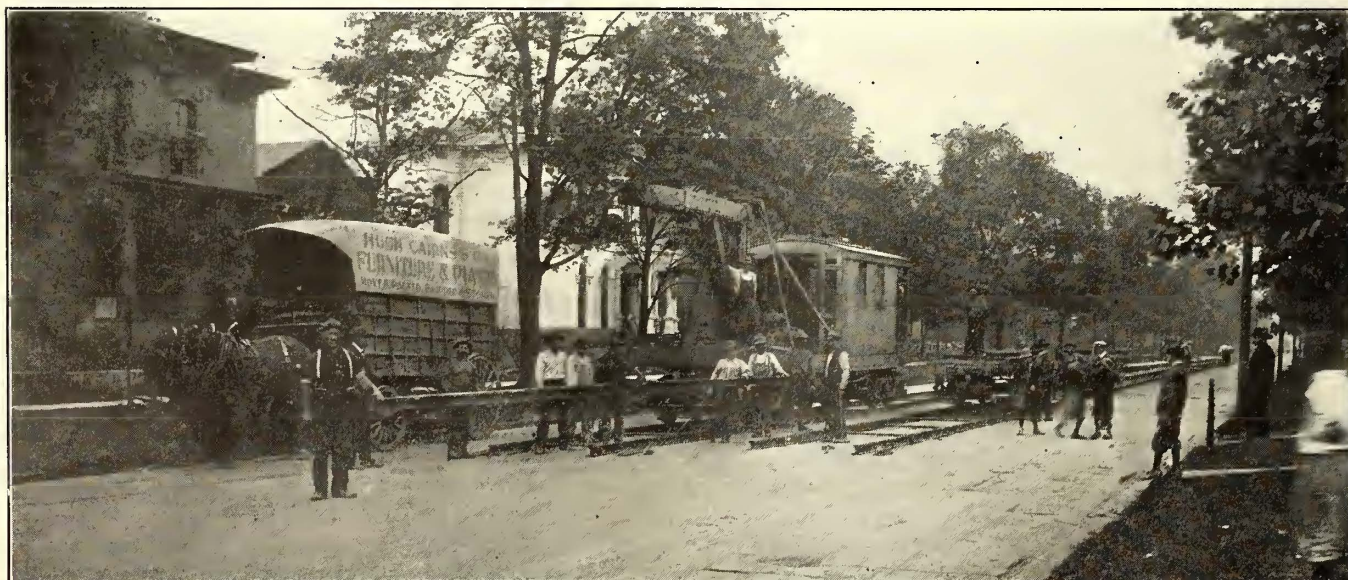


Cleveland Track—Cross-Section of Standard Construction

constructed, and this will involve the laying of 3600 tons of rail.

The construction for this year's standard track is shown in the accompanying illustration. T-rail will be used everywhere except on two bridges where there is wood-block pavement. The standard rail is 7 in. high and weighs 95 lb. per yd., laid on Carnegie and International steel ties spaced

under the rails by a concrete beam with sloping sides. The beam is 12 in. wide at the bottom and gives a total depth of concrete under the rails of 12 in., the composition of the concrete being one part of cement and six parts of washed gravel. Between the rails of each track a 2-in. sand cushion furnishes a base for the paving blocks where such are used, but in some constructions a granite concrete paving will be



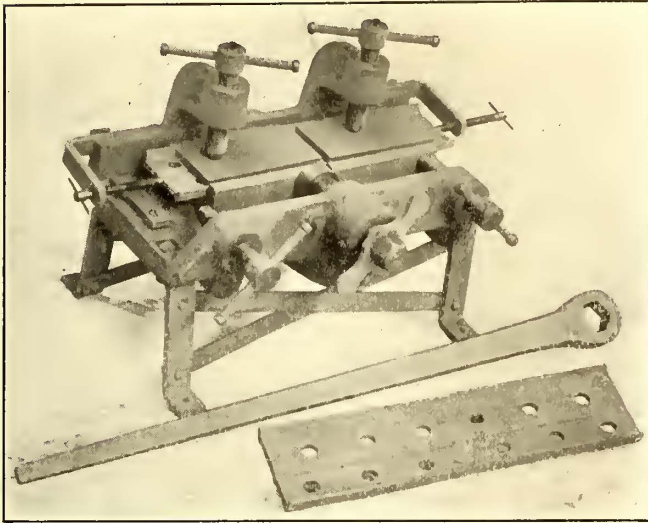
Cleveland Track—Laying Track on Street Surface for Temporary Route

on 4-ft. centers and attached to the ties by clips. Clark joints, supported on International joint ties, insure good mechanical support of the rail ends. The joint consists of long, heavy plates riveted to the sides of the rail with eight 1 1/16-in. nickel-steel rivets. The joint is mechanically and electrically bonded by a small mass of iron which is cast about the base by the Thermit process. The joint tie is an open frame made of two channels placed back to back and

used. This will be laid directly on the concrete base with a thin coating of tar or a thin layer of sand to keep the paving concrete from sticking to the concrete which forms the foundation. This granite concrete paving will cost \$2.03 per sq. yd. as compared with \$3.09 for the granite blocks and it is expected to give equally good satisfaction. When it wears out it will be broken up, crushed to small size and used again in making concrete. Wherever granite blocks

are used between rails, the blocks next to the rail which form the groove will be laid on a concrete base to insure permanence. The blocks next to the outside of the rail will be laid close against the head and will be grouted with a cement plaster filling.

In preparation for the season's activities ten new three-



Cleveland Track—Splice Plate Bender

compartment, 5-yd. dump cars have been ordered from the Orenstein-Arthur Koppel Company. Four of these will be equipped with motors and operating cabs and four Westinghouse 307 motors will be used on each. The remaining six dump cars will be trailers. A Brown hoist has also been ordered and an electric shovel which has been very useful in

asphalt paving and spaced with tie rods. Temporary special work for connecting the temporary track with cross streets was made up of standard pieces and Kerwin cross-overs. The only effect of this construction on the asphalt was to make shallow ruts in it. In laying the rails a derrick car was utilized, and the work was thus done very rapidly.

A very useful device designed in the way department of the company is a bending machine for putting an offset in joint plates. Such an offset permits the lining up of the surfaces of low joints and the same bender can be used for a wide variety of plates and offsets. In operation the plate to be bent is placed in a jig made of two parts, one stationary, the other movable. By means of set screws and filler blocks, the ends are pressed into the jig after set screws have been adjusted at the ends to bring the plate to its proper position. The movable part of the jig is then pressed sideways to give the desired offset by means of a heavy set screw and wrench.

In addition to the new construction described above, the railway company is now constructing a new inspection and storage yard located on St. Clair Street, several miles east of the business section of the city. Approximately \$80,000 will be expended in track work and grading, the latter costing one fourth of this amount. The yard has been laid out with special care to avoid interferences among car movements and to do this with a minimum amount of special work. The yard provides storage room for at least 165 cars.

The project of the Allgemeine Elektrizitäts-Gesellschaft to build a rapid transit line in Berlin between Gesundbrunnen and Rixdorf (Neuköln) has now been placed before the Minister of Public Works for the Prussian royal consent, which will be the final approval required. The new railway will be partly high level and partly below the street surface. The concession is for a period of ninety years, although the municipal authorities will have the right



Cleveland Track—Temporary Track Laid on Surface of Pavement to Permit Routing Cars Around a Closed Section of Street

grading the site of a new car yard will be pressed into service for street excavation. Three concrete mixers mounted upon cars will be utilized in laying the track foundation.

An interesting temporary track construction used recently is shown in the accompanying illustrations. On account of the excavation of an important street for the installation of a sewer the railway track had to be moved to an adjacent parallel street. The rails were laid directly upon the

of acquisition at the expiration of thirty years and at succeeding terms of five years. It is estimated that the construction of the railway will occupy seven years, and the expenditure is computed at \$21,250,000. One-half of the capital will be raised by the issue of common and preferred shares in a new company eventually to be formed, and the other half will be provided by a loan the interest on which will be guaranteed by the municipal authorities.

# Convention of Arkansas Association

The Papers Most Closely Concerning Electric Railway Interests Read at This Meeting Were on Public Relations and Recent Legislation.

The sixth annual convention of the Arkansas Association of Public Utility Operators was held at Little Rock, Ark., May 5 to 7, inclusive. Owing to the late arrival of a number of the members, the first session was not held until Monday afternoon. In the absence of President J. W. McLendon, who has left the State, Second Vice-president J. F. Christie, of Jonesboro, presided. Following an address of welcome by Mayor C. E. Taylor of Little Rock and replies by several members, Acting President Christie addressed the association concerning matters of mutual interest. He spoke of the preponderance of proposed legislation affecting public utilities introduced at the last session of the Legislature, some of it ridiculous in character, but practically all tending to put additional burdens on the utility companies.

The association includes operators of electric light, water, gas and electric railway companies, and most of the papers presented were on electric lighting subjects. The two papers of most interest to electric railway companies appear in abstract below:

## RELATION OF PUBLIC UTILITIES WITH PUBLIC

The paper on this subject by J. W. Gillette, general manager Fort Smith Light & Traction Company, urged that a public utility company make every effort to secure the good will and confidence of the community which it serves. He said in part:

"There is a grave duty and a heavy responsibility resting on the shoulders of those who are to shape its policies, administer and direct its affairs. We are prone at times to take too much to heart the attacks and criticisms that are so often either justly or unjustly aimed at the interests we represent. Just criticism at times, when given in the proper spirit either by public, press or city officials, is a good thing, for it is often only by having our attention drawn to our faults and mistakes that we are able to correct them, and this should be done promptly and cheerfully. To indulge through the columns of a newspaper in a quarrel with some disgruntled or aggrieved patron or with city officials is the height of folly, and ten chances to one you will make a dozen enemies where you had only one. Meet those who are aggrieved on their own ground, listen patiently to all they have to say, and for the time being place yourself in the attitude of making them think that they are entirely right. Then, at the proper time, quickly open a discussion of the situation but never an argument.

"Accidents and interruptions to the service are bound to occur at times, even in the best regulated plants, and when they do occur prompt attention should be given by the manager himself to the situation. It is very unwise in this day and age either to insinuate or to allow the idea to get out that the public must do business with you or not at all; it is very poor policy in our class of business to go around with a chip on one's shoulder inviting trouble.

"It is good policy to keep in close touch with those who have under their charge civic improvements. Get their ideas and plans, co-operate with them, and when possible assist in carrying out schemes and ideas that are for the good and betterment of the community at large, for what they may accomplish for the benefit of the public and the city in which you are operating is to a large measure good for your company. Eliminate the word 'antagonism' from your vocabulary and remember it never brought much good to anyone.

"I have found it a good plan to keep a few of our leading business men posted regarding our street railway receipts (daily in two cases). Printed blanks are made out and

sent to the presidents of four of our largest institutions, a bank in one instance. The blank shows the number of passengers hauled on each line, tickets and cash fare receipts, and as one gentleman remarked to me the other day: 'Your daily street railway reports to us indicate a forecast of general business conditions throughout the city. It is a very good scheme and is certainly appreciated.'

"Be optimistic. It is unwise to complain about how poor business was last week and immediately contribute it to the fact that times are hard and things are generally dull all over the country. Carry your optimism with you always no matter how hard or difficult your problems may seem to be, and in the carrying of this feeling of good will, friendship and cheer to others you will be surprised how much it will lighten your own duties and burdens."

## DISCUSSION

In the discussion which followed the reading of Mr. Gillette's paper, W. L. Wood, Jr., of the Texarkana Gas & Electric Company, emphasized the importance of maintaining the quality of the service and of paying attention to complaints. He said there was a time when managers did not realize this, but most of them now understand its importance.

A. E. Main, of the Hot Springs Water, Gas & Electric Company, called attention to the publicity policy adopted by the Federal Light & Traction Company and effective in Hot Springs. Cards are posted in cars and other public places which state that courteous treatment is always due the public.

## LEGISLATION AFFECTING PUBLIC UTILITIES

Another paper was one on "Legislation Affecting Public Utilities," by C. J. Griffith, general manager Little Rock Railway & Electric Company. Mr. Griffith first showed that no public utility corporation does more to advance the progress of the city than the street railway. It may be actuated by self-interest, but its interest is to aid the development of the city in which it operates. Moreover it does a great deal for the city besides supplying rapid transit. It often paves the streets. It encourages the establishment of manufacturing enterprises by the supply of power at a lower rate than an individual plant using steam power. By developing the city it adds to the tax receipts. It employs a large number of men who spend their money in the city. It is a large taxpayer. Nevertheless, the tendency is often to criticize its management, and legislators pass unconsidered bills hampering the operation of the line. The time of meeting of the average legislature is usually far too short to permit of proper consideration of corporation bills. The sessions last from sixty days to four months, and measures which require months of careful study are passed in as many days. The speaker said that he concurred with State Senator Tustin of Pennsylvania, who in stating his objection to the passage of Governor Tener's pet measure of a public utilities bill (which was defeated) said that any measure which undertook to regulate twenty-nine different classes of corporations, as this did, should be carefully considered in all its ramifications for at least two years by a commission before being enacted.

The speaker then referred to some typical bills of this kind. A decade ago Arkansas passed a bill debarring from that State all companies which entered into agreements in regard to rates, not only in Arkansas, but in any place. Under this law an English company which entered into a rate agreement with other companies in London in regard to rates in that city could not do business in Arkansas.

The result was that many strong companies withdrew from the State and irresponsible home companies sprang up. The next legislature undid the bad work of its predecessor. Referring to other legislation, the speaker said in part:

"In the Rhode Island Senate a bill was introduced providing for a public service commission of five members to be appointed by the Governor, with the approval of the Senate. Among the privileges of the commission was full control over fares, freight rates, price of gas, electricity and telephone tolls; also it was to have power to fix wages, regulate the hours of labor and conditions of employment of conductors, motormen, linemen, operators, and not only these, but clerks, bookkeepers and other employees of all public service corporations. The hours of motormen and conductors were limited to a maximum of ten hours. This commission was designed to relieve general managers, superintendents, master mechanics and other officials from all responsibility and care, leaving to them the less arduous work of drawing their salaries and carrying out the details of orders issued by the commission.

"The California Legislature considered a bill providing that every transfer issued by a street railway company should be honored by the conductor on the line the transfer is issued to, at any time during the day it is issued. Massachusetts had a bill of the same kind before its Legislature. The gross injustice of a measure of this kind is so apparent that it is a wonder a member of a legislature would have the hardihood to introduce such a bill. It is true these bills were defeated, but it is also true—almost unbelievably true—that the California Legislature actually passed a compromise measure making transfers good for ninety minutes. This eliminates carrying men and women to their work in the morning and back at night for a single fare, but it permits a woman to attend to quite an amount of shopping and return home by a different route for a single fare for the round trip, or it may well enable astute passengers to go home and back at the lunch hour on a single fare.

"In Ohio the Legislature had before it a bill providing that a rival company may condemn its way over the tracks of an existing company by grant of a city council. The possibilities of barefaced legalized robbery under such a law are apparent at a glance. The existing company builds an extension into new territory. It is perhaps years before regular travel suffices to justify the outlay. And then, without all this preliminary expense and waiting for profits, with no risk of non-development of traffic, a rival company is formed, jumps in, under color of law, on the tracks of the existing company and shares the business.

"Less radical but still unjust was the bill in the New Jersey Legislature giving the Public Utilities Commission power to direct any railway or street railway to establish and maintain connections with other railways and street railways.

"The lower house in the Massachusetts Legislature passed a bill limiting the hours of motormen and conductors to nine hours out of a continuous eleven hours. One representative pointed out that the Supreme Court had held a like bill unconstitutional applied to an individual employer, and that the same principle applied to the street railway. Representative Underhill sagaciously showed that the bill was purely a political measure and that the employees would discover that the bill, if passed, would cut off \$2 each week from their wages. The bill was killed in the Senate.

"What at this distance would seem to be in the nature of duress was the New York bill requiring interchange of transfers on all lines crossing any of the bridges connecting the boroughs of Manhattan and the Bronx and withholding certificates permitting operation of cars on bridges until such interchanges should be arranged. It has always seemed to me to be an injustice to oblige competing companies to interchange transfers. There may be and there are cases where such transfers are mutually beneficial and

such traffic arrangement tends to hold the good will of the people, which is always a valuable if intangible asset. But it should not be obligatory nor should it be enforced by harassing the companies concerned by withholding any of their track privileges.

"Illinois considered a bill to oblige street car companies to equip car ends with gates. Tennessee had a bill to prohibit installation of pay-as-you-enter cars equipped with gates or any sort of obstruction to free ingress and egress. The Pennsylvania Legislature had before it a bill under which 10 per cent. of the stockholders of a corporation could petition the Common Pleas Court to reduce the salary of any official of such corporation. In Connecticut the House passed a bill requiring electric railways to screen arc headlights on approaching vehicles under a penalty of \$7 for each violation.

"But before closing it is a pleasure to note that in some quarters it is recognized that the corporations have some rights. Thus Massachusetts failed to pass bills permitting mail carriers to ride free, to pay damages where tracks abut on estates and to oblige street railways to double-track all extensions. The Attorney-General of Massachusetts held that the bill requiring free transportation of mail carriers was unconstitutional. The company which I have the honor to represent thrashed out this question successfully in the courts only recently. The Minnesota Legislature passed a bill exempting street railways from the strict anti-pass laws of that State in order that policemen and firemen might ride free, but the Governor vetoed the measure on the ground that if policemen and firemen could not afford street car fare the cities should raise their salaries.

"In Ohio the municipal ownership bill was defeated and in Massachusetts a like bill was withdrawn. In the Ohio debate it was demonstrated that municipal ownership had not been satisfactory in European cities where it has been tried, and it is a curious coincidence that on the very day the citizens of Detroit voted in favor of the city taking over and operating the traction company's properties the whole Commonwealth of Australia was threatened with a complete paralysis of industry by the calling of a general railroad strike for higher wages on all the government-owned railroads."

#### ELECTION OF OFFICERS

The following officers were elected for the ensuing year: J. W. Gillette, of the Fort Smith Light & Traction Company, president; E. C. Bellamy, of Mammoth Springs, first vice-president; C. M. Richards, of Hope, second vice-president; A. E. Main, of Hot Springs, third vice-president, and W. J. Thorp, of Little Rock, secretary-treasurer. The executive committee is composed as follows: B. C. Fowles, of Pine Bluff, chairman, and C. J. Griffith, of Little Rock; A. E. Main, of Hot Springs; W. H. Walkup, of Batesville; W. L. Wood, of Texarkana; S. C. Dowell, of Walnut Ridge; S. C. Stearnes, of Little Rock; L. S. Hunt, of St. Louis, and Mrs. La Salle Stoops, of Stuttgart.

#### ENTERTAINMENT FEATURES

Social entertainment provided during the week included a moving-picture show, illustrating the use of Westinghouse Electric & Manufacturing Company's domestic electric appliances, a luncheon given by the Little Rock Chamber of Commerce, and an elaborate banquet and informal dance given by the supply men.

#### MEETING OF SUPPLY MEN

At a meeting of the supply men, or Class B members of the Arkansas association, held on May 7, L. S. Hunt, of the Commercial Electric Supply Company, St. Louis, Mo., was elected president; Donald B. Cameron, of the Western Electric Company, Chicago, Ill., vice-president, and W. R. Herstien, of the Electric Supply Company, Memphis, Tenn., secretary-treasurer. Upon request, the president of this division of the association was made a member of the executive committee of the operators' association.

The next convention will be held at Little Rock.

# Cincinnati Traction Strike

A Strike of the Platform Men of the Cincinnati Traction Company Has Been Carried on During the Past Week and Has Been Characterized by Acts of Exceptional Violence—An Account of the Efforts at Arbitration and of the Most Recent Developments as Seen by Our Special Correspondent Is Published

Although the strike of the motormen and conductors of the Cincinnati Traction Company was called at 9 o'clock on the evening of Friday, May 9, the men were slow to respond to the order for suspension of work which was issued by Division 627 of the Amalgamated Association. By 3 o'clock the next afternoon, however, no cars were running, and the company announced that while few of its men had gone on strike it could not operate its cars owing to attacks on them by street mobs. The rolls of the



Cincinnati Strike—Crowd Surrounding Burning Trolley Car

union, nevertheless, show that a large number of the men promptly enrolled after the strike order was issued—many more than had joined the union before the strike was declared.

Last week, before the men were fairly organized, a self-constituted committee had proposed an agreement between the company and Division 627 of the Amalgamated, the first paragraph reading as follows: "1. That in the operation of the lines of the company it is agreed by both parties that all business shall be transacted directly between the duly accredited officers of the company and the duly accredited officers of the Association." It was characteristic of this proposal that company was written with a small "c" and Association with a capital "A" throughout. Upon rejection of the proposed agreement, which was dated May 7, the strike order followed on May 9.

President Mahon and Vice-president Orr of the Amalgamated appeared early on the scene of trouble. On Friday, the traction company being deaf to requests for conferences, the intervention of the Mayor, H. T. Hunt, was sought with even greater success than is the rule in such cases.

To Mayor Hunt's invitation for a conference with the union representatives on Sunday, W. Kesley Schoepf, president of the traction company, sent a refusal, "because this company is in a position to continue the operation of its cars immediately, provided proper police protection is afforded, and, further, because, there being no grievance on the part of employees against the company, I cannot believe that they desire such a meeting." On Sunday several hundred men were brought in to take the places of strikers, but only a few cars were sent out, and these were soon disabled. The double pole and trolley wire used in Cincinnati added to the troubles of the new men.

The Mayor renewed his demand upon the company to submit to arbitration, adding to his second letter the threat of receivership proceedings if his demand was refused. In this communication, dated May 11, the Mayor said:

"The city administration, being charged with the duty of protecting the convenience and safety of the citizens of Cincinnati, demands that your company take the necessary steps to resume immediately the operation of its cars. In order to accomplish this it will be necessary for your company to submit to arbitration the matters at issue between your company and its employees.

"I am advised by a committee representing your employees that they will abide by the result of arbitration if your company will do the same. I would suggest, therefore, that your company proceed to name an arbitrator. I will request your employees also to name an arbitrator on their part, these two arbitrators to agree upon a third arbitrator within twenty-four hours after their first meeting. In case no agreement can be arrived at, the judge of the United States District Court for this district, or some other unprejudiced person, is to name the third arbitrator. If your company will agree to proceed in this manner, I am sure that your employees will return to work and will thereby make it possible immediately to resume street car service.

"If your company will not agree so to proceed, the city of Cincinnati will be forced to apply to a court of competent jurisdiction for the appointment of a receiver to operate your property and if necessary for a forfeiture of its franchise.

"I am aware that your company is reluctant to recognize any organization of its employees, but the fact is, nevertheless, that an organization comprising almost all your motormen and conductors actually exists and the existence of such an organization is no longer an issue. As a public utility company it is your duty to render service



Cincinnati Strike—Cars Stopped on Street by Strike Sympathizers

to the public, and a refusal to recognize what is already a fact furnishes no excuse for failure to render this service. I shall expect a reply by 6 p. m., Monday, May 12, 1913."

With this letter was a communication from the men embodying the first formal statement of their demands. These include a ten-consecutive-hour day, no run to pay less than nine hours' time; half pay for extra men; 25 cents an hour for first-year men, 27 cents for the second year and 30 cents thereafter; "the right of organization," and a written agreement with the company providing for adjustment of other grievances and for arbitration in case of failure to agree with the company as to questions that may

arise in the future. The present wage scale is 20 cents for the first year, 21 cents for the second and third years, 22 cents for the fourth and fifth years, 23 cents for the sixth to ninth year, inclusive, 24 cents for the tenth to fourteenth year, inclusive, and 25 cents for the fifteenth year and thereafter.

A few minutes prior to the expiration of Mayor Hunt's time limit President Schoepf agreed to arbitrate on the understanding that the "matters at issue" were the demands summarized above from the letter to the Mayor. The company designated Walter A. Draper, its secretary, to act as arbitrator. The company's reply was unsatisfactory to the strikers, who, after the Mayor had presented Mr. Schoepf's letter and urged an immediate resumption of work, refused by a mass-meeting vote taken on the morning of Tuesday, May 13, to accede to the arbitration proposal unless the union was first formally recognized. This action was taken in spite of the urging of their champion, the Mayor, who said: "Now that you are assured of a fair adjustment of your grievances, the people of Cincinnati are entitled to your assistance in bringing about an immediate resumption of car service. The Cincinnati Traction Company has done its part. I am sure that the men your committee represents are not willing to be outdone in fairness."

Another mass meeting held on the evening of May 13 more formally rejected the Mayor's arbitration plan on the ground that the company's acceptance was neither "clear nor satisfactory" as to the "right to organize." The recognition of this right, an agreement to meet and treat with the union, the reinstatement of all employees in their former positions and that Mayor Hunt should be the third arbitrator if the men and the company failed within five days to agree upon another selection were proposed as new conditions upon which the men would agree to arbitration.

The Mayor's remarks late Tuesday night, following the action just outlined, showed that he had gained experience from his three days' dealings with the Amalgamated. This was especially evident in his unofficial comments on the failure of the men to stand by their signed offer to arbitrate on the basis of their statement of May 11. It was



Cincinnati Strike—One of the Means Used for Publicity by the Strikers

evident, also, in this letter, which the Mayor hurriedly dictated Tuesday night and sent immediately to union headquarters: "It is my duty as Mayor of Cincinnati to preserve order and to protect property. The Cincinnati Traction Company is entitled to the protection of the laws and the use of its property. The people of Cincinnati are entitled to the use of a public convenience. The Cincinnati Traction Company is under a legal obligation to operate its cars, whether or not any settlement is made with its striking employees. The company also has a right under the law to employ whom it chooses to operate its cars. The Mayor of Cincinnati is under a duty to protect persons operating

the cars from violence or intimidation. Street railway transportation must be immediately resumed, and I propose to call upon the officers of the Cincinnati Traction Company to resume operation of its cars.

"I also propose to see to it that the operation of its cars shall have adequate protection to the best of my ability.

"I am sure that the striking employees of the Cincinnati Traction Company recognize these facts and as law-abiding citizens of Cincinnati will not only not interrupt by violence or intimidation the operation of the cars of the Cincinnati Traction Company, but will assist the authorities in preserving order and in inducing disorderly elements

## WILL YOU DO IT?

To the Employees of the Cincinnati Traction Company:

Your demands for the right to organize, have a reasonable work day, 25 cents, 27 cents, 30 cents per hour and fair working conditions have been ignored by the Company.

These principles have been indorsed by the Central Labor Council, Building Trades Council and all affiliated labor organizations of Cincinnati.

Arbitration of these questions has been ignored. If you are notified to take a determined stand in defense of these principles it will be your duty to quit work when so notified.

**WE WILL DO IT.**

PIERCE CONN.  
LEE DAVIS  
FRED. H. KIRBERT  
HARRY WIESEHAHN,  
ROBERT BARKER,

FRANK HONSINGER,  
HARRY HEARNE,  
JESSE K. COLE,  
FRED. G. FILLBRANDT,  
J. B. RAWLINGS,

Committee.

Cincinnati Strike—Circular Issued Prior to Walk-Out

of the community to refrain from any effort at interruption.

"I have a right to call upon all citizens to do this, and I do now so call upon the organization which you represent."

This letter was in a very different tone from the Mayor's previous communications, in which he had said among other things that he would not police cars run by strike-breakers or be responsible for the results if new men were imported. On Sunday he had declared that "we might as well run the cars ourselves with policemen" as to attempt to protect strikebreakers. At union headquarters Wednesday it was evident that the men were greatly surprised when the Mayor failed to support them in their refusal to arbitrate in accordance with the original proposition made through him.

### SITUATION ON SUBURBAN LINES

For the first time since Sunday the traction company's cars made their appearance on the downtown streets at 9 o'clock Wednesday morning. The cars were run in bunches of three preceded, followed and guarded on either side by mounted police and four patrol wagons filled with policemen. No passengers except strikebreakers rode on the cars. There was little disorder, although crowds of strikers and sympathizers followed the cars along the Avondale route.

By Sunday some 500 employees of several suburban and interurban lines had suspended work. These included the motormen of the Cincinnati, Georgetown & Portsmouth Railroad, the Interurban Railway & Terminal Company and the Cincinnati, Milford & Loveland line. Although union officials say that the Cincinnati, Covington & Newport Traction Company's men have lately joined the Amalgamated in large numbers, 450 in all, this company's service continued without interruption. In consequence, the business center of Cincinnati saw the usual number of "green ears" on the street and strangers could not understand the reports of a complete suspension of trolley service until informed that these were Kentucky cars.

All but two of the conductors and motormen of the Cincinnati, Milford & Loveland Traction Company had signed the roll of the new street car men's union on Wednesday. One car remained in operation outside of the Cincinnati limits by permission of the union on promise that the remaining two employees walk out to-day.

F. H. Talbot, superintendent Interurban Railway & Terminal Company, said on Wednesday that the line would not operate any passenger cars until the strike trouble had been settled. The company is running freight and produce cars, however, bringing in the milk and farm products from the farmers in the outlying country districts. The produce car comes in at midnight and leaves at 4 in the morning, while the milk car comes in early and leaves at 9 o'clock. They will not carry passengers, however.

#### GENERAL SAFETY COMMITTEE ORGANIZED BY CHICAGO RAILWAYS COMPANY

A general safety committee has been created by the Chicago Railways Company, and plans have been made to develop a systematic arrangement under which the safety work will be extended to each division of every department of the system. The initial general safety committee is composed of the following members:

Williston Fish, general manager, chairman; Sidney Ossoski, general claim agent; M. B. Orde, treasurer; F. E. Smith, comptroller; J. R. Guilliams, general attorney; J. Z. Murphy, chief engineer; C. A. Caul, general roadmaster; Benjamin Phillips, superintendent of transportation; N. M. Thorssen, purchasing agent; J. V. Sullivan, general supervisor; Dr. H. M. Moyer, E. C. Hagerman, auditor of claim department, and George England, chief investigator.

Each member of the general safety committee who is a head of a department will appoint one or more sub-committees in his department. For instance, in the larger departments, or in those which have a number of employees at different points on the system, several sub-committees will be appointed. Thus there will be one sub-committee at each car station, substation and power house, and various sub-committees dealing with different subdivisions of the general work will be established in the road, shop and line departments. The sub-committees will be made up of members drawn from all classes of the service in the departments concerned, and in this way the condition of the entire property and methods used in the operation will be subject to supervision. The members of the sub-committees will rotate in office and will probably serve about six months in each case, although this is a detail that will be arranged to accomplish the best results after the work is well started. The sub-committees will probably meet about once a month, and the general safety committee will hold its meetings about the same interval apart.

In addition to the definite steps that will be taken by the general committee and by the sub-committees, arrangements have been made to get each employee in direct touch with the movement. Postal cards will be distributed at each car station as well as at other locations where there are employees, and these will be used to promote the work of prevention. The postal cards are headed "Suggestion to Prevent Injury" and are addressed to Williston Fish as chairman of the general safety committee. A postal card provides for a notation of the station and department of the company, the date and the name and occupation of the employee. Space is provided for a description of the condition or practice criticised after the following words, which appear on the post card: "Your attention is called to the following practice or condition." There is also a space for a memorandum regarding the action taken or the recommendation which follows as a result of the suggestion. No personal criticism of one employee by another is to be made to the committee. A button has been adopted which bears conspicuously the word "Safety." It also has the words "Courtesy" and "Prevent injury," as well as the insignia of the Chicago Railways Company.

The matter of the appointment of a committee and sub-committees has been under consideration by the company for some time. Before the decision to start the work was

made the work of like committees on other roads was investigated. It was found that general safety work has been conducted by other companies without any friction among the various departments and with such earnestness that the committee has had the effect of bringing all the departments more closely together. During the investigation which preceded the appointment of the general committee it was found that one of the steam railway companies which established a safety committee about four years ago had accomplished wonderful results in the prevention of accidents and had also, in connection therewith, lowered its expenses due to injuries 33 $\frac{1}{3}$  per cent. This same company expects this year to make the reduction 50 per cent.

The appointment of the committee was authorized by the executive committee of the board of directors on April 22, 1913, when resolutions were passed which in part are as follows:

"Whereas it has been clearly shown by the experience of railroads and large manufacturing concerns that the establishment of safety committees, dealing directly and comprehensively with matters of safety in the construction, maintenance and operation of such properties, is of great benefit in reducing the number of accidents involving injuries to persons or damage to property;

"Therefore, be it resolved, that a standing committee is hereby established, to be known as the general safety committee of the Chicago Railways Company.

"The duty of the general safety committee will be to inform itself of any and all conditions and practices existing or arising in the construction, maintenance or operation of the company's lines, power plants, stations, shops, offices and other property which by any likelihood may cause injury to persons or damage to property, and to devise, develop and recommend remedies therefor.

"Recommendations of remedies involving the expenditure of money will be subject to the approval of the general manager or of the executive committee, according to the amount of expense involved."

#### COMMITTEE MEETINGS OF AMERICAN ASSOCIATION

Secretary Donecker of the American Electric Railway Association was in Chicago May 15 and 16 to attend several committee meetings. On May 15 a committee met to consider proposed changes in the constitution and by-laws of the association. Charles L. Henry, C. N. Duffy and Mr. Donecker participated. It was decided to recommend an amendment that would provide for closer affiliations of the American Association with all other electric railway associations to the end that all may co-operate in the work of standardization and in other movements in which the interests of the various associations are identical. It was also decided to make a change in the method of distribution of the printed proceedings of the annual meeting and a reduction in the number of copies allotted to companies.

Later F. D. Norviel, chairman of the committee on express and freight traffic of the Transportation & Traffic Association, and Mr. Donecker went over the work of that committee in preparation for the report to be submitted at the Atlantic City convention.

On May 16 a meeting, attended by F. G. Buffe, Peoria, Ill., J. E. Gibson, general superintendent Kansas City Railway & Light Company, and Mr. Donecker, was held to discuss the report of the committee on passenger traffic of the Transportation & Traffic Association. On account of Mr. Buffe's resignation from the Illinois Traction System he resigned from the committee, and Mr. Gibson was appointed chairman. The report to be presented by the committee at the Atlantic City convention will consist of studies by the separate members of the committee on various interesting subjects such as relief of rush-hour conditions by encouragement of travel at other times, etc.



# Report on Chicago Rolling Stock

Height of Car Steps, Schedule Speed, Time of Loading, Street Occupation and Motor Testing Are Among the Subjects Discussed by the Board of Supervising Engineers

The report of the Board of Supervising Engineers, Chicago Traction, for the year ended Jan. 31, 1911, has a chapter on "Cars and Car Operation" which discusses the subjects of height of car steps, schedule speed, time of loading, street occupation, motor development, service temperature tests and car operation. An abstract of this part of the report follows:

## HEIGHT OF STEPS

"In the design of all the new rolling stock it has been the effort of the board to standardize dimensions as far as possible, particularly those affecting the habits or convenience of the public. But the public has not always understood that it is impossible absolutely to adhere to a fixed standard dimension. In respect to the height of the steps, the standard worked to is as follows for new equipment, unloaded (wheel new 34 in. in diameter): Height of first step above rail head, 16 in.; height of second step to platform, 14 in.; height of third step to car floor, 11 in.; total, 41 in.

"These represent the maximum heights for present types of platform construction and cannot be reduced materially without decreasing the diameter of driving wheels and introducing radical changes in the dimensions of apparatus involved.

"The factors which are involved in causing variation of step height may be discussed under two headings:

### "First—Elements of Variation:

"a—Wheels originally 34 in. diameter when new wear down to 31 in. diameter before renewing. Drop of car body, 1½ in.

"b—Springs compress under live car load 1¼ in. with eighty passengers; maximum, 1⅞ in.

"c—Car tilting due to eccentric loading.

"d—Surface of pavement irregular, dropping below the head of rail from wear, track elevation or other causes.

"The total drop to be expected from wheel wear and spring compression totals about 3 in. Thus, disregarding the other causes of variation, the step height in cars properly constructed and maintained may be expected to range from 13 in. up. Occasionally the standard height of new equipment unloaded—16 in.—may be slightly exceeded, but as often decreased, which results from the fact that in practice such a flexible structure cannot be expected to conform exactly to a fixed standard. Eccentric loading may further add or subtract a small amount. Finally, pavement inequalities are manifestly quite beyond the control of the car designer. Complaints of high steps have generally been traced to cases where pavement is badly out of alignment or not yet surfaced, so that the addition of 4 in. or 5 in. in step height thus becomes serious. Similarly the enforced change of track grade without regarding the entire street paving has resulted in 2-in. or 3-in. increased step height. Thus it appears that for properly paved street the present standards of car design will result in a fair average height of first step of about 14¼ in. after the cars have been in operation for about half the wheel life and are fully loaded, or about 15 in. for cars hauling an average load.

### "Second—Controlling Elements of Design:

"The fixing of a minimum height of car flooring at 41 in. above the rail head results from necessary clearance and conditions as noted below:

"a—Diameter of wheel tread.

"b—Height of truck side frames at pedestal determining height of side sill of car (on account of necessary clearance for operating short radius curves).

"c—Bulk of motor for requisite capacity.

"d—Clearance of gear casing above pavement.

"e—Elliptical springs require depth for easy riding. Spring hangers must clear irregularities in pavement.

"f—Springs must have considerable compression in order to make trucks easy riding.

"g—Both body and truck bolsters require considerable depth for requisite strength unless weight is sacrificed.

"h—Height of truck from rail to bearing plate thus fixed.

"i—Clearance required between motor and car floor for brake rods, conduit pipes, etc.

"j—Long platforms require considerable depth of knees in order to secure necessary strength and rigidity without sacrifice of weight.

"k—Platform drop, therefore, limited in order to avoid interference of trucks and motors on curves.

"l—Short radius vertical curves in track require extra clearance of car floor to avoid interference with motors.

"m—A second step to platform of excessive height results in passengers stumbling on entering and leaving car.

"n—Three steps to the platform floor cannot be used without inseting platform underframes and contracting platform standing space. This arrangement also increases the possibilities of accidents by landing passengers on the wrong foot.

"From a consideration of the above elements, it will be seen that with a given wheel diameter the lowering of car steps involves a large number of details in the design of trucks, motor and car body. The present truck builders have already secured maximum compactness, although it is possible to reduce the depth of springs at the sacrifice of easy riding qualities. Smaller wheels can be used in the cities where pavement surfacing is maintained to a uniform elevation with reference to the rail head, insuring a fixed clearance, but they cannot be used where bad paving occurs along any portion of the routes.

"A condition peculiar to Chicago exists at the entrance to the river tunnels, where the limitations of the street entrance to these tunnels have necessitated a vertical curve of such short radius that the tilting of the trucks at the entrance to the grade renders practically impossible any lowering of the car floor below that now standard and, as a matter of fact, in some cases, raising has been necessary in order to afford ample clearance for apparatus under the car floor.

"The two-riser platform step is out of the question if extending beyond the car body, and the restricted tread necessary with a step flush with the car introduces liability of accident from stumbling. Moreover, this type of step has been found particularly unfortunate in landing passengers on the wrong foot for safe egress from the car.

"It is, therefore, clear that any material reduction in step height will require one of three things:

"First—Reduction in wheel diameter (requiring special motors).

"Second—The redesign of the car and platform underframe to permit of cut-in double steps (objectionable).

"Third—The development of an extension folding double step to avoid traffic interference.

"Electric Railway Association Recommendations.—In this connection, it is of interest to cite the recommendations of some of the important railway associations of the country which have definitely studied this subject through special committees. They are given in Table I.

"From this table it may be seen that for the same car height Chicago car steps have been brought from 1 in. to 2

in. nearer the street surface than the distances recommended in other cities.

"The above discussion relates to end-entrance cars with drop platforms and standard four-motor equipment and

TABLE I—RECOMMENDATIONS FOR HEIGHT OF CAR STEPS—INCHES

|                                       | Am. El. Ry. Assn. | New York St. Ry. | Chi. 1910 Car Max. |
|---------------------------------------|-------------------|------------------|--------------------|
| Height of first step from ground..... | 17                | 13—14            | 16                 |
| Height of first step to platform..... | 14                | 17 average       | 14                 |
| Height of platform to car floor.....  | 10                | 14 average       | 11                 |
|                                       |                   | 10 average       |                    |
| Total .....                           | 41                | 41               | 41                 |
| Diameter of wheel .....               | 33                | 33               | 34                 |
| Tread of step not less than.....      | ..                | 10               | ..                 |

does not apply to center-entrance cars or cars with maximum traction trucks.

WHEEL TREAD

"Report II, 1908, recorded the adoption of rolled-steel wheels on Chicago surface lines. The original design of wheel contour has been modified slightly with the object of increasing the life of the wheels. These changes are as follows:

"First—Radius of throat increased from 9/32 in. to 1/2 in., which materially increases the inside slope of the flange of the wheel.

"Second—Taper of wheel tread increased from 1 in 38 3/16 to 1 in 16 over that portion of the tread which constitutes the main bearing surface. Outer portion of tread increased from 1 in 20 to 1 in. 10; contour of rail section and taper of head unchanged.

"These changes in wheel contour were made to prolong the life of the wheel by reducing inside flange wear, and the change has been found to produce the results expected.

CAR HEATING

"In line with the general efforts being made to reduce maximum demand and to increase both the efficiency of operation and the uniformity of heating, arrangements have been made to test in Chicago surface cars, under practical operation, a thermostat regulator for automatically cutting in and out the heater circuits. This thermostat consists of a compound brass-iron element with electrical relay circuit operating a power solenoid which carries the main switch contacts. The thermostat is sensitive within about 3 deg. above or below the normal temperature desired and can be easily adjusted at the shop. Furthermore, the apparatus may be installed so as to control either the entire heater current or connected behind the main heater switch so that the regulative feature may be limited to either the first or second point circuit. This latter feature is very desirable in mild weather, to avoid the frequent closing of the switch which would otherwise take place if all the heat were to be turned on and off by the regulator.

SCHEDULE SPEED

"The general increase in schedule speed which has been made possible by track reconstruction and the use of prepayment cars has already been noted in Report II, 1908, for a number of South Side lines. Similar data are now presented for lines of the North and West Sides. Averaging all of these lines without regard to their relative importance, the schedule is found to have increased over 8 per cent—from 7.60 m.p.h. in March, 1910, to 8.22 m.p.h. one year later. Or, considering only the lines of maximum traffic density, i.e., those which carry over 1,000,000 passengers per month, it appears that lines of maximum traffic throughout their length, such as Madison and Van Buren Streets, now average somewhat over 8 m.p.h., moderately heavy routes about 9 m.p.h., and long routes, such as Clark-Devon and Rogers Park, traversing much outlying sparsely settled territory, about 10 m.p.h. In contrast therewith the short-haul State Street line, lying entirely within thickly settled territory with a large part of the length traversing the business district, is not able to make more than 6 m.p.h.

"Expressed in concrete figures, an increase of 1 m.p.h. in schedule speed means that passengers may reside one-half mile further away from business, assuming thirty minutes as the maximum time allowable for surface transit in competition with elevated lines. For example, on the Madison Street line passengers can now ride to Garfield Park, where formerly a thirty-minute ride would approximately reach Sacramento Boulevard, a half mile shorter run. The general effect of this change throughout the city may be inferred from the fact that approximately 500,000,000 passenger rides per year are involved. By September, 1911, this speed had been still further raised to 8.36 m.p.h.—13.5 per cent increase since March, 1910.

"Most of the increased speed is directly due to track rehabilitation, removal of obstructions to clear operation on curves, etc., and more powerful car equipment. On some lines double track has replaced single track with turnouts,

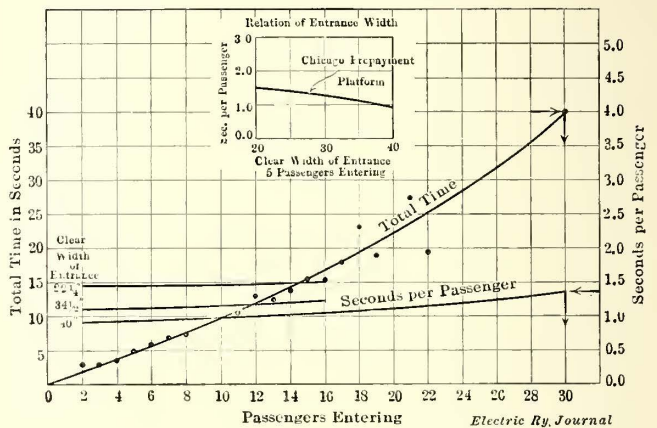


Fig. 1—Chicago Report—Typical Loading Curves of P-A-Y-E Cars

and others have been extended into thinly populated residential territory, where more rapid running is possible.

TIME OF LOADING

"A very important factor contributing to a general increase in average speed is the effect of the prepayment platform on speed of car loading. Observations made by the board's engineers are presented herewith in graphic form. These show that the loading of the Chicago cars is extremely rapid and that up to the capacity of the platform space—eight to twenty passengers—the time consumed averages about one second per passenger. Similar observations taken in other cities have rarely shown better results, and in most cases a slower speed.

"At the time the prepayment platform was introduced it was opposed on the ground that loading time would be considerably longer than when passengers could enter unobstructed at both ends of the car in the old way. The facts show that this conclusion is not applicable, at least to conditions existing in Chicago. In fact, observations recently taken in an Eastern city upon new pay-inside equipment show about double the average time of entrance found in Chicago. The so-called pay-within system is here considered as a variety of the prepayment system. Pay-inside means the old system of double entrance, conductor collecting fares from seated passengers. There is no doubt that the large platform introduced in Chicago is responsible in part for this quick loading on account of its great storage capacity, but it is also apparent that the separation of ingoing and outgoing passengers, so as to avoid interference, largely contributes to this more rapid loading.

"Typical loading time curves for a standard forty-seat Chicago car are shown in Fig. 1. The observations cover three widths of entrances, all on prepayment type platforms—40-in., 34 1/2-in., and 22 3/4-in. The 'pay-inside' results, of course, cannot be considered as broadly typical of the old-

style plan of fare collection, for the passenger movement in this particular city is admittedly slow.

"All of these observations were conducted in the heart of the congested business districts where the maximum interference to be experienced with prepayment platforms would be looked for.

"The effect of the narrower entrance opening is shown in the greater time required per passenger. This is almost entirely due to decreased platform storage capacity as passengers generally enter single file even on the widest entrance platforms.

"This final result is indicated by the upper curve, Fig. 1, showing that the average time required per passenger is as follows, shown in Table II:

TABLE II—AVERAGE TIME OF LOADING PER PASSENGER

| Width of Opening of Door | Prepayment Normal Rush Hour | Maximum Holiday |
|--------------------------|-----------------------------|-----------------|
| 40 in.                   | 0.95 seconds                | 1.46 seconds    |
| 34½ "                    | 1.13 "                      | 1.55 "          |
| 22½ "                    | 1.45 "                      |                 |

"The comparison is here made on a basis of five passengers entering, as this appears to represent a fair average applicable to the entire city. In the heavy loading districts, however, the number entering in the great majority of cases averages from eight, on lines where the loading is distributed for many blocks, to ten, on lines where there are comparatively few loading points.

"These figures in general indicate that a very radical saving in loading speed may be obtained when platform standing capacity is suitably proportioned to the capacity of the car. Here in Chicago the long platforms show to the best advantage; thus the average loading time for twenty passengers is only 1.2 seconds per passenger, whereas 1 second per passenger is required for five passengers entering. Further observations taken during the holiday shopping season show that the maximum time of slowest loading in Chicago is only about 50 per cent higher than for normal rush-hour traffic.

**STREET OCCUPATION**

"The great importance of a study of the most effective routing is illustrated by the diagram, Fig. 2, which has been prepared to show:

"First—The relative number of cars per hour passing along each side of downtown thoroughfares. (This is indicated by the relative width of the bands as compared with the scale thereon.)

"Second—How uniformly these thoroughfares have been utilized for street car traffic.

"Third—One important source of delay in the congested districts due to car interference from intersecting lines. Wherever lines of traffic cross the time required for cars to pass is largely increased, which forms an element of congestion.

"Fourth—The nature of the looping problem in the downtown district and how much the absence of through routing is responsible for the conditions existing.

"In the efforts of the two principal companies both to serve as much of the business center as possible, their individual lines have been extended practically across the loop district. Hence car interference has multiplied rapidly, and in taking advantage of certain loops and curves of great strategic importance some streets have been disproportionately used for car traffic while others are comparatively free. This also applies to one side of the street as compared with the other.

"Through routes are not indicated separately because of the small number of cars operated per hour as compared with loop traffic. The through routing of cars in the business district along straight lines as far as possible and the elimination of loops, the operation of which increases the number of crossing points, eliminating also the switchbacks on through-route streets, will evidently greatly alleviate car interference and tend to reduce congestion in the

loop district pending the application of transportation facilities that will remove large numbers of cars from surface operation in congested territories. This map, therefore, provides a powerful argument for the earliest possible establishment of rapid transit subways to relieve Chicago's surface thoroughfares through the business district.

**BRIDGE DELAYS**

"A serious element of congestion occurs from delays due to the opening of Chicago River bridges. Although river traffic is limited to 'non-rush hours,' the all-day traffic in Chicago is so large that bridge delays form not only a serious element of inconvenience to the riding public, but also involve no inconsiderable expense to the company.

**MOTORS**

"At the present time there are 1068 four-motor interpole equipments in service, all of the solid or box-frame type, approximately 40 hp (at 500 volts). For the 300 equip-

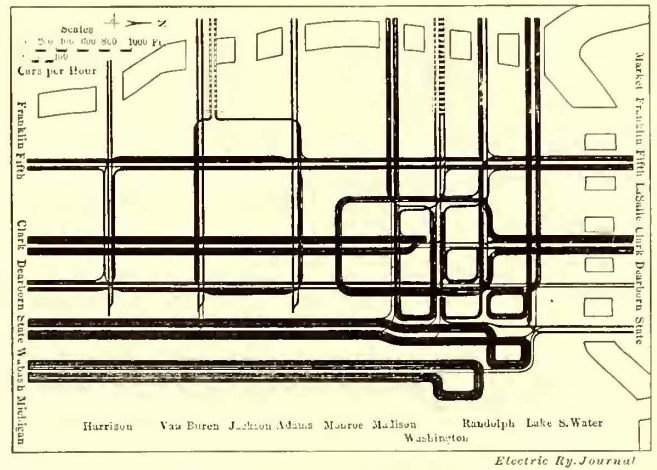


Fig. 2—Chicago Report—Street Occupation and Car Flow Diagram

ments ordered on the 1910 car design interpole motors will be used, rated at approximately 35 hp (500 volts).

"The development of the 35-hp size motor resulted directly from the desire of the board to equip the lighter cars of the 1910 design with motors of approximately the same horse-power per ton as experience with previous heavier

TABLE III—RESULTS OF TESTS OF MOTORS

|   | Requirements as per Specifications | Tests of Nov. 12 and 13, 1909.                               |
|---|------------------------------------|--|
| Hp output at axle, 73 amp, 500 volts .....  | 40                                 | Motor developed 40 hp at 72 amp, 500 volts.                  |
| Speed while developing 40 hp, 500 volts.....  | Not to exceed 560 r.p.m.           | Average during one hour hp test showed 550 r.p.m. at 72 amp. |
| Tractive effort at rim of 33-in. wheel 17:69 gear ratio, at 73 amp, 500 volts.....                                      | 1100 lb                            | Motor developed 1130 lb at 72 amp, 500 volts.                |
| Efficiency of motor, including gear, and transmission losses at 40 hp, 500 volts.....                                   | 82 per cent                        | 83 per cent, assuming 4 per cent loss in gear.               |
| Temperature rise allowed on commutator during one hour hp test, referred to room temperature of 25 deg. C.....          | 90 deg. C.                         | 43.72 deg. C.  |
| Temperature rise in any other part of the motor during one hour hp test, referred to room temperature of 25 deg. C..... | 75 deg. C.                         | Maximum was 49.34 deg. C. on armature core.                  |
| Maximum increase in resistance by per cent allowed during one hour hp test...   | 40 per cent                        | Maximum was 34.5 per cent in the armature.                   |

equipments in Chicago had shown to be satisfactory. In order to ascertain positively the fact that the previous 40-hp equipments were adequate for all normal conditions of service, continuous temperature-service runs were conducted by the builder upon the 40-hp equipments previously furn-

ished the Chicago Railways Company. Results typical of the performance of this interpole motor are presented in Table III.

"The motor had been at rest for at least twelve hours before the one-hour test started. In the flashing test a potential of 740 volts was rapidly applied while run at full speed without any signs of flashing. Furthermore the motor was subjected to 740 volts potential when at rest and came up to speed without any signs of flashing. This may be regarded as a most severe test. The specifications for the new 35-hp interpole motors prescribed that the design of the new motors should incorporate those desirable features which past experience under Chicago conditions had proved correct, and while possessing these features this new motor is found to have an even greater weight efficiency than the former standard motors."

### MUNICIPAL CAR IN SAN FRANCISCO

A plan of the standard car proposed for use on the municipal road in San Francisco and designed by B. J. Arnold was published on page 313 of the issue of this paper for Feb. 24, 1912. A few halftone illustrations of the completed car are presented in this issue. The most interesting and novel features of the car are connected with the platform arrangements. In the first place a drop platform is used for the first time, it is said, with any car of the California type. Although the "drop" is 13 in., the height of the riser into the car is only 11 in., because the floor is sloped 2 in. from the center of the bolster to the end sill. The first platform step is 14 in., and the second step is 13 in., based on a height of car floor of 40 in. above the rail.

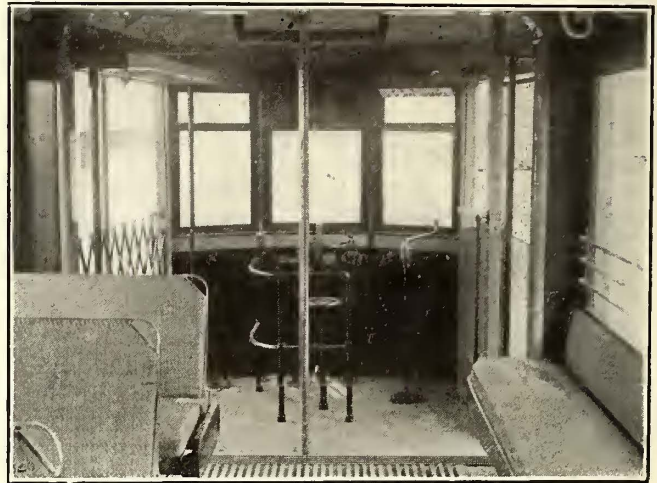
In dimensions the platforms are fairly large, being 7 ft. 4 in. long over the bumper and 6 ft. 4 in. long to the inside vestibule panel. As there are no end bulkheads in the California type of car, the platforms seem very roomy. Master controllers are used, and this also increased the space on the platform.

The front exit is located next to the car-body end sill instead of next to the bumper. The effect of this is to encourage the use of the forward exit as well as to increase

ated with the gate, while those at the entrances are of the plain lift type and are operated from the platform.

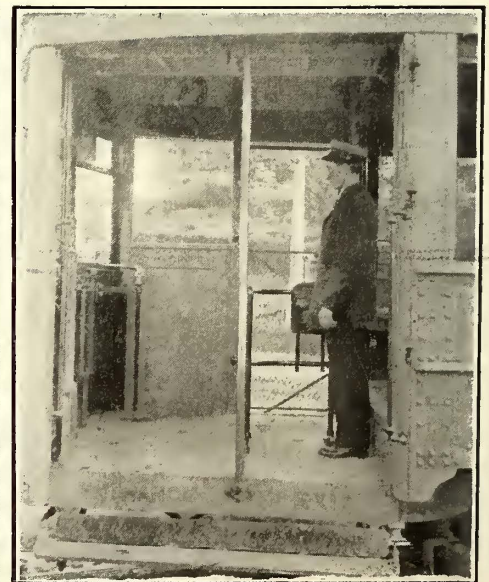
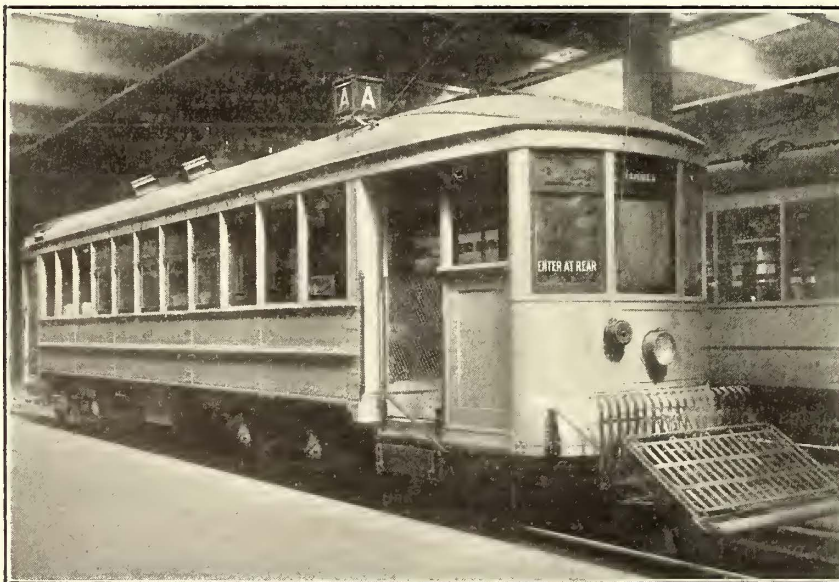
Following are given some of the dimensions and other details of the car:

|                                     |              |
|-------------------------------------|--------------|
| Weight complete with equipment..... | 48,000 lb.   |
| Weight per seated passenger.....    | 1,000 lb.    |
| Length over bumpers.....            | 47 ft. 1 in. |
| Length over body corner posts.....  | 32 ft. 5 in. |



San Francisco Municipal Car—Front Vestibule

|   |               |
|---|---------------|
| Length over closed section.....   | 14 ft. 6½ in. |
| Truck centers.....  | 20 ft. 10 in. |
| Wheel base.....   | 4 ft. 10 in.  |
| Width of passageways:   |               |
| Entrance at step.....   | 34¼ in.       |
| Exit at rear step.....  | 23¼ in.       |
| Exit at forward step.....   | 30 in.        |
| Aisle—open section.....   | 43 in.        |
| Aisle—closed section.....   | 27 in.        |
| Door openings, clear.....   | 30 in.        |
| Body side framing, plate girder type, No. 8 steel, U. S. gage.                          |               |
| Body side posts, ash.   |               |
| Bottom framing, all-steel construction.   |               |
| Body bolsters, cast-steel I-beam section.   |               |
| Platform framing, all-steel construction; maximum stress, 12,500 lb. per square inch.   |               |
| Roof, arch type; continuous steel carlins at each post; two wood carlins between posts. |               |
| Flooring, 13/16-in. maple, single floor.  |               |
| Dasher, No. 6 steel, U. S. gage.  |               |



San Francisco Municipal Car—Side View and Rear Platform

the loading speed by removing the necessity for passengers to force their way through a crowd standing on the front platform. Then the platforms are tapered more than is usually the case, in order to provide clearance on curves, although for the present the enforced use of an overhauling fender defeats this purpose. Folding steps are used. Those of the forward exit are automatically oper-

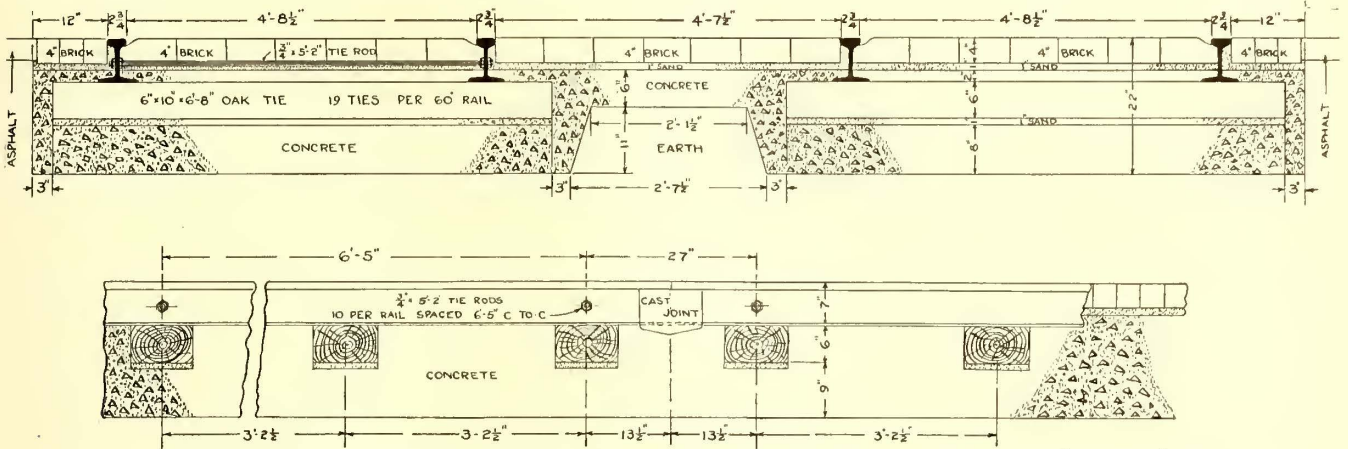
Sash, raised type, three-quarter lift.  
 Curtains, Pantasote, both inside and outside sections.  
 Seats, Hale & Kilburn walk-over type, 199A; pressed-steel bracket and pedestal; spacing, 31 7/32 in.; rattan cushion, 17 in. x 34 in.  
 Inside finish, cherry.  
 Headlining, Agasote, Nile green.  
 Fare box, Johnson, selective; Sterling Meaker, No. 16 register.  
 Ventilators, automatic eductor type; four in roof of closed section.  
 Steps automatic folding type on forward exits; plain lift steps at rear entrance and exit, raised from inside platform.  
 Lighting, tantalum high-efficiency lamps.

APPRAISAL OF THE CITY LINES OF THE DETROIT UNITED RAILWAY

In connection with the suit against the so-called Hally, or 3-cent fare, ordinance passed by the City Council of Detroit, the Detroit United Railway has made public the figures of the valuation of its property as comprised in the Detroit city street railway system. The case is before the

PHYSICAL CHARGES

"Contingencies or Incidentals of Construction, 10 per Cent.—This charge is intended to provide for necessarily incomplete inventories, for it is impossible to make a full examination of buried structures or to include each item of physical property, as some of it is bound to be overlooked.  
 "Contractor's Profit, 10 per Cent.—This charge is intended to provide for a general contractor's profit, but it



Detroit Appraisal—Section of Track in Asphalt-Paved Street with 8-in. Concrete Construction

courts. It was taken into the United States court by the Guaranty Trust Company of New York, trustee under the issue of first mortgage 4½ per cent bonds of the company. The Detroit United Railway is made co-defendant with the city of Detroit and others in the case. Since the case was started considerable testimony bearing on the detail values of the physical property has been presented to the court before a master in chancery.

Robert B. Riftenberck, the consulting engineer of the company, presented the figures of the valuation and testified regarding the method by which it was made. Owing to the fact that the present consolidated Detroit street railway system is made up of numerous constituent companies that in the earlier days of the industry were operated as separate and independent units, there were necessarily a number of different classes of track construction, all of which were gone into in considerable detail. This detail was considered necessary in order that the real values of each class involved might be brought out.

The accompanying illustration, used in the valuation, shows the method of plain track construction, class No. 84-1. Table I gives the specifications for 1 mile of 7-in., 91-lb. plain girder rail on oak ties in asphalt paved streets, with an 8-in. concrete foundation.

This plan indicates the method followed throughout the whole valuation. The prices of material used were those as of March 1, 1909, f.o.b. cars Detroit, and all labor was calculated as of the same date. The only exceptions to this were in the cases of copper and cement, the prices of which, of course, fluctuate largely. The prices of these two materials were determined on the basis of a five years' average.

To the material and labor cost so ascertained there were added, where accruable, contingencies or incidentals, general contractor's profit, employer's and public liability insurance, builder's risk and architect's fees to bring the several schedules to the physical reproduction value. To the physical reproduction value percentages were added to cover overhead charges for engineering, organization and administration, carrying charges and financing, giving the total reproduction value.

A summary of the valuation, presented by Mr. Riftenberck and relating only to the Detroit city system of the company, is published in Table II. There was also presented the following description of the percentage charges used in the appraisal:

also includes general contractor's expenses of plant, etc.  
 "Employer's and Public Liability Insurance.—\$2.50 for \$100 of labor pay roll. This charge is intended to provide for accidents to persons employed on construction and the public during such construction.  
 "Builder's Risk.—On brick buildings, \$1.50 per \$100 of

TABLE I—DETAIL OF TRACK VALUATION, STRAIGHT TRACK CONSTRUCTION—CLASS NO. 84-1

Specification for 1 Mile of 7-in., 91-lb. Plain Girder Rail on Oak Ties in Asphalt-Paved Street; 8-in. Concrete Construction

|  | Total       |
|--|-------------|
| 47,520 sq. ft. of 3½-in. asphalt top course and binder removed and hauled to dump, at 3 1-6 cents .....                                  | \$1,504.80  |
| 829 cu. yd. of paving concrete removed and hauled to dump, at \$5.21 .....   | 4,319.09    |
| 1,515 cu. yd. of earth and sand excavation, at 35 cents .....  | 530.25      |
| 1,515 cu. yd. of excavation removed to dump, at \$1.43 .....   | 2,166.45    |
| 1,222 cu. yd. of 8-in. concrete for track foundation, at \$7.13 ..   | 8,712.86    |
| 29 cu. yd. of sand cushion for tamping, lining and surfacing ties, at \$2.01½ .....  | 58.43       |
| 1,672 6-in. x 10-in. x 6-ft. 8-in. white oak ties laid 19 to 60 ft. rail length, at \$1.18 .....   | 1,972.96    |
| 143 tons of 7-in. 91-lb. plain girder open-hearth rail, in 60-ft. lengths, joints laid even and suspended between ties, at \$43.44 ..... | 6,211.92    |
| 19¾ kegs 9/16-in. x 5½-in. standard railroad spikes, at \$5.05½ ..   | 99.84       |
| 880 ¾-in. x 5-ft. 2-in. round tie rods, ten to rail, with 4¾-in. nuts per rod, at 39½ cents .....  | 347.60      |
| 1 mile of track laying .....   | 1,400.00    |
| 176 7-in. cast welded joints, at \$4.25 .....  | 748.00      |
| 10,560 lin. ft. of rail plastering, at 4½ cents .....  | 475.20      |
| 715 cu. yd. of paving concrete laid, at \$7.13 .....   | 5,097.95    |
| 138 cu. yd. of sand cushion for paving, at \$2.01½ .....   | 278.07      |
| 4,974 sq. yd. brick paving, at \$1.38½ .....   | 6,888.99    |
| 306 sq. yd. of 3½-in. asphalt top and binder laid at \$1.50 .....  | 459.00      |
| Total cost per mile .....  | \$41,271.41 |
| Of this total the labor cost per mile is .....   | 20,063.29   |

Location of this construction, Jefferson Avenue from Bates Street to Mount Elliott Avenue, 20,740 lin. ft., 3,928 miles.

Note.—These are reproduction values as of March 1, 1909, and are based on hand labor and team haul, the average haul being 3 miles, and the assumption being that a team will average 2 tons per load and travel 18 miles per day.

labor pay roll. On frame buildings, \$2 per \$100 of labor pay roll. This is the usual charge in this territory for this character of insurance.

"Architect's Fees, 5 per Cent.—This charge is intended to provide for the cost of the plans and specifications for and the superintendence of the buildings during their erection.

"Acquiring Land, 10 per Cent.—This charge is intended to provide for the expense of juries, commissioners or arbitrators in condemnation cases; to provide for the cost of removing buildings not included in property purchased; to provide for the cost of plats, abstracts, notarial fees.

recording deeds and examination of titles; to provide for cost of abutting damages, surveying and agents' commission.

OVERHEAD CHARGES

"Engineering, 4 per Cent.—This charge is intended to provide for the cost of the engineering necessary to the proper construction of such a property.

"Organization and Administration, 5 per Cent.—This charge is intended to include the salaries and expenses of the executive officers and the clerks in the general offices engaged on construction accounts or work; the upkeep of the general offices, legal fees, etc., fees of notary, and also the cost of taxes and licenses paid on property belonging to the corporation during the course of construction.

of these safety pictures as well as a 1000-ft. reel of the safety pictures of the Chicago & Rock Island Railroad. Much favorable comment was made on these two sets of pictures and their value from a safety bureau standpoint was readily acknowledged.

HANDLING CONCRETE AGGREGATE IN WAGON LOADS AT DETROIT

In the construction of track in Detroit it has been found economical in some cases to unload sand and cement by dumping wagon loads directly into the concrete mixer. John Kerwin, superintendent of tracks Detroit United Rail-

TABLE II—RECAPITULATION OF PHYSICAL CONSTRUCTION COSTS AND OVERHEAD CHARGES APPLIED TO THE APPRAISAL OF THE CITY LINES OF THE DETROIT UNITED RAILWAY

|   | Material and Labor | Incidentals, 10 per Cent | Contractor's profit, 10 per Cent | Liability Insurance | Builder's Risk | Architect's Fees | Cost of Acquiring Land | Engineering, 4 per Cent | Organization, 5 per Cent | Carrying Charges, 9 per Cent | Financing, 8 per Cent | Total        |
|---|--------------------|--------------------------|----------------------------------|---------------------|----------------|------------------|------------------------|-------------------------|--------------------------|------------------------------|-----------------------|--------------|
| Power department                                      | \$3,257,558        | \$196,677                | \$331,672                        | \$10,295            |                |                  |                        | \$151,262               | \$196,641                | \$371,652                    | \$360,089             | \$4,875,848  |
| Track department                                      | 8,447,980          | 710,644                  | 782,108                          | 82,812              |                |                  |                        | 364,555                 | 519,405                  | 981,675                      | 951,134               | 12,840,315   |
| Mechanical department                                 | 5,051,781          | 31,814                   | 34,996                           | 10,099              |                |                  |                        | 205,137                 | 266,691                  | 504,046                      | 488,365               | 6,592,933    |
| General department                                    | 1,906,216          | 111,158                  |                                  | 11,057              | \$17,243       | \$62,551         | \$79,463               |                         | 109,384                  | 206,736                      | 200,305               | 2,704,117    |
| Total appraisal                                       | \$18,663,536       | \$1,050,294              | \$1,148,777                      | \$114,264           | \$17,243       | \$62,551         | \$79,463               | \$720,955               | \$1,092,122              | \$2,064,111                  | \$1,999,894           | \$27,013,215 |
| Per cent of material and labor cost                   |                    | 5.6275                   | 6.1552                           | 0.6122              | 0.0924         | 0.3352           | 0.4258                 | 3.8629                  | 5.8516                   | 11.0596                      | 10.7155               | 44.7380      |
| Per cent of material and labor cost, plus incidentals |                    |                          | 5.8273                           | 0.5796              | 0.0875         | 0.3173           | 0.4031                 | 3.6571                  | 5.5398                   | 10.4700                      | 10.1446               | 37.0263      |
| Per cent of total physical costs                      |                    |                          |                                  |                     |                |                  |                        | 3.4111                  | 5.1671                   | 9.7657                       | 9.4620                | 27.8059      |

"Carrying Charges, 9 per Cent.—This charge is intended to provide for the interest on the capital required in the construction of a property such as this, which capital is necessarily idle during the construction period but drawing interest. It is assumed that it will take three years to complete the physical construction of this property and that the use of the money in so doing would be required at least for half the time. The interest is figured at the rate of 6 per cent per annum.

"Financing, 8 per Cent.—This charge is intended to provide for the cost of promotion, the cost of engraving bonds, fees for printing mortgages and trust deeds, fees and taxes for recording mortgages and trust deeds, fees and commissions paid underwriters and brokers for marketing bonds and the discount on bonds."

MOVING-PICTURE FILM USED IN CHICAGO TO WARN AGAINST ACCIDENTS

The value of the moving-picture film as a teacher in accident prevention was early recognized by Sidney Ossoski, general claim agent Chicago Railways Company, and the film is being used in the safety movement of the company with the co-operation of the Advance Motion Picture Company of Chicago. The claim department branch of the general safety committee has obtained a reel of 1000 ft. containing about forty scenes, illustrating the principal types of accidents that occur on one of the largest street car systems in this country. These scenes portray some startling and very instructive occurrences. The reel will be used to prevent accidents in this safety campaign by instructing the employees of the company on its safety or instruction car and in large halls located at the several car stations. This reel is one of three that are being taken. The others will be used for the instruction of school children and the general public respectively through the aid of regular moving-picture houses and by their projection on street screens as well as at public educational centers.

Many members of the organization of the National Railways "Safety First" Association, which was formed at a meeting held at the Hotel La Salle on April 21, visited the offices of the law and claim department of the Chicago Railways Company and later were taken on a trip in a private car to the Kedzie Avenue car station to visit the safety or instruction car. They also saw a part of a reel

way, makes a practice of calculating the cost of delivery of sand and cement from the railroad cars to the point where work is being done, and if it is cheaper to haul it by wagon than by car the work is done in that way, the cost of hauling in wagons being figured at 5 cents per ton mile. In handling material in this manner the sand and cement are loaded in the wagon in the proper proportions and the load is hauled



Handling Concrete Aggregate in Wagon Loads at Detroit

to the point where the work is being done. Upon arrival the horses are unhitched and the wagon is then lifted by a locomotive crane and is dumped when directly over the concrete mixer, as shown in the accompanying illustration. Tests have shown that two and one-half minutes are sufficient for the entire operation from the time the men start to unhitch the horses until they are ready to go away after dumping a load.

The city cars in Detroit often carry theater or baseball announcements on the front left panel of the car vestibule. These announcements are on 24-in. x 26-in. cards, held in position by being slipped into narrow metal guides, which are attached permanently to the panel. Disfigurement to the car at this point is avoided by painting the guides the same color as the panel, so that they can hardly be seen when they are not in use.

## NARROW-GAGE COMBINATION CAR FOR THE PACIFIC COAST RAILWAY

An all-steel car of the drop-side, center-entrance type has recently been built by the Cincinnati Car Company for the Pacific Coast Railway. This line is an electrified division of the steam railroad bearing the same name and it extends between the towns of Santa Maria and Guadalupe near San Luis Obispo, Cal.

The car is of the double-end, center-vestibule type, the main passenger compartment being located on one side of the center entrance and the smoking and baggage compartments on the other, the baggage compartment being at the extreme end with a single sliding door on each side. At the front right-hand corner of the passenger compartment is located the motorman's cab and a saloon is placed at the rear left-hand corner. The control for the opposite end of the car is located in the baggage compartment.

The length over bumpers is 55 ft. 6 in. and the width over belt rails is 8 ft. 9 in. The lengths of the four compartments into which the car is divided are as follows: Baggage room, 17 ft. 6 in.; smoking room, 10 ft. 6 in.; vestibule, 4 ft., and main compartment, 22 ft. 6 in. The car, when the folding seats in the baggage room are in use, will seat fifty-eight passengers.

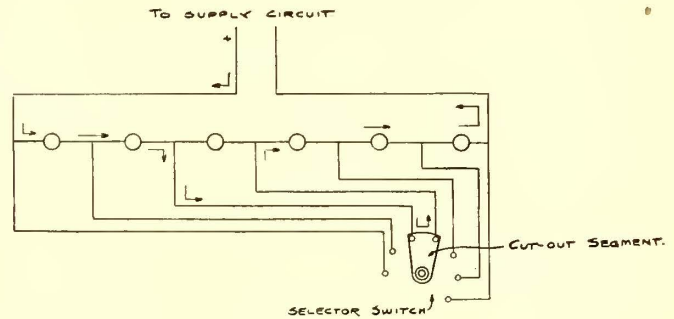
The vestibule is inclosed by manually operated mechanically folding doors and the steps of the car are inclosed by Edwards traps when the doors are shut.

The baggage room is finished in ash and steel, the wood being varnished in the natural color and the steel work

lb., the body with electrical and air-brake equipment weighing 36,300 lb. and the trucks and motors 26,300 lb.

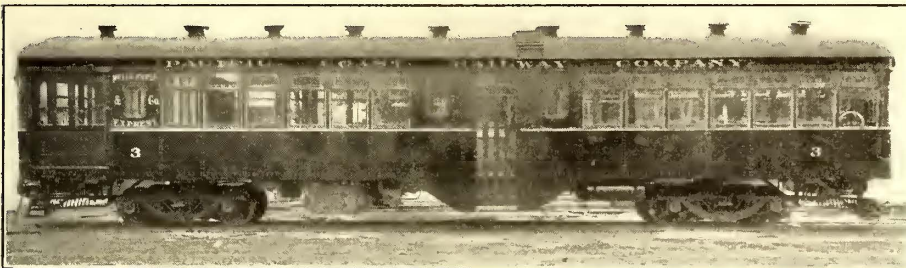
### SELECTIVE CUT-OUT FOR DAMAGED LAMPS

One of the primary difficulties in the way of obtaining the full benefit from tungsten-filament lamps in electric railway service has been the necessity for the use of small units. The smaller sizes of tungsten lamps are more fragile than those of the old carbon type and their efficiencies are materially less than when the lamps are made up in the larger sizes. Heretofore the general practice in car light-



Selective Cut-Out for Damaged Incandescent Lamps

ing has been to use two or more five-lamp circuits so that the number of lighting units has been comparatively large with a consequent necessity for using lamps of small



Pacific Coast Car—Side and End Views Showing Drop Siding and End Doors for Baggage

grained to match. The partitions are of steel covered with mahogany veneer. The smoking compartment and the main compartment are finished in solid mahogany. Seats in both compartments are of "Walk-Over" type furnished by the Hale & Kilburn Company. Both compartments are provided with continuous bronze package racks, and these as well as the saloon fittings were made by the Dayton Manufacturing Company.

The roof of the car is a true ellipse in form and is of steel plate, divided into panels by mahogany carlines. The ceiling throughout the car is enameled in white and forms a reflector for distributing the light evenly throughout the compartments.

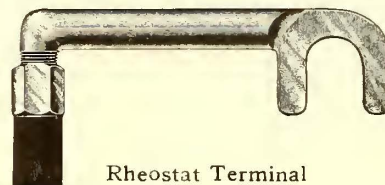
The car body is mounted on Baldwin trucks, provided with compensated ball center plates and roller side bearings and rolled steel wheels, the gage of the wheels being 36 in. The trucks are equipped with four Westinghouse interpole motors of special design to suit the 36-in. gage, the control being of the Westinghouse H.L. type. The motors are geared for a speed of 50 m.p.h. The brakes, which were furnished by the Westinghouse Traction Brake Company, are of the combined automatic-straight-air pattern with graduated release and the car is equipped with Tomlinson radial drawbars with heads of the standard M.C.B. pattern.

The car is insulated throughout against heat and cold with cork insulation 1 in. thick, the cork being cemented to the outside plates and covered on the inside by either steel plate or mahogany veneer. The weight complete is 59,900

candle-power. If in a car lighted by a single series of lamps one lamp burns out, the car will be left in darkness. There is ordinarily no way of telling which lamp is burned out without trying out every socket until the right one is found, and in order to overcome this difficulty the Nichols-Lintern Company has developed a manually operated selector switch which solves the problem by throwing into the circuit a sixth lamp to take the place of the burn-out. The only manipulation necessary is a simple turning of the knob of the selector until the lamps light.

### NEW RHEOSTAT TERMINAL

A new Dossert terminal connector, which has been substituted for the old screw-type terminals for making the connections from the dial to the grids of field rheostats in one of the largest power-generating stations of the Metropolitan district, is shown in the illustration. The shank of the connector is elongated so as to



admit the cable in a direct line, while the contact disk is slotted to fit over the grid and is offset slightly to the right or left respectively to facilitate the work of installation. The cable is held in the connector by the compression method characteristic of all connectors of the make.

### GASOLINE REPAIR CARS ON ILLINOIS TRACTION SYSTEM

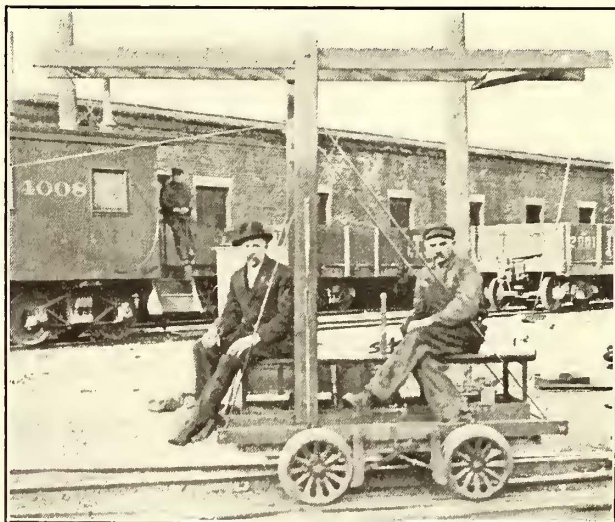
As a substitute for the regular line repair car for light repair work, the Illinois Traction System has adopted specially equipped gasoline motor cars to carry trouble men to emergency repair jobs. Continued experience has



Illinois Traction System—Extension Ladder on Gasoline Line Car

proved that these improvised line cars are available for service with minimum preparation, and since they are self-contained they are entirely independent of line and power house troubles. The adoption of this repair car on all divisions has actually produced a saving of about \$800 per month in trainmen's time and other labor expenses.

The motor cars used by this company are of the No. 33 Fairbanks-Morse type. Two of the accompanying illustrations show a car as equipped for summer and winter use respectively. The summer car has an extension ladder which is pivoted at the top of a well-braced upright standard and may be set and locked in a vertical position for working on the line. A small folding platform just below the top round of the ladder permits the linemen to work either from a standing or seated posture. When it is de-

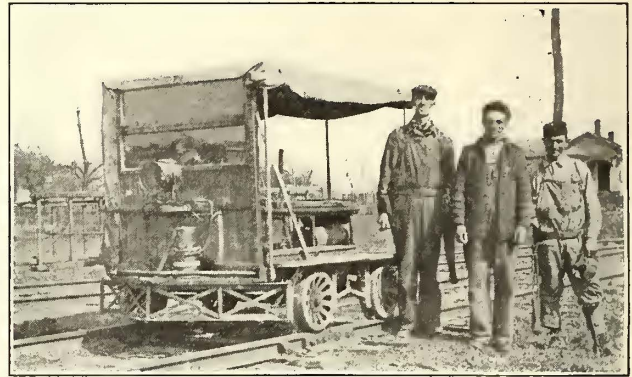


Illinois Traction System—Gasoline Emergency Car Equipped for Summer Use, Ladder Included

sired to move along the road the pivoted ladder is swung to a horizontal position to form a "T" with the standard as illustrated, and it is then held securely by two sections of light strand attached to the car frame. The motor car proper is as light as practicable to permit the men to remove it from the track to clear regular trains.

In winter the car consists essentially of an inclosed body

with an acetylene headlight and tail-light. The front of this inclosed body is built of wood, and the three other sides are provided with canvas drop curtains. The front end has a window through which the operator may have a plain view of the track ahead, and one side has a pipe



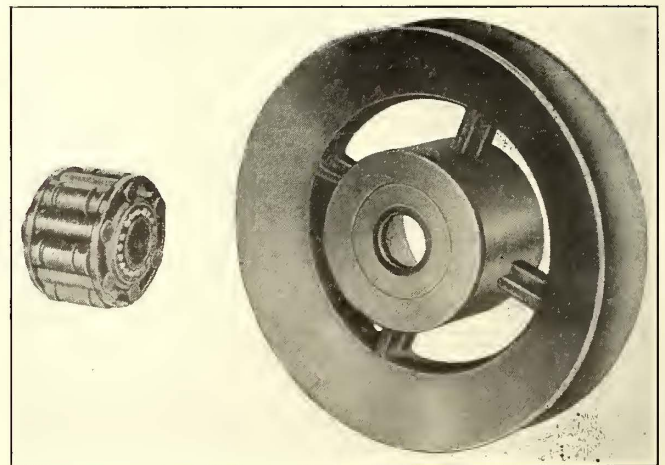
Illinois Traction System—Gasoline Emergency Car Equipped for Winter Service

rack for wire and linemen's tools. In making repairs with this car the linemen are required to work from a special extension ladder.

### ROLLER-BEARING TROLLEY WHEEL

The American Roller Bearing Company has had for some time past in experimental service on the Pacific Electric Railway several roller-bearing trolley wheels, of which one has run 7000 miles and shown no sign of wear. On its first test the car obtaining its current through this wheel ran at the rate of approximately 60 m.p.h. for twenty minutes, the wheel thus making 6000 r.p.m.

The anti-friction principle introduced by the rollers makes it possible to operate this bearing without lubrication. This is accomplished by separating the rollers which carry the load by idler spacing rollers, the latter revolving in a direction opposite to that of the load rollers between which they lie. This eliminates all sliding contact and provides a completely free rolling motion for both load and



Roller-Bearing Trolley Wheel with Roller Casing Removed to Show Idle and Load Rolls

spacing rollers, thus preventing any possibility of heating and scoring even though no lubricant is used.

The Public Works Department, Madrid, Spain, has invited tenders for the construction of three lines of electric tramways at Cadiz and also for the construction of an electric tramway at Barcelona.



# News of Electric Railways

## Third Arbitrator Appointed in Cleveland

Federal Judge John M. Killits, Toledo, Ohio, has been appointed the third arbitrator to consider the differences between the Cleveland (Ohio) Railway and the city administration by Judge Day of the United States District Court at Cleveland. The other two arbitrators were unable to agree upon a third man and Judge Day acted in accordance with the request of J. J. Stanley, president of the company, and A. B. DuPont, acting for the city. C. Nesbitt Duffy, Milwaukee, who will represent the company as arbitrator, could not be present at that time and Mr. Stanley acted in his stead.

Before making the appointment Judge Day called Mr. Stanley, Henry J. Davies, secretary, and H. J. Crawford, attorney of the company, and Mayor Newton D. Baker, A. B. Dupont and Street Railway Commissioner Peter Witt, acting for the city, before him and they agreed to accept Judge Killits. Judge Killits explained that he could not give more than a week or ten days to the work.

It was agreed that the arbitration shall cover only the right of the company to an increase in its operating and maintenance allowances. The city's representatives, however, stated that later on arbitration will be demanded upon the six questions that were proposed by the City Council. These include the reduction of fare to 3 cents cash, two tickets for 5 cents and 1 cent charge for transfers.

## Proposal for Immediate Traffic Relief in Montreal

The Montreal (Que.) Tramways has sent to the Mayor and comptrollers the final report embodying the company's proposals for the immediate relief of the congestion at the center of the system. These proposals embody the opening of certain portions of new streets to the cars and the re-routing of some lines, in order to enable people in the northern portions of the city to reach the shopping districts of St. Catherine Street without having to transfer. In its communication, which details the changes in routes, etc., the company said in part:

"The situation is complicated to some extent by the fact that it is necessary to provide temporary accommodations for the growing traffic of the city while the city and the company draw up permanent plans for the future. With this object in view we have drawn up proposals which we believe will enable the company to handle the traffic to the satisfaction of the public while we are working out the permanent plans. We have confined our suggestions to the changes that can be put into effect without delay. We estimate that we could add a further 200 cars over and above the 200 cars now being delivered, which would more than double the service over what it was in November, 1912. We are prepared to put these changes into effect at once and ask your board's co-operation to that end."

## Report on Boston Subway Extension

The Boston Transit Commission sent a report to the Massachusetts Senate on May 12 discussing the proposed extension of the Boylston Street subway from Boylston and Tremont Streets to Post Office Square and asking for more time to consider the project, which means the abandonment of the present authorized route to Park Street. By a referendum passengers traveling on the Boylston Street surface lines west of Copley Square voted in favor of the Post Office Square route by 37,848 against 31,481 ballots in favor of Park Street. The board states that the Boston Elevated Railway, as lessee of the subway, is willing to have the question reopened, but that the company is not willing on short notice to agree that it will abandon the Park Street route in favor of that to Post Office Square. The commission suggests connecting the Boylston Street subway with the Tremont Street subway between Charles and Tremont Streets pending the determination of a final terminal location. The company favors this plan, which would permit the introduction of a partial subway service by the summer of 1914 and do much to relieve the existing congestion on

the surface tracks of the Back Bay, besides facilitating the regular movement of traffic at Park Street. The board also suggests the cross-connection of the four subway tracks to be in service in Boylston Street easterly from Park Square as a convenience in operating the completed tubes. Changes in the Public Garden incline are favored in this connection. Regarding the question of cost, the board states that its chief engineer, Edmund S. Davis, estimates that the cost of the authorized route from Boylston and Tremont Streets to Park Street would be \$2,150,000, while the cost of what appears to be the most favorable route to Post Office Square from Boylston and Tremont Streets would be \$3,800,000. The length of the entire subway, if the terminus is at Park Street, will be 10,300 ft., and if it ends at Post Office Square, 12,000 ft. As the Boston Elevated Railway pays a rental of 4½ per cent on the cost of subways, the location of the terminal at Post Office Square would involve an increase of \$74,250 per year in the rental.

## Strike in Jamestown

On May 15, 1913, the Chautauqua Traction Company and the Jamestown Street Railway, the employees of which went on strike on May 1, 1913, announced that they were operating all of their cars except eight and that the old men were returning and that applications were being accepted from new men.

About two months ago the companies learned that the employees desired to change the runs from early day, late day and swing to early and late day, and in accordance therewith the companies prepared a bulletin requesting all motormen and conductors to signify their desire. There was only one vote against the proposal, and the companies changed the schedule of runs as the men desired. After doing this the companies decided voluntarily to advance wages as follows: First year, 19 cents; second year, 19½ cents; third year, 20½ cents; fourth year, 21½ cents; fifth, sixth and seventh years, 22½ cents; eighth and ninth years, 23½ cents; tenth year, 25 cents. Notice to this effect, together with the change of runs, was prepared and posted in the club room, to take effect on May 1, 1913.

Between the time of the posting of the notice in the club room and May 1, on which date the changes were to take effect, labor men succeeded in forming a union among the motormen and conductors, who declined to accept the voluntary advance in wages made by the companies and the change in run schedules and went out on strike on May 1.

On the night of May 1 the men formed into two or three squads and started to tear down wires and otherwise damage property. The companies anticipated that violence would be resorted to and instructed their power house superintendents and substation attendants to leave power on all night in order that they might know if any wires were being tampered with. The officers of the companies also furnished the police with a descriptive chart covering the inside and the interurban lines, showing the zones in which trouble might occur. The engineers at the power house were instructed to locate the trouble for the police if the power service was tampered with. The men on strike began operations by throwing ropes over the high-tension wires for the purpose of drawing them together and short-circuiting the lines. Their work was detected at the power house and substations. The police were notified and twenty-three arrests were made. Five men confessed having attempted to destroy property.

## Improvements in Trenton

The Trenton & Mercer County Traction Corporation, Trenton, N. J., recently furnished to Mayor Frederick Donnelly of that city a statement setting forth in detail the program of the company for improvements to be carried out during 1913. In a statement made to the *Trenton True American*, Rankin Johnson, vice-president of the company, referring to the work of the company already accomplished, said, in part:

"Since taking control of the operation of the street rail-

way properties in Trenton, this company has, during the past three years, reconstructed new a large part of its tracks and pavements through the center of Trenton, and it is our plan to continue this work by the complete reconstruction of 2 miles of track and pavement during this year. All of this construction has been carried on in accordance with the best modern standards. In addition to this work, we have each year expended large sums in making repairs to such portions of our pavement as had become worn out and we have thereby largely reduced the area requiring such repairs. While this is very early in the season, we have already electrically welded about 1000 rail joints, at the same time grinding down the joint so welded to a smooth surface and repairing the pavement. We have a force of more than 60 men in Trenton making repairs where needed to that part of the pavement which is under our jurisdiction. It can, therefore, be stated that before the end of the present season we will have reconstructed or completely repaired very nearly all of the pavement in the city which is under our care.

"We feel that we have largely improved the physical condition and efficiency of service of this property during each of the past three years, and we hope that our continued efforts to maintain and improve such conditions will receive recognition by the people of Trenton.

"In an enterprise whose operations are so intimately associated with the daily lives of many people, we cannot hope entirely to avoid adverse criticism, but we ask that such criticism be tempered by fairness and based on facts. As our aim to improve conditions and service is sincere, we trust that in the consideration of any question concerning us which may arise we may have the opportunity of stating our attitude."

#### Municipal Ownership Negotiations in Toronto

The Toronto Board of Control at a recent meeting decided to withdraw the bill before the Ontario Legislature providing for the purchase of the property of the Toronto Railway and Toronto Electric Light Company, but on a special meeting of the Council being called the members declined to authorize the withdrawal of the bill and reaffirmed their previous decision. Hon. Adam Beck, chairman of the Hydro-Electric Power Commission of Ontario, has objected to the purchase on the ground that the city would be required to continue the power contracts between the Toronto Railway, the Toronto Electric Light Company and the Toronto Power Company for the remainder of the term of the railway franchise. Mr. Beck claims the city could not carry out this plan under the terms of its contract with the Hydro-Electric Commission, which contract confines the city to the use of power supplied by the commission.

The third reading of the bill was fixed for April 21, but it did not take place. Instead the original bill was remodeled and referred to the private bills committee. A new clause was inserted providing that no agreement for the purchase of the Toronto Electric Light Company shall be submitted to the electors until it is approved by the Ontario Hydro-Electric Commission and the Lieutenant Governor in Council, and another clause was added prohibiting the amalgamation of the property of the Toronto Electric Light Company with that of the Civic Hydro-Electric System. The bill was passed April 23, with all reference to the Toronto Electric Light Company eliminated, the previous legislation giving authority to purchase this company being still in force. It is thus necessary to submit two bylaws to the vote, instead of one as originally intended. It is understood that, should the companies actually desire to sell, the properties must be taken over by the city together, while the legislation being promoted would provide for submitting the question of taking over of the properties to the ratepayers separately.

Under the bill power is given to purchase the Toronto Railway and also the rights and interests of all companies and persons owning or operating electric or street railways within the city or such parts of them lying outside the city as the city may deem it expedient to purchase. For the purpose of providing for such purchases the city may borrow the money required and issue debentures payable in not more than forty years, without the necessity of submitting

the debenture issue to the electors. The debentures are not to be counted as part of the general debenture debt of the city. The money borrowed may be secured by a mortgage upon all electric and street railways and electric-light systems owned by the corporation, including those purchased under the act. The management of the street railway and electric light systems is to be vested in a commission to be appointed by the City Council, to consist of three members, none of whom is to be a member of the Council.

#### Transportation Discussed at City Planning Conference

At the city planning conference which closed in Chicago on May 9, 1913, the subject of transportation in its relation to city development and congestion received a great deal of attention. Among those who contributed to the discussion on transportation were Edward M. Bassett, formerly a member of the Public Service Commission of the First District of New York, and Dr. Werner Hegemann, general secretary of the German City Planning Conference. Mr. Bassett while a member of the New York Commission studied railway operation in London, Paris, Berlin, Vienna, Munich and Budapest. Perhaps his greatest service to the commission was in connection with the framing of the New York rapid transit law and in pushing the elimination of dangerous grade crossings. Mr. Bassett said at Chicago:

"A modern city after it gets more than 1,000,000 people needs rapid transit so that people will not have to travel so many hours in going from the traffic centers to their homes. This movement should not be directed toward a single center. No great city can afford to build up with one congested center. It must, like London, develop numerous transit centers.

"There was a tendency in New York constantly to pile one business stratum closely on another and then begin apartment houses toward Harlem and the Bronx so that the city became essentially a long city. A long city is not an economical city from a transportation or housing point of view. A round city has the largest area with the shortest distances to its traffic centers, but a long city has the smallest area with the longest distances.

"Rapid transit routes, if built as diameter lines, will help to make a round city and at the same time produce many traffic centers. I mean by diameter lines lines that start in the suburbs and go through a dense part of the city and out again at another suburb. Thus a train will start in the morning, picking up its load as it approaches the center of the city, distributing it through the entire inside part of the city, then go out into the suburb. There it changes its direction, swings back again, and distributes its load through the city. The same process is repeated in the evening. Radial lines of this sort were for a long time needed in New York City."

Dr. Hegemann objected to the use of Paris as a model for Chicago. He stated that transportation and housing in Paris were the worst in the world and said that in order to secure a comprehensive transportation plan for a large city the opinion of the leading transportation experts of the country, if not of the world, must be asked. According to Dr. Hegemann, modern transportation, if thoroughly applied to city planning, will produce a type of decentralized city, which will contain many more green spaces, gardens and parks than the crowded cities of the past.

#### Rules for Procedure Before Missouri Commission

John M. Atkinson, of the Public Service Commission of Missouri, in discussing the rules for procedure before the commission, said recently:

"The rules abolish all technicalities in procedure. A plain statement only of the complaint is required to be made, verified by the complainant. Complaints may be amended at any time in the discretion of the commission.

"The commission will hold regular monthly sessions at its office in Jefferson City on the first Tuesday in each month, convening at 9 a. m. Under the law and the rules the commission is continuously open for the transaction of business during every day of the week, except Sundays and legal holidays. Other sessions of the commission will be held in Jefferson City and elsewhere as the business requires.

"No rate of any public utility in the State can be increased after April 15, when the law became effective, without thirty days' notice and consent of the commission.

"One of the features of the rules is the supervision to be exercised over the issuance of stocks, bonds and notes by public service corporations of the State. In addition to scrutinizing the purpose for which such bonds, stocks and notes are to be issued the commission will require an itemized statement of the expenditure of such moneys, verified by oath of some officer of the public service corporation, to be filed with the commission at the end of each six months, showing what disposition has been made of the proceeds of the sales of such stocks, bonds and notes. In this way the commission feels that all moneys and obligations of public service corporations on which the public has to pay a return in rates should be honestly invested and properly expended for the interest of the public as well as the individual utility.

"The rules of the commission set out in full forms for complaints, applications and other proceedings before the commission, which will be of interest to lawyers practicing before the commission and also to all utilities under regulation of the commission.

"Under the rules, when a complaint is received, an order of the commission is made that the party complained against must satisfy the complaint or answer it within ten days thereafter; also a copy of the complaint is sent the party complained against. If at the end of ten days the complaint is not satisfied, then the commission enters an order for a public hearing, giving the party complained against ten days' notice of such time and place. In this way it is hoped that the business of the commission will be expedited without long-drawn-out litigation."

#### Provisions of Detroit Municipal Ownership Amendment

The municipal ownership amendment under consideration by the charter commission at Detroit, Mich., has been considerably changed from the original plans for the operation of street railways. One change provides for the election of the three members of the street railway commission and fixes the salary of each member at \$5,000 per year. The original idea was to make the commission appointive and have the members serve without salaries. The latest draft takes the responsibility for the operation of any municipally owned road from the Mayor and places it with the commission. The commission is also made non-partisan. The expression "a system of transportation" has been substituted in the amendment for "street railway system" in order that provision may be made for trackless trolleys and buses. Corporation Counsel Lawson, however, does not believe that the bus lines could ever be operated legally under the amendment. In the case of the death of a member of the commission, his successor is to be selected by the other two members. The commission will appoint its own general manager, superintendents and other employees. Approval of new lines and extensions is left with the City Council.

Because of the fact that the question of the occupation of Fort Street by the Detroit United Railway is now before the United States Supreme Court, the board of estimates is in doubt as to what steps should be taken in regard to repaving portions of that thoroughfare. Under the old franchise, the company would be required to pay for the pavement between its tracks, but with its right to occupy the street in dispute, the city cannot be certain that any of the funds for paving can be secured from the company.

Arguments were presented before the United States Supreme Court at Washington on May 6, 1913, in the suit of the Detroit United Railway against the city of Detroit in relation to the company's occupancy of Fort Street. Attorneys for the city argued that no federal question had been raised in the matter, but that it is a difference between the city and the company that should be settled in the state courts. A decision will probably not be reached for some time, as the arguments were upon a motion to dismiss, advance or affirm the decision of the lower courts.

**Indiana Employers' Liability Act Constitutional.**—The constitutionality of the Indiana employers' liability law was upheld on May 5, 1913, by the Supreme Court in the

suit of Haynes L. Hackett against the Chicago, Indianapolis & Louisville Railway.

**Strike in Colorado Springs.**—Service on the Colorado Springs & Interurban Railway, Colorado Springs, Col., was resumed on May 12, 1913, following an agreement reached by the officers of the company and the employees. The men were on strike only one day.

**Strike in Fort William.**—Service was suspended on May 13, 1913, on the Port Arthur & Fort William Electric Railway, Port Arthur, Ont., as a result of a strike of the employees of the company for higher wages and shorter hours. The road is owned by the municipalities which it connects and is under the management of a joint commission appointed by the cities of Port Arthur and Fort William.

**Strike in Roanoke.**—There has been little or no change in the situation in connection with the strike of the union conductors and motormen of the Roanoke Railway & Electric Company, Roanoke, Va., which began on May 1, 1913. Committees from the Common Council and the Board of Aldermen have failed to bring about an adjustment of the differences. The strike has been characterized by the absence of disorder.

**Municipal Railway Plan Defeated in Tacoma.**—The special election held in Tacoma, Wash., on May 11, 1913, to authorize an issue of \$250,000 of bonds to provide funds for municipal purposes resulted in the defeat of all the propositions which were submitted. The most important proposal was to spend \$87,000 for a municipal railway across the new city bridges to the factory and railroad terminal districts on the tidelands.

**Tornado Damage Fund Distributed Among Omaha Employees.**—With a fund raised by fellow employees and contributions from officers, directors and the company itself, the twenty-eight employees of the Omaha & Council Bluffs Street Railway, Omaha, Neb., who were affected by the recent tornado have had 76 per cent of their losses in the storm made good. The fund amounted to \$7,996. Allotments to individuals ranged from \$3 to \$1,615.

**Demand for Reinstatement of Carhouse Employees in New Haven.**—It was announced on May 15, 1913, that the members of the union among the employees of the Connecticut Company, New Haven, Conn., had voted to strike if necessary to uphold their executive committee in the latter's demand on the company for the reinstatement of certain carhouse employees who were discharged recently. The company maintains that the carhouse employees are not included within the scope of the provisions of the two-year agreement between the company and the union.

**"Solving the Street Car Problem in Great Cities."**—Richard Spillane contributed to the St. Louis *Globe-Democrat* of May 4, 1913, an illustrated article, "Solving the Street Car Problem in Great Cities," which carried the sub-caption "Devices to Relieve Congestion of Traffic and to Save the 'Missed Fare' and How They Have Been Applied to the Service with Success." Mr. Spillane referred particularly to the work in car design accomplished by Duncan McDonald, J. S. Doyle and Thomas E. Mitten, portraits of whom accompanied the text, together with reproductions of views of the single-deck and the double-deck stepless car.

**Tentative Saginaw Franchise Unsatisfactory.**—The tentative blanket franchise drawn by the Board of Trade of Saginaw, Mich., in favor of the Saginaw-Bay City Railway is said to be unsatisfactory to the company. J. A. Cleveland, general manager of the company, is quoted as follows: "The ordinance is unfair in its provisions, impracticable in its workings, and could not be accepted by this company or any other company for operating a street railway in Saginaw." The directors of the Board of Trade have referred the ordinance back to the special committee, with the request that they enter into negotiations with the company with the idea in view of arriving at an agreement.

**Application Made for Elevated Railway Rights in Los Angeles.**—The Pacific Electric Railway, Los Angeles, Cal., has applied to the City Council for a forty-year franchise for a four-track elevated railway from the present Main Street terminal east to San Pedro Street, at an estimated cost of \$600,000. This is the first step in a plan which contemplates the elimination of grade crossings within a good part

of the city. The elevated railway will commence at San Pedro Street and extend thence to an overhead crossing at San Julian Street, where the two tracks will be increased to four, extending thence to the main station, crossing Wall Street, Maple Avenue and Los Angeles Street. The present elevated structure over Los Angeles Street will be incorporated in the new elevated. Right-of-way for the elevated structure has already been purchased.

**Suggested Use of Illinois Canal for Railroad.**—Governor Dunne of Illinois has announced as an administration policy the conversion of the Illinois & Michigan Canal from Chicago to Lockport into a subway which will provide entrance for steam and electric railways to the heart of Chicago. The Governor has called a meeting of the commissioners of the Illinois & Michigan Canal, the trustees of the Sanitary District of Chicago and representatives of the Chicago plan commission, to be held in Springfield, to initiate active steps in the matter. Broadly stated, the proposal of the Governor is to drain the canal between Chicago and Lockport, dredge out the accumulated dirt, lay tracks on the canal bed, roof it over and use the lid as a boulevard. The subway could be used by the Rock Island, the Alton, the Santa Fé, the Chicago, Joliet & Eastern steam roads or the McKinley electric lines.

**New York Rapid Transit Route Rescinded.**—The Public Service Commission for the First District of New York has rescinded a resolution passed in July, 1912, laying out a rapid transit route in Thirty-fourth Street, Manhattan, for use either as a subway or a moving platform. The plan aroused considerable opposition from property owners, and last summer the commission withdrew the route and general plan from the Board of Estimate and Apportionment, where it had been sent for approval. Since that time several hearings have been held and the fear was expressed that the construction of a subway near the surface under Thirty-fourth Street would interfere with the construction of the north and south lines in Seventh Avenue and Broadway. The commission's action in canceling the route for the present was taken without prejudice to the future laying out of a cross-town route in Thirty-fourth Street, if it should be deemed advisable.

**Terminal Plans of Public Service Railway.**—The members of the Board of Works of Newark, N. J., and representatives of the Public Service Railway discussed on May 5, 1913, the application of the company for the twenty-seven franchises asked in connection with the proposed electric railway terminal in Newark, the plans for which were described in the *ELECTRIC RAILWAY JOURNAL* for Feb. 8, 1913, page 246. Following this meeting Thomas N. McCarter, president of the Public Service, in a letter to the board, made a statement of facts covering the operations of the company in acquiring or contracting through its subsidiary real estate company approximately \$1,500,000 worth of property needed for the terminal. The engineering plans for the building and trackage have been completed, and on May 6 a contract was entered into with the Newark Cement, Paving & Construction Company which provided that the buildings on the property which has been acquired should be razed by June 1, 1913.

**Portland, Eugene & Eastern Railway Improvements.**—The program for the improvement of the Portland, Eugene & Eastern Railway, Portland, Ore., to which reference has been made previously in the *ELECTRIC RAILWAY JOURNAL*, calls for the reconstruction and electrification of approximately 180 miles of steam railroad. The lines now under construction are: Canby-Molalla, 11.35 miles, and Monroe-Eugene, 25.2 miles. The proposed lines follow: Oswego-Hubbard, 21 miles of double track; Hubbard-Salem, 19.7 miles; Molalla-Silverton, 15.5 miles; Independence-McNary, 4.31 miles; Albany-Wellsdale, 6.52 miles. The main reinforced concrete inspection repair and paint shop will contain 40,200 sq. ft. of space. Other buildings in connection with the shop follow: blacksmith shop, 20 ft. by 40 ft.; inspection office, 16 ft. by 32 ft.; washing slab, 38 ft. 6 in. by 165 ft.; washing slab, 50 ft. by 65 ft.; boiler house, 40 ft. by 80 ft. Reinforced concrete substations will be erected at the following points at the following approximate costs: Oswego, \$9,000; Forest Grove, \$4,200; Dundee, \$4,200; McCoy, \$5,500; Corvallis, \$5,500; Monroe, \$5,500; Eugene, \$5,500; Hubbard, \$5,500; Salem, \$5,500.

**Description of Third Avenue System.**—The New York Edison Company, New York, N. Y., published as a supplement to the *Edison Monthly* for May, 1913, an illustrated description of the system of the Third Avenue Railway, New York, of which Frederick W. Whitridge is president. The supplement contains sixteen pages and cover and was bound separately from the *Monthly* itself. Referring to the contract under which the Third Avenue Railway turned its Kingsbridge power station over to the New York Edison Company for operation the *Edison Monthly* says: "It is impossible to predict the economies forthcoming, due to better load factor and diversity factor, when the systems are combined. For instance, with three stations in hand, two can be kept under constant load with the third as reserve for peak load conditions and other emergencies. As the possibilities are great, the central station engineers may be relied upon to make the most of them. The credit due Mr. Whitridge and his associates in thus adopting central station service for the supply of this great system cannot well be overestimated." The cover of the supplement contains a halftone reproduction of a portrait of Mr. Whitridge.

## LEGISLATION AFFECTING ELECTRIC RAILWAYS

### ILLINOIS

The hearing of the public utility commission measures on May 6, 1913, before the joint committee of the House and Senate was devoted to explanations of the four measures. Professor Fairley, of Chicago University, appeared for the bill which is fostered by Governor Dunne, and Corporation Counsel Skinner of Chicago appeared for the measure advocated by Mayor Carter Harrison. The Dailey bill, presented by Chairman Dailey of the commission appointed by the Legislature two years ago, and the Ettelson bill were not represented and were discussed but slightly. Another hearing was set for May 14.

The Senate has passed the Olsen bill giving cities power to own and operate gas and electric utilities. Senator Beall's bill, aimed at the Chicago baseball parks, but drawn so as to include common carriers except surface street cars, requiring that all patrons be provided with seats and with ample accommodations, has been passed by the Senate. A bill restricting the employment of women by railroads and others to ten hours a day has been introduced by Senator Bailey. Three of the five members of the subcommittee of the committee on labor and industrial affairs are opposed to recommending the passage of the bill which provides that street car men must finish their ten hours of labor within twelve hours.

### MASSACHUSETTS

The electric railway merger bill affecting the western part of the State has been held up by an amendment offered by Robert M. Washburn, Worcester, to meet the objection of those who oppose the control of the electric railways by the New York, New Haven & Hartford Railroad. This amendment provides that the State Railroad Commission is to certify that the New York, New Haven & Hartford Railroad is financially able to carry out the provisions of the bill before the act becomes effective. The measure provides for the consolidation of the electric railways in Worcester, Springfield and Pittsfield and their control by the New York, New Haven & Hartford Railroad. Last year a similar measure was vetoed by Governor Foss and was passed over his veto by the House, but failed in the Senate.

### OHIO

Governor Cox of Ohio vetoed the Mills bill on May 6. This bill authorized municipalities to issue bonds in small denominations for the purchase of public utility properties. On the same date the Governor vetoed the Wise bill, drawn to give county commissioners authority to revoke franchises of street or interurban railways where the grant extended over twenty years. He called this one of the most drastic pieces of legislation enacted by the last General Assembly and said that there was a vast difference between legislation and confiscation. There has been some newspaper talk as to the possible avoidance of the Snyder indeterminate franchise bill, it being claimed that the measure was not signed by Speaker Swain in the House of Repre-

sentatives while the body was in session. Governor Cox signed the Snyder indeterminate franchise bill on May 6. This bill gives to the city of Cincinnati the right to grant the Cincinnati Traction Company an indeterminate permit in exchange for its fifty-year franchise, granted under the Rodgers act, and allows a settlement of the street railway situation in Cincinnati under plans agreed upon between the city and the company. All the other bills necessary to that settlement have been signed, except the one doing away with the necessity of securing the consents of property owners along a proposed line of railway. It will be necessary for the company or the city to secure consents of property owners in the usual way for the proposed loop line that is to be built by the city and operated under lease by the company in connection with its own properties.

#### PENNSYLVANIA

The Rockwell public utilities bill passed second reading in the House on May 14 with but one important amendment and was made a special order for third reading and final passage in the House for May 19 at 9:30 p. m. This amendment relates to the exchange of transfers between connecting street railways. All other suggested amendments, including attempts to give the commission control of stocks and bonds, to eliminate the provision that the commission might permit a company to go through a municipality without first securing the consent of the proper local authorities and to give the commission power to suspend increases in rates until they were approved, were defeated. The House voted 97 to 57 on an amendment to allow the commission to investigate the previous history and finances of corporations in order to fix rates.

The Democrats, whose party bill did not receive serious consideration when the committee returned the composite bill to the House, made ineffectual efforts to incorporate some features of their bill into the bill under consideration. They raised the point of order that the bill was unconstitutional because it referred to the full crew act enforcement only by the title of the act of 1911 and not by the text. This was overruled by Speaker Alter. A new title was inserted changing the phraseology and specifying authority over grade crossings and to a certain extent over municipalities.

The Democrats also attacked the provision empowering the commission to grant permission to a public service company to cross a municipality without consent of local authorities, contending that it was contrary to the cardinal doctrine of home rule and consequently to the spirit of the times. Spokesmen for the bill argued that this feature merely gave the commission authority to grant permission to cross a municipality, not to give service therein, and that the section was in the interest of long-distance corporations. A motion to strike out the whole section was defeated 84 to 79, while a motion to add a provision giving the commission power to suspend increases in rates until they are approved or disapproved also went down, 103 to 73. A motion to amend the bill to give the commission supervision over the issuance of stocks and bonds of public utilities companies was defeated.

During the consideration of the bill the House voted to permit Attorney-General Bell the privilege of the floor. An amendment offered by Mr. Allen which included loans for a period of less than one year in the provision dealing with short-term loans by public utilities was defeated, as was also an amendment to strike out the clause which provided that the taking over of less than the controlling interest in a corporation shall be lawful without the consent of the commission. Other amendments which were defeated were: Eliminating the requirement for adjustment of schedules of street railways to meet schedules of other lines and substituting therefor the Interstate Commerce Commission ruling; striking out the period in which a corporation could change rates without application to the commission so that nothing could be done without approval of the commission; striking out the clause giving the commission authority to pass upon the necessity of charters for public service companies.

The House passed the bill allowing the city of Philadelphia to raise \$40,000,000 for subway and transit developments by making personal property in each county taxable for county purposes instead of for state revenues alone.

The vote was 109 to 61. It is claimed that this bill would enable the city of Philadelphia to borrow on some \$600,000,000 more taxable property.

It is believed by many members that the General Assembly will adjourn by June 12.

#### WISCONSIN

Assembly bill 292, to allow passengers on street cars to ride free when not provided with seats, has been killed. The Senate refused to concur with the Assembly, by which the measure was passed. The bill relating to the distribution of the street railway tax passed by the Assembly is now in the hands of the Senate committee on corporations. Governor McGovern has signed Senate bill 421 to legalize certain acts of the Railroad Commission and to validate bonds issued and sold by any city for the purchase of a utility. Senate bill 347, amending the statutes relating to time of purchase of street railways by municipalities, has been concurred in by the House, but a motion to reconsider the vote will be acted upon this week. Another amendment bill, 302, relating to franchises of street railways, was returned to the Senate non-concurred in, following the recommendation of the Assembly committee on transportation. Senate bill 149, relating to appeals from decisions of the Railroad Commission, has been concurred in by the House.

#### PROGRAMS OF ASSOCIATION MEETINGS

##### Illinois Electric Railways Association

The meeting of the Illinois Electric Railways Association which it was proposed to hold on May 16, 1913, will be held at a later date to be fixed by the executive committee.

##### New England Street Railway Club

The regular monthly meeting of the New England Street Railway Club will be held on May 22, 1913, in the mahogany room of the New American House, Boston, Mass. Dinner will be served at 6:30 p.m., and the business meeting will be held at 8 p.m. The speaker will be H. W. Irwin, assistant superintendent of repairs of the Bay State Street Railway. His subject will be "The Training of Motormen," and the moving picture machine will be used to illustrate some of the points which he will make. There will be music during the serving of the dinner.

##### American Institute of Electrical Engineers

The annual meeting of the American Institute of Electrical Engineers will be held in the auditorium of the Engineering Societies Building, 33 West Thirty-ninth Street, New York, on May 20, at 8.15 p.m. At this meeting the report of the board of directors for the fiscal year ended April 30 will be presented and the result of the election of officers for the ensuing year will be announced.

The technical session will be under the auspices of the railway committee, and the following papers will be presented: "Twenty-four-Hundred-Volt Railway Electrification," by H. M. Hobart, and "Trunk Line Electrification," by Charles P. Kahler. The meeting will conclude with the usual smoker.

##### American Railway Association

The spring session of the American Railway Association will be held at the United Engineering Societies Building, New York, N. Y., on May 21, 1913, at 11 a. m. Reports will be presented by the executive committee, committee on transportation, committee on maintenance, joint committee on automatic train stops, committee on relations between railroads, committee on the safe transportation of explosives and other dangerous articles, committee on electrical working and committee on nominations. The election of a second vice-president will take place at this meeting. Two members of the executive committee, three members of the committee on transportation, three members of the committee on maintenance, three members of the committee on relations between railroads and three members of the committee on nominations are to be elected.

# Financial and Corporate

## Stock and Money Markets

May 14, 1913.

In the trading on the New York Stock Exchange to-day some slight recessions occurred in the active issues at the opening of business, but after the initial sales the market began to recover. All of the leading railroad and industrial issues moved in about the same way, with rallies immediately following initial losses. The total record of sales for the day was 180,234 shares as compared with 697,289 shares for the same day last year. Rates in the money market to-day were: Call,  $2\frac{3}{4}$ @3 per cent; sixty and ninety days,  $3\frac{3}{4}$ @4 per cent; four months,  $4\frac{1}{4}$ @ $4\frac{1}{2}$  per cent; five and six months,  $4\frac{1}{2}$ @ $4\frac{3}{4}$  per cent.

On the Philadelphia Exchange trading continued very light. A generally stronger undertone was the feature at the close.

The Chicago market to-day was broad, but the volume of trading was small. The demand for bonds is better.

In the Boston market to-day business was light and fluctuations, usually limited to fractions, were downward.

Trading in Baltimore to-day was very narrow, being confined to five issues. There was little demand for bonds.

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

|   | May 7 | May 14 |
|---|-------|--------|
| American Brake Shoe & Foundry (common).....             | 92    | 92     |
| American Brake Shoe & Foundry (preferred).....          | 130   | 130    |
| American Cities Company (common).....                   | 37½   | 37½    |
| American Cities Company (preferred).....                | 70½   | 70½    |
| American Light & Traction Company (common).....         | 380   | 370    |
| American Light & Traction Company (preferred).....      | 106   | 106    |
| American Railways Company.....                          | 37¾   | 38     |
| Aurora, Elgin & Chicago Railroad (common).....          | 42    | 42     |
| Aurora, Elgin & Chicago Railroad (preferred).....       | 84    | 84     |
| Boston Elevated Railway.....                            | 89½   | 89     |
| Boston Suburban Electric Companies (common).....        | 7½    | 7½     |
| Boston Suburban Electric Companies (preferred).....     | a66   | 66     |
| Boston & Worcester Electric Companies (common).....     | a8    | a8     |
| Boston & Worcester Electric Companies (preferred).....  | 43    | 43     |
| Brooklyn Rapid Transit Company.....                     | 89¾   | 89¾    |
| Capital Traction Company, Washington.....               | 120¾  | 120½   |
| Chicago City Railways.....                              | 150   | *150   |
| Chicago Elevated Railways (common).....                 | 25    | *25    |
| Chicago Elevated Railways (preferred).....              | 87    | *87    |
| Chicago Railways, pteptg., ctf. 1.....                  | 91½   | *91½   |
| Chicago Railways, pteptg., ctf. 2.....                  | 21    | *21    |
| Chicago Railways, pteptg., ctf. 3.....                  | 7     | *7     |
| Chicago Railways, pteptg., ctf. 4.....                  | 3½    | *3½    |
| Cincinnati Street Railway.....                          | 115   | 115    |
| Cleveland Railway.....                                  | 103¾  | 103    |
| Cleveland, Southwestern & Columbus Ry. (common).....    | 5½    | *5½    |
| Cleveland, Southwestern & Columbus Ry. (preferred)..... | 28¾   | *28¾   |
| Columbus Railway & Light Company.....                   | 18    | 18     |
| Columbus Railway (common).....                          | 69½   | 69½    |
| Columbus Railway (preferred).....                       | 82½   | 82½    |
| Denver & Northwestern Railway.....                      | 109   | 109    |
| Detroit United Railway.....                             | 72    | 72     |
| General Electric Company.....                           | 138½  | 137½   |
| Georgia Railway & Electric Company (common).....        | 119   | 117    |
| Georgia Railway & Electric Company (preferred).....     | 83¾   | 84     |
| Interborough Metropolitan Company (common).....         | 14½   | 14     |
| Interborough Metropolitan Company (preferred).....      | 50½   | 49¾    |
| International Traction Company (common).....            | 40    | 40     |
| International Traction Company (preferred).....         | 95    | 95     |
| Kansas City Railway & Light Company (common).....       | ..    | ..     |
| Kansas City Railway & Light Company (preferred).....    | ..    | ..     |
| Lake Shore Electric Railway (common).....               | 9     | 9      |
| Lake Shore Electric Railway (1st preferred).....        | 91    | 91     |
| Lake Shore Electric Railway (2d preferred).....         | 25    | 25     |
| Manhattan Railway.....                                  | 127   | 127    |
| Massachusetts Electric Companies (common).....          | 16    | 16     |
| Massachusetts Electric Companies (preferred).....       | 72½   | 73     |
| Milwaukee Electric Railway & Light Co. (preferred)..... | 100   | *100   |
| Norfolk Railway & Light Company.....                    | 26½   | 26½    |
| North American Company.....                             | 75    | 70     |
| Northern Ohio Light & Traction Company (common).....    | 80    | 80     |
| Northern Ohio Light & Traction Company (preferred)..... | 105   | 105    |
| Philadelphia Company, Pittsburgh (common).....          | 44    | 43¾    |
| Philadelphia Company, Pittsburgh (preferred).....       | 39½   | 40½    |
| Philadelphia Rapid Transit Company.....                 | 23¾   | 23     |
| Portland Railway, Light & Power Company.....            | 67½   | *67½   |
| Public Service Corporation.....                         | 114   | 114    |
| Third Avenue Railway, New York.....                     | a34¾  | 33½    |
| Toledo Railways & Light Company.....                    | 12    | 12     |
| Twin City Rapid Transit Co., Minneapolis (common).....  | 103½  | 103½   |
| Union Traction Company of Indiana (common).....         | 7½    | 7½     |
| Union Traction Company of Indiana (1st preferred).....  | 82    | 82     |
| Union Traction Company of Indiana (2d preferred).....   | 32    | 32     |
| United Rys. & Electric Company (Baltimore).....         | 27    | 27     |
| United Rys. Inv. Company (common).....                  | 23    | 23     |
| United Rys. Inv. Company (preferred).....               | 46    | 41     |
| Virginia Railway & Power Company (common).....          | 50    | 50½    |
| Virginia Railway & Power Company (preferred).....       | 90    | 90     |
| Washington Ry. & Electric Company (common).....         | 91½   | 91     |
| Washington Ry. & Electric Company (preferred).....      | 91¾   | 91     |
| West End Street Railway, Boston (common).....           | 74    | 71     |
| West End Street Railway, Boston (preferred).....        | 90    | 90     |
| Westinghouse Elec. & Mfg. Company.....                  | 61    | 61½    |
| Westinghouse Elec. & Mfg. Company (1st preferred).....  | 105   | 105    |

\*Last sale. aAsked.

## ANNUAL REPORT

### Western Railways & Light Company

The annual report of the Western Railways & Light Company, Champaign, Ill., shows the following results for 1912, as compared with the preceding twelve months:

|                      | 1911        | 1912        |
|----------------------|-------------|-------------|
| Gross earnings ..... | \$2,029,354 | \$2,267,259 |
| Expenses .....       | 1,270,982   | 1,421,829   |
| Net earnings .....   | \$758,372   | \$845,430   |
| Other revenue .....  | 15,540      | 27,570      |
| Total revenue .....  | \$773,912   | \$873,000   |

From this total net revenue as given above there was deducted interest on bonds, etc., in the amount of \$536,398, which left \$336,602 available for dividends. After \$160,035 had been deducted as dividends on the preferred stock, a balance of \$176,567 was carried to the surplus account for the period.

During the year there was expended for maintenance and renewals the sum of \$321,059, which was 14.16 per cent of the gross receipts as against 13.10 per cent for the preceding year. As usual, the company charged off a substantial amount for discount on bonds of the controlled companies, the amount last year being \$29,400. During the year there was expended on improvements \$682,506, which included the completion of the hydroelectric plant of the Northern Illinois Light & Traction Company at Marseilles.

W. B. McKinley, president, and H. E. Chubbuck, vice-president executive, say:

"The financial results of the company for the year ended Dec. 31, 1912, show an increase in gross earnings from operation of \$237,905, or 11.72 per cent; an increase in other revenue of \$12,029, or 77.41 per cent; an increase in operating expenses of \$150,847, or 11.87 per cent; an increase in net earnings from operation of \$87,057, or 11.48 per cent; an increase in total net revenue of \$90,887, or 12.80 per cent; an increase in interest on bonds of \$61,707, or 13 per cent; an increase in dividend on preferred stock of \$17,775, or 12.49 per cent; an increase in net surplus of \$19,605, or 12.49 per cent.

"The net surplus of the system for the year was \$176,567, equivalent to 3.90 per cent on the common stock of the company, as against 3.47 per cent for the preceding year.

"Owing to delays in ballasting, the line from Morris to Joliet was not taken over from the construction company in 1912. The net receipts of the Morris-Princeton line show an increase of \$53,832 for 1912 over 1911, which is largely due to through business over the additional 22 miles from Morris to Joliet. The prospects for the coming year are very encouraging.

"The hydroelectric plant of the Northern Illinois Light & Traction Company, mentioned in the report of 1911, was in full operation during the year. The gross earnings increased from \$121,593 in 1911 to \$189,020 in 1912, or over 55 per cent, and the net earnings from \$61,567 to \$90,484, or about 47 per cent.

"The highest water ever known in the Mississippi and Ohio Rivers was experienced at Cairo. The levees withstood the flood for several days, but finally broke and the interurban railway between Cairo, Mounds and Mound City was obliged to discontinue operation for sixty days. The high water materially affected the business of this entire community, stopping contemplated improvements and causing a setback to the Cairo property which will last several months.

"At Atchison, a comparatively new acquisition, extensive improvements have been made in the electric plant and the results from this department will be materially improved in 1913 over past operation. The gradual failure of natural gas in Kansas, which is distributed by this company in Atchison, has decreased the income from this source over previous years and will probably lead to the installation of an artificial gas plant in the near future.

"Properties purchased during this year were Mound City Light & Water Company, which supplies electricity and water to Mound City, 4 miles from Cairo, and will be operated by the Cairo company, electricity being furnished over a transmission line from the Cairo plant, and the Jefferson City Light, Heat & Power Company of Jefferson

City, Mo., which supplies gas and electricity to Jefferson City, the capital of Missouri, and furnishes current for the operation of the street railway.

"A new street railway franchise was secured at Quincy containing favorable terms. Track extensions were made to cross-town lines and four new modern cars ordered to take care of the additional service.

"At Wichita, owing to the general business stagnation, the gross receipts did not show the usual gain. Conditions give promise of improvement.

"The Western Railways & Light System is furnishing electric light and power to twenty-four cities and villages and to the inhabitants and industries therein.

"It is gratifying to report that there were no serious accidents on any of the properties and labor conditions remain exceedingly favorable."

**Reports of New York City Companies for Quarter**

The accompanying statement, showing the more important operating figures of the large street railway companies in Manhattan and Brooklyn for the quarter ended Dec. 31, 1912, has been prepared from the reports published by the Public Service Commission for the First District of New

| Company.  | Total Revenue Car Miles. | Number of Transfers Collected. | Number Fare Passengers. | Total Street Railway Operating Revenue. | Total Operating Expense. | Street Railway Taxes. | Total Gross Income. | Total Deductions† | Net Corporate Income. |
|---|--------------------------|--------------------------------|-------------------------|---|--------------------------|-----------------------|---------------------|-------------------|-----------------------|
| Hudson & Manhattan .....                        | 2,059,347                | no record                      | 15,504,073              | \$973,916                               | ‡\$337,900               | \$52,453              | ‡\$818,410          | \$810,306         | ‡\$8.103              |
| Interborough Rapid Transit—                     |                          |                                |                         |   |                          |                       |                     |                   |                       |
| Subway division .....                           | 16,752,926               | no record                      | 89,063,054              | 4,562,192                               | 1,700,565                | 97,078                | .....               | .....             | .....                 |
| Elevated division .....                         | 17,191,528               | no record                      | 80,909,792              | 4,132,096                               | 1,689,923                | 460,251               | 4,862,743           | 2,759,761         | 2,102,982             |
| Brooklyn Rapid Transit Companies                | 20,444,381               | 36,950,505                     | 118,052,793             | 6,085,162                               | 3,495,052                | 386,147               | 2,371,126           | 1,631,911         | 739,215               |
| New York Railways .....                         | 8,967,418                | *28,390,230                    | 69,496,668              | 3,581,884                               | ‡2,043,027               | 295,769               | ‡1,368,546          | 1,527,354         | ‡158,808              |
| Third Avenue (including Kings-<br>bridge) ..... | 1,819,322                | 2,441,461                      | 13,756,059              | 982,172                                 | 544,852                  | 68,227                | 606,706             | 241,561           | 365.144               |
| Union (including Bronx Traction)                | 2,577,340                | 5,879,260                      | 11,811,105              | 627,495                                 | 462,217                  | 40,341                | 131,383             | 104,508           | 26,875                |
| Coney Island & Brooklyn .....                   | 1,417,428                | 1,235,073                      | 6,805,931               | 341,354                                 | 237,440                  | 22,982                | 88,083              | 82,081            | 6,002                 |
| §Grand total.....                               | 79,614,652               | 84,506,060                     | 450,795,822             | \$23,574,878                            | \$12,308,347             | \$1,551,247           | \$10,672,684        | \$7,628,901       | \$3,043,782           |

\*Figures reported for period Oct. 1-16, 1912, said by company to be inaccurate. †The company has failed to make a charge for depreciation. In the case of the New York Railways litigation determining this is now in process. ‡Includes sinking fund accruals and other contractual or compulsory deductions. §Does not include the Brooklyn, Manhattan Bridge & North River Line: revenue car miles, 89,598; fare passengers, 301,583.

York. The grand total includes not only the returns of the companies mentioned but also the returns of all other companies reporting, whose detailed figures are not given in the table herewith published.

**Questions and Answers Under Uniform System of Accounts**

Members of the committee on a standard classification of accounts of the American Electric Railway Accountants' Association and representatives of the Interstate Commerce Commission have agreed on tentative answers to a number of questions raised in connection with the uniform system of accounts. While the members of the committee and the representatives of the commission agreed upon these answers, it is understood that the decisions do not necessarily represent the final conclusions of the commission and that they are subject to such revision as may be thought proper before final promulgation in the accounting bulletins of the commission. Some of the questions and answers follow:

Q. What accounts should be charged and credited with amounts paid and received in the redemption of transfers issued by two connecting electric railways?

A. The transfer arrangement is in effect a division of revenues for through service and the amounts paid to another company for the redemption of transfers should be charged to account No. 1, "Passenger Revenue" in the classification of "Operating Revenues," and the amounts received should be correspondingly credited to the same account.

Q. What account should be charged with the cost of a car body constructed for use as a portable substation?

A. Assuming that the car body in question is mounted on trucks as a car, the cost of its construction should be charged to account No. 38, "Other Rail Equipment," in the classification of "Expenditures for Road and Equipment of Electric Railways."

Q. What accounts should be charged with the wages paid by an electric railway to the crews of steam engines used in switching freight cars at terminals?

A. Operating expense account No. 61, "Freight and Express Conductors, Motormen and Trainmen."

Q. A city builds a new bridge of sufficient strength to carry heavy cars, and a railway company extending its lines over it is asked to pay the excess cost of the bridge over that of one built for ordinary highway travel only. To what account should the railway company charge such a payment?

A. Account No. 2, "Right of Way," in the classification of "Expenditures for Road and Equipment of Electric Railways." (See Case A-112.)

Q. An electric railway company is having a branch line built by contract for a lump sum, payment being made each month for the estimated portion of the work completed. No distribution of expenditures is furnished to the railway company, and it asks whether the entire cost of the branch line should be included in account No. 34, "Cost of Road Purchased," in the classification of "Expenditures for Road and Equipment of Electric Railways"?

A. It would be preferable to have a detailed distribution of the amounts paid among the several primary accounts

of the classification of "Expenditures for Road and Equipment" if such a distribution can be made on an equitable basis; otherwise, it would be proper to charge the entire cost to account No. 34, "Cost of Road Purchased."

Q. What account should be charged with interest accruing on receivers' certificates issued to equip an electric railway?

A. Such accruals should be charged to account No. 41, "Interest," in the classification of "Expenditures for Road and Equipment of Electric Railways," until the equipment acquired is put into service. Interest accruing after that time should be charged to income. (See Case 53.)

Q. To what account should receivers' allowances and expenses be charged?

A. To operating expense account No. 73, "Salaries and Expenses of General Officers," except that expenses incurred for legal services should be charged as indicated in the text of account No. 76, "Law Expenses."

Q. What account should be charged with the cost of renewing driveways at unloading tracks?

A. Account No. 25, "Buildings and Structures," in the classification of "Operating Expenses of Electric Railways."

Q. What account should be charged with counsel fees paid for the preparation of the legal papers required in the merger of one electric railway company with another?

A. Account No. 40, "Law Expenses," in the classification of "Expenditures for Road and Equipment of Electric Railways."

Q. To what account should an electric railway company charge the cost of concrete in which the ties are embedded and on which paving is laid?

A. The cost of the materials should be charged to account No. 5, "Ballast," in the classification of "Expenditures for Road and Equipment of Electric Railways," and the cost of labor to account No. 11, "Track Laying and Surfacing."

**Birmingham, Ensley & Bessemer Railroad, Birmingham, Ala.**—A circular has been issued regarding the first mortgage 5 per cent gold bonds of the Birmingham, Ensley & Bessemer Railroad dated March 1, 1911, and due March 1, 1941, but redeemable at 105 and interest on and after March 1, 1921, par value \$1,000, \$500 and \$100. The capitalization of the company is as follows: First mortgage gold bonds issued and outstanding, \$2,450,000; reserved for extensions, betterments, etc., \$1,050,000; total, \$3,500,000; capital stock (preferred, \$1,500,000; common, \$3,000,000), \$4,500,000. The cost of 28 miles of track recently completed and now in operation between East Lake and Ensley has been \$1,346,000, and about \$450,000 has been expended for uncompleted work on the Bessemer and Pratt City end, these amounts not including franchises and rights-of-way acquired. When the lines are completely equipped and in operation from East Lake to Bessemer and Pratt City there will have been issued about \$2,650,000 of bonds, leaving \$850,000 of the issue for further extensions and improvements. The lines at present extend from the eastern limits of Greater Birmingham through a densely settled residential and manufacturing section and through the center of Birmingham to Ensley. The ninety-nine-year franchise through Greater Birmingham covers the transportation of freight, and when the line is completed to Bessemer and Pratt City freight service will be inaugurated, aided by physical connection with steam railroads entering Greater Birmingham. Application for additional franchises has been made and reported on favorably by the city engineer, penetrating the entire business district and covering both North and South Birmingham. A contract is soon to be entered into with new hydroelectric interests whereby power will be purchased more cheaply in the future.

**Brazilian Traction, Light & Power Company, Ltd., Toronto, Can.**—A special meeting of stockholders of the Brazilian Traction, Light & Power Company has been called for May 23, 1913, to approve an increase in the capitalization by the issue of \$10,000,000 of 6 per cent convertible preferred stock and also an increase in the common stock to provide for the conversion of this preferred stock. The new preferred stock is convertible into the common stock at 120, the new stock to be paid for 50 per cent on May 31 and 50 per cent on June 30.

**Chicago (Ill.) City Railway.**—The Illinois Supreme Court has affirmed the decision of the Superior Court of Cook County in the suit brought by Clarence H. Venner as the holder of 200 shares of the stock of the Chicago City Railway. The Supreme Court held valid the agreement dated Jan. 1, 1910, creating the Chicago City & Connecting Railways Collateral Trust. The defendants included beside the Chicago City Railway and its directors the Calumet & South Chicago Railway, the Hammond, Whiting & East Chicago Electric Railway, the Southern Street Railway and the Chicago & Western Railway, the trustees and members of the committee named in the agreement and others. Among other relief asked for was an injunction restraining the combining, merging, consolidating or uniting of the property, franchises, earnings, capital stock or management of the Chicago City Railway with those of the other defendants or the elevated roads in the city. In answer to the contention that the trust agreement had practically effected a consolidation of the five street railway corporations by indirection, without compliance with the statute, the court holds that in spite of the common ownership of their stock the companies remain separate corporations and there has been no merger, the other companies being operated by the Chicago City Railway under contracts fixing the manner of operation, accounting and amount and time of payment by and to each company. Consolidation with the elevated roads cannot take place without the passage of an ordinance, and this step not being actually threatened or certain to happen if not enjoined, there was no ground for an injunction.

**Chicago (Ill.) Railways.**—A dividend of 6 per cent has been declared on the 8 per cent cumulative participation certificates, Series 1, of the Chicago Railways. Previous distributions had been made of 6 per cent in February, 1913; 6 per cent in October, 1912; 8 per cent in September, 1909, and an initial payment of 4 per cent in November, 1908. At present payments are still 10 per cent in arrears.

**Chicago & Milwaukee Electric Railroad, Chicago, Ill.**—An order has been issued by Federal Judge Landis authorizing the receiver of the Chicago & Milwaukee Electric Railroad to purchase the Waukegan, Fox River & Western Railway, which has 1 mile of track, for \$56,000. The acquisition of this line, over which the Chicago & Milwaukee Electric Railroad has been running its cars under agreement for some time, will make possible a considerable saving in operating expenses.

**Cleburne (Tex.) Street Railway.**—The Cleburne Street Railway has elected new officers as follows: A. M. Morgan, president; S. T. Shaw, vice-president, and T. B. Maples, secretary and treasurer.

**Cleveland, Southwestern & Columbus Railway, Cleveland, Ohio.**—The meeting at which the stockholders of the Cleveland, Southwestern & Columbus Railway were to vote on the refinancing plan was postponed from May 10 to May 17. The State Public Service Commission had not yet acted on the application to issue \$5,130,000 of bonds, \$1,500,000 of preferred stock and \$2,412,000 of second preferred stock, mentioned in the *ELECTRIC RAILWAY JOURNAL* of April 26, 1913, page 778.

**Colorado Mines, Railways & Utilities Corporation, Colorado Springs, Col.**—The Colorado Mines, Railways & Utilities Corporation has elected directors as follows: Allen L. Burris, president of the El Paso Consolidated Gold Mining Company; Albert Ehinger, Basle, Switzerland; Harry W. Davis, Wilmington, Del.; Jacob Halstead, director First National Bank, Mamaroneck, N. Y.; Oscar L. Hasey, Albany, N. Y.; Joseph C. Helm, Denver, Col.; George N. Miller, New York; Richard A. Parker, Denver, Col., and William H. Smith, Summit, N. J. The two vacancies which remain to be filled are one representing the London Syndicate and the other the Paris Syndicate. Allen L. Burris, of Cripple Creek, Col., has been elected president and W. H. Smith, Summit, N. J., secretary and treasurer of the company.

**Columbus, Magnetic Springs & Northern Railway, Delaware, Ohio.**—The Columbus, Magnetic Springs & Northern Railway suffered damage to the extent of \$10,000 as a result of the flood in March. This includes the losses to bridges and the power plant.

**Columbus, Marion & Bucyrus Railroad, Marion, Ohio.**—The property of the Columbus, Marion & Bucyrus Railroad was sold on May 10, 1913, for \$103,080 to James H. Caldwell, chairman of the bondholders' committee. Mr. Caldwell took possession of the property on May 11 and has appointed George Whysall, who was one of the receivers of the company, his agent in all matters pertaining to the operation and maintenance of the property. A new company, to be known as the Columbus, Marion & Bucyrus Railway, is being organized to take over the property and operate it.

**Electric Properties Company, New York, N. Y.**—A committee made up of John F. Wallace, Henry R. Hayes and Albert N. Chambers has been appointed to carry out a plan for the reduction and readjustment of the capital stock of the Electric Properties Company, which was taken over in June, 1912, by a syndicate composed of the Westinghouse Electric & Manufacturing Company, the Equitable Trust Company and William Morris Imbrie & Company, New York, as a medium for dealing in the securities of public service corporations. The plan provides for reduction of the present outstanding common stock of the company from \$6,000,000 to \$4,000,000. The amount of outstanding preferred stock is to remain at \$3,920,200. Provision will also be made for the funding of back dividends on the preferred stock from Feb. 1, 1910. The entire capital stock of Westinghouse, Church, Kerr & Company is owned by the Electric Properties Company.

**Fort Wayne & Northern Indiana Traction Company, Fort Wayne, Ind.**—A new trustee in the form of the Commercial Trust Company, Philadelphia, Pa., has been appointed under the mortgage securing the Fort Wayne & Wabash Valley Traction Company first consolidated mortgage 5 per cent gold bonds, to succeed the Trust Company of North America.

**Grand Rapids, Holland & Chicago Railway, Holland, Mich.**—Benjamin S. Hanchett, president of the Grand Rapids, Holland & Chicago Railway, and his associates are



reported to have disposed of their controlling interest in the stock of the company to interests representing the Commonwealth Power, Railway & Light Company. Mr. Hanchett is reported to have said that there will be no changes in the personnel of the company. He is quoted as follows: "The principal object in selling is to secure the additional financial assistance for the Holland interurban that will grant the fullest development of the road. We will improve the roadbed, build new bridges and add a complete equipment of steel cars. Four such cars will be in service by June and will be used on the fast steamboat service between Grand Rapids and Holland, connecting with the Chicago boats, giving rapid service for Michigan travelers to Chicago."

**Hudson & Manhattan Railroad Company, New York, N. Y.**—The Public Service Commission for the First District of New York has received an application from the Hudson & Manhattan Railroad, operating the tunnels under the Hudson River, for the approval of a proposed issue of new bonds in connection with the readjustment of the debt of the company. William R. Willcox, formerly chairman of the Public Service Commission for the First District, is one of counsel for the company. The company now has authority to issue \$100,000,000 in bonds and has outstanding \$67,148,000 of 4½ per cent bonds. The application asks for the approval of two proposed mortgages as a substitute for the existing mortgage. One of the proposed mortgages is to the Central Trust Company, as trustee, and is to be known as the first lien and refunding mortgage; the other to the Guaranty Trust Company, as trustee, to be known as the adjustment income mortgage. Both mortgages are dated Feb. 1, 1913. The first lien and refunding mortgage is to secure a bond issue not exceeding \$65,000,000 and the adjustment income mortgage to secure one not exceeding \$33,574,000. All of the adjustment income bonds and \$37,035,000 of the first lien bonds are to be issued at once, the remainder of the latter, \$27,965,000, being reserved for future issue to redeem underlying bonds having a prior lien upon portions of the property mortgaged. The new issues will be used to refund the \$67,148,000 in outstanding bonds and the remainder, \$3,461,000, are to be sold to provide money for additional real estate, improvements, car-purchasing instalments, expenses and readjustments, working capital, etc. The new issues are made in accordance with the plan for debt readjustment already approved by the directors and bondholders. Under this plan the fixed charges for interest will be only \$1,851,750 a year against \$3,021,660 a year now being paid on the outstanding bonds. The charge of \$1,851,750 will be the interest on \$37,035,000 of the first lien bonds. The interest on \$33,574,000 of adjustment income bonds will be payable only out of surplus income. The company will also receive, by an assessment of \$8.50 a share on the stockholders, cash to the amount of \$3,845,148, which will be used for improvements, back taxes, etc. The result of the readjustment will be a decrease in the bonded debt on which interest must be paid from \$67,148,000 to \$37,035,000 and a reduction of the annual interest charge from \$3,021,660 to \$1,851,750.

**Illinois Traction System, Peoria, Ill.**—The Illinois Traction System has declared an initial quarterly dividend of three-quarters of 1 per cent on the \$9,984,900 of common stock, payable on May 15, 1913, to holders of record of April 30.

**Interborough-Metropolitan Company, New York, N. Y.**—Judge Hough heard on May 7, 1913, the final arguments in the case brought in the Federal District Court by the Continental Securities Company asking for the dissolution of the Interborough-Metropolitan Company and attacking the recent issue of bonds by the Interborough Rapid Transit Company. Judge Hough gave counsel till May 17 to submit briefs.

**Kankakee & Urbana Traction Company, Urbana, Ill.**—The stockholders of the Kankakee & Urbana Traction Company have voted to increase the capital stock of the company from \$500,000 to \$1,000,000 and have authorized the board of directors to issue bonds to the amount of \$1,000,000 for the extension of the road from Rantoul to Paxton.

**Lake Shore Electric Railway, Cleveland, Ohio.**—The Lake Shore Electric Railway has been authorized by the Public Service Commission of Ohio to issue its general

mortgage 5 per cent gold bonds of the face value of \$63,000 at not less than 85, the proceeds to be used to reimburse the income account for expenditures made during the year ended Dec. 31, 1912, for the construction of additions and betterments.

**Louisville & Northern Railway & Lighting Company, New Albany, Ind.**—The Louisville & Northern Railway & Lighting Company, the Louisville & Southern Indiana Traction Company and the other public utility companies operating in New Albany have elected new officers in compliance with the provision of the public utilities law passed by the last Indiana Legislature requiring officials of such companies to be residents of Indiana. Heretofore Samuel Insull, Chicago, had been at the head of the companies. The new officers are as follows: Chester P. Wilson, Indianapolis, president of the Louisville & Northern Railway & Lighting Company, Louisville & Southern Indiana Traction Company, United Gas & Electric Company and New Albany Water Works; Howard L. Olds, Indianapolis, vice-president of the United Gas & Electric Company and New Albany Water Works, and Frank Smith, vice-president of the two electric railways. John F. Strattan, New Albany, is the new treasurer for all of the companies, and Ira E. Guthrie, Indianapolis, is secretary of all of the companies.

**Massachusetts Electric Companies, Boston, Mass.**—A sale at 98.60 and interest, yielding 5¾ per cent, of the new refunding \$3,100,000 collateral trust 5 per cent gold notes, par value \$1,000, dated May 1, 1913, and due May 1, 1915, has been announced by the Equitable Trust Company, New York, for the Massachusetts Electric Companies. This company is a voluntary association owning the entire common stock of the Bay State Street Railway. The capitalization of the Massachusetts Electric Companies after this note issue will be: Preferred stock, 4 per cent cumulative, \$23,105,800; common stock, \$14,293,100, and coupon gold notes, 5 per cent, due May 1, 1915, \$3,100,000. These notes are issued under a trust agreement with the Old Colony Trust Company and the proceeds are to be used to retire the balance of \$3,700,000 of 4½ per cent gold notes which mature on July 1, 1913.

**New Orleans Railway & Light Company, New Orleans, La.**—The New Orleans Railway & Light Company recently sold to Bertron, Griscom & Company, New York, N. Y., \$4,000,000 of three-year 6 per cent gold debentures due on June 1, 1916, of which \$2,500,000 will be issued immediately for the payment of maturing obligations and for extensions and improvements. The remainder of the debentures will be sold for improvements and extensions during the next three years.

**Pacific Electric Railway, Los Angeles, Cal.**—The California Railroad Commission has authorized this company to issue \$6,839,000 of 5 per cent first mortgage bonds, the proceeds to be used in extensions and additions, as noted in the *ELECTRIC RAILWAY JOURNAL* of Feb. 1, 1913, page 229.

**People's Traction Company, Galesburg, Ill.**—The property of the People's Traction Company, which operates an electric interurban railway between Galesburg and Abingdon, has been sold to the McKinley syndicate, which now controls 1375 of the 1500 shares of stock of the company. With the sale of the controlling interest, the directors of the People's Traction Company resigned and new directors were elected. The retiring directors are C. S. Harris, Frank W. Harris and J. D. Welsh. H. H. Carnahan was chosen as the new president, with J. A. Knolton, Peoria, and E. Wright, Fowler, Peoria, as the other directors.

**Springfield, Clear Lake & Rochester Interurban Railway, Springfield, Ill.**—Master in Chancery Pfeifer has decreed that the property of the Springfield, Clear Lake & Rochester Interurban Railway be sold under foreclosure proceedings brought by the First Trust & Savings Bank, Springfield. Exceptions were filed by all parties to the suit and the case will be heard before Judge James A. Creighton in the Sangamon County Circuit Court. Workmen employed on the road six months prior to the filing of the foreclosure proceedings and six months thereafter have prior liens on the sale, according to the decree.

**Texas Power & Light Company, Dallas, Tex.**—The Southwestern Utilities Company, the financing corporation of the Texas Power & Light Company, has declared an

initial dividend of one-half of 1 per cent, payable on June 2 to stock of record May 20. In connection with this dividend the Electric Bond & Share Company, New York, N. Y., will pay to holders of voting trust stock certificates of the Southwestern Utilities Company of record May 20 the amount of dividends represented by the stock deposited, and also to the subscribers of the five-year 6 per cent notes of the company the amount of dividend payable on account of stock represented by the deposit receipts to which subscribers will be entitled when note subscriptions are paid in full.

**United Railways Investment Company, San Francisco, Cal.**—A committee composed of George W. Bacon, Sidney H. March, Mason B. Starring, Patrick Calhoun and George H. Bean was appointed at the annual meeting recently to formulate a plan to resume dividends on the \$16,000,000 of 5 per cent cumulative preferred stock of the United Railways Investment Company or adjust the overdue dividends, which amount to about 3½ per cent.

**Winchester & Washington City Railway, Winchester, Va.**—The Winchester & Washington City Railway has changed its name to the Northern Virginia Power Company. The company has applied itself to supplying power to municipalities and manufacturers, but has in prospect the construction of electric railways. L. F. Cooper is president of the company.

#### Dividends Declared

Illinois Traction Company, Champaign, Ill., quarterly, three-quarters of 1 per cent, common.

Rochester Railway & Light Company, Rochester, N. Y., quarterly, 1¼ per cent, preferred.

### ELECTRIC RAILWAY MONTHLY EARNINGS

| AMERICAN RAILWAYS COMPANY, PHILADELPHIA, PA.               |            |                |                    |              |               |             |
|--|------------|----------------|--------------------|--------------|---------------|-------------|
| Period   |            | Gross Earnings | Operating Expenses | Net Earnings | Fixed Charges | Net Surplus |
| 1m.,   | April, '13 | \$399,664      | .....              | .....        | .....         | .....       |
| 1 "  | " '12      | 374,346        | .....              | .....        | .....         | .....       |
| 9 "  | " '13      | 3,838,469      | .....              | .....        | .....         | .....       |
| 9 "  | " '12      | 3,643,346      | .....              | .....        | .....         | .....       |
| ATLANTIC SHORE ELECTRIC RAILWAY, SANFORD, MAINE            |            |                |                    |              |               |             |
| 1m.,   | Mar., '13  | \$25,674       | \$19,408           | \$6,265      | \$465         | \$5,800     |
| 1 "  | " '12      | 23,769         | 18,969             | 4,800        | 581           | 4,218       |
| AURORA, ELGIN & CHICAGO RAILROAD, CHICAGO, ILL.            |            |                |                    |              |               |             |
| 1m.,   | Mar., '13  | \$141,502      | *\$92,032          | \$49,470     | \$32,341      | \$17,129    |
| 1 "  | " '12      | 133,523        | *83,523            | 49,999       | 31,969        | 18,030      |
| 9 "  | " '13      | 1,455,949      | *860,243           | 595,705      | 289,326       | 306,378     |
| 9 "  | " '12      | 1,362,825      | *801,426           | 561,399      | 285,065       | 276,333     |
| BANGOR RAILWAY & ELECTRIC COMPANY, BANGOR, MAINE           |            |                |                    |              |               |             |
| 1m.,   | Mar., '13  | \$58,930       | *\$27,595          | \$30,535     | \$17,374      | \$13,161    |
| 1 "  | " '12      | 52,319         | *25,851            | 26,468       | 16,497        | 9,971       |
| 12 "   | " '13      | 724,050        | *327,273           | 396,777      | 202,951       | 193,826     |
| 12 "   | " '12      | 623,177        | *288,017           | 335,160      | 166,352       | 168,808     |
| CLEVELAND, PAINESVILLE & EASTERN RAILWAY, WILLOUGHBY, OHIO |            |                |                    |              |               |             |
| 1m.,   | Mar., '13  | \$27,981       | *\$15,214          | \$12,767     | \$10,222      | \$2,346     |
| 1 "  | " '12      | 25,686         | *16,108            | 9,578        | 9,758         | †180        |
| 3 "  | " '13      | 80,624         | *46,805            | 32,819       | 31,120        | 1,699       |
| 3 "  | " '12      | 72,407         | *49,058            | 23,349       | 29,717        | †6,368      |
| DETROIT (MICH.) UNITED RAILWAY                             |            |                |                    |              |               |             |
| 1m.,   | Mar., '13  | \$1,046,697    | \$683,465          | \$363,333    | \$180,309     | \$182,924   |
| 1 "  | " '12      | 870,196        | 565,434            | 322,240      | 177,406       | 144,834     |
| 3 "  | " '13      | 2,972,211      | 1,984,760          | 987,450      | 537,413       | 450,037     |
| 3 "  | " '12      | 2,518,997      | 1,636,396          | 881,701      | 537,165       | 344,535     |
| EAST ST. LOUIS & SUBURBAN RAILWAY, EAST ST. LOUIS, ILL.    |            |                |                    |              |               |             |
| 1m.,   | Mar., '13  | \$215,594      | *\$119,600         | \$95,994     | \$49,713      | \$46,281    |
| 1 "  | " '12      | 201,018        | *109,901           | 91,117       | 48,646        | 42,471      |
| 12 "   | " '13      | 2,503,497      | *1,389,618         | 1,113,879    | 582,025       | 531,854     |
| 12 "   | " '12      | 2,322,714      | *1,286,967         | 1,035,747    | 555,531       | 480,216     |
| GRAND RAPIDS (MICH.) RAILWAY                               |            |                |                    |              |               |             |
| 1m.,   | Mar., '13  | \$105,833      | *\$61,689          | \$44,194     | \$15,063      | \$29,131    |
| 1 "  | " '12      | 98,599         | *56,030            | 42,569       | 14,599        | 27,970      |
| 12 "   | " '13      | 1,248,831      | *712,631           | 536,200      | 175,728       | 360,472     |
| 12 "   | " '12      | 1,193,458      | *673,561           | 519,897      | 178,216       | 341,681     |
| TWIN CITY RAPID TRANSIT COMPANY, MINNEAPOLIS, MINN.        |            |                |                    |              |               |             |
| 1m.,   | Mar., '13  | \$710,624      | \$365,363          | \$345,361    | \$149,807     | \$195,454   |
| 1 "  | " '12      | 659,567        | 349,378            | 310,189      | 143,079       | 167,110     |
| 3 "  | " '13      | 2,036,455      | 1,095,378          | 941,077      | 438,476       | 502,600     |
| 3 "  | " '12      | 1,911,611      | 1,055,061          | 856,551      | 426,238       | 430,313     |
| UNION RAILWAY, GAS & ELECTRIC COMPANY, ROCKFORD, ILL.      |            |                |                    |              |               |             |
| 1m.,   | Mar., '13  | \$387,918      | *\$223,801         | \$164,117    | \$99,955      | \$64,162    |
| 1 "  | " '12      | 315,800        | *188,638           | 127,162      | 71,243        | 55,919      |
| 12 "   | " '13      | 4,259,868      | *2,452,749         | 1,807,119    | 1,052,082     | 755,037     |
| 12 "   | " '12      | 3,331,679      | *1,922,387         | 1,409,292    | 767,957       | 641,335     |
| VIRGINIA RAILWAY & POWER COMPANY, RICHMOND, VA.            |            |                |                    |              |               |             |
| 1m.,   | Mar., '13  | \$403,953      | \$199,425          | \$204,528    | \$126,625     | \$78,003    |
| 1 "  | " '12      | 367,364        | 194,578            | 172,786      | 118,817       | 53,969      |
| 9 "  | " '13      | 3,693,661      | 1,813,921          | 1,879,740    | 1,117,232     | 762,508     |
| 9 "  | " '12      | 3,467,434      | 1,815,672          | 1,651,762    | 1,064,054     | 587,708     |

\*Includes taxes.  
†Deficit.

# Traffic and Transportation

## Important Changes in Operation in Philadelphia

The first of a series of changes in the operation of a number of the electric railway lines of Philadelphia with a view of improving the service were inaugurated by the Philadelphia (Pa.) Rapid Transit Company on May 11, 1913. The initial step in the general re-routing plan was marked by the transfer of the Haddington-Lancaster and Baring Street line from the surface tracks in the business district to the subway and a change in the route heretofore followed by the Lombard and South Streets and the Continental-Depot lines. The diverting of the Market Street sections of these lines wholly to the subway, carrying with it all of the advantages of the transfer and exchange privileges enjoyed by the public before the change was perfected, affords a more rapid means of travel between sections in West Philadelphia and the business district and relieves congestion on busy thoroughfares in the center of the city. Free transfers between all the surface-subway lines and the elevated trains are continued at the Juniper Street station, while the exchange privileges to the north and south heretofore enjoyed by the passengers using the lines diverted to the subway are continued by establishing new exchange privileges on Market Street between the subway-elevated and the north and south surface lines and between the surface-car subway lines and the north and south surface lines.

The near-side cars of the Baring-subway line are the first lot of the 650 now under construction. These new cars have been constructed with additional improvements, chief among which is a new ventilating system approved by Director Neff of the Department of Public Health and by civic organizations. This improvement consists of fresh-air intakes through hoods or funnels in the roof of the car and is considered to be a decided improvement over the old method of ventilation through a system of openings in the car floor. It is expected that all of the near-side cars will be equipped with this new ventilating system by next winter. Another improved feature of the new cars on the Baring Street line is the changing of the position of the conductor from the platform to a point inside the car. This change will considerably increase passenger space on the platform and facilitate the collecting of fares.

The new cars are also equipped with additional safety devices approved by Coroner Knight and the permanent public safety committee. These additional safety devices consist of a wire screen on the "blind" side of the car directly under the front platform and chains connecting the side of the lifeguard with the car body. The automatic safety fenders which have repeatedly proved their efficiency are further improved through being equipped with a foot plunger by which, in case of emergency, the motorman can simultaneously drop the lifeguard and sound the warning gong.

To aid in the dispatching of cars at the Juniper Street station of the surface-subway lines it has been decided to use the rear or emergency door of all near-side cars for unloading purposes during the rush hour at this point.

For the information of the public, the company prepared a pamphlet containing the features of the first step in the re-routing of the lines during May and installed small racks in the cars to hold the pamphlets so that the public could obtain them from the conductor. The company also announced that copies of the guide, together with future changes in routing, would be sent by mail to all who forwarded their name and address to the company.

## Petition for Danbury Fare Reduction Denied

The Public Utilities Commission of Connecticut has dismissed the petition of Edward H. Rider, first selectman of the town of Danbury, that the Danbury & Bethel Street Railway be denied the right to charge a 10-cent fare during the annual fair week of the Danbury Agricultural Society on the company's cross-town line from the center of the city to Lake Kenosha, and has also denied a petition requesting the board to order the company to issue transfers good at any time during the day on which they are issued. Regarding the former the board points out that the company

maintains \$30,000 worth of equipment over and above what is required for ordinary traffic principally to handle the extra traffic during the fair week, and that it also has an increased expense for labor of \$550 to \$600 during the week in question. The board further says in part:

"No complaint was made as to the character of service rendered during fair week, but the petitioners claimed that it was a hardship on poor people to be required to pay 10 cents each way to and from the fair grounds, especially since the admission fee to the grounds had been raised, and also claimed that a reduction in the fare to 5 cents would tend to increase the traffic so that the revenues would not suffer materially. The traffic during fair week over the cross-town line is naturally congested during the early and late parts of the day, when the cars are operated under one-minute intervals. The company held that there were positive operating objections to reducing the headway between cars, besides the increase in cost of equipment and its operation resulting from such a plan."

In 1906 the Danbury & Bethel Street Railway applied to the city authorities for permission to make certain changes in its layout, which application was approved subject to certain conditions, among which was one that no extra fares should be charged on any of the new lines, except during fair week. The board says:

"It is reasonable to assume that the provision jointly agreed upon by the city and company may have influenced the company in accepting the other conditions requiring the company to make certain highway improvements. However, such a condition as to fares should not be indeterminate to the detriment of the traveling public, provided the financial condition and revenues of the company would warrant a reduction of fare. A statement of the distance and increased travel during fair week might indicate the propriety, if not necessity, of reducing the fare to 5 cents, but the close analysis of all the conditions and the financial standing and revenues of the company, on the other hand, indicate the reasonableness and necessity for the present fare. It may be claimed that the rate complained of is out of proportion, and should be equalized, but the commission is of the opinion that it is in the interest of the people of Danbury to retain the present rates during fair week, rather than to reduce such rates and meet the deficiency in revenue by a small increase in rates covering the whole system throughout the year."

**Sunday Operation of Toronto Municipal Line.**—Works Commissioner Harris of Toronto, Ont., has ordered the operation of cars on the civic car line on Gerrard Street on Sunday.

**Newsboys Barred from Cars.**—As part of its safety first campaign the Toledo Railway & Light Company, Toledo, Ohio, has issued an order that on and after May 26, 1913, newsboys will not be permitted to board cars to sell papers.

**Fire Stops in Davenport.**—The City Council of Davenport, Ia., has passed an ordinance requiring that the cars of all electric railways which operate in that city shall stop 50 ft. from any fire station to await the proceed signal from the conductor and shall then pass the fire station at a speed not to exceed 5 m.p.h.

**Souvenir Watch Fobs.**—All employees of the Portland Railway, Light & Power Company, Portland, Ore., have been presented with watch fobs under orders of B. S. Josselyn, president of the company. The fob consists of a bronze medallion with "Good Service" inscribed on one side and "Be Patient, Courteous and Attentive" on the other.

**Dan Patch Folder.**—The Minneapolis, St. Paul, Rochester & Dubuque Electric Traction Company, Minneapolis, Minn., known as the Dan Patch Electric Line, has issued a very attractive illustrated folder dealing with the territory through which the company operates. The halftones and text are printed in black and the captions in blue. The cover is in colors.

**Safety Department in Men's Magazine.**—The San Diego (Cal.) Electric Railway has decided to make a safety department a regular feature of the *Trolley Man*, published in the interests of the employees. The object of the department will be to call attention to avoidable accidents which occur in the city through carelessness in using cars. A

series of pictures will be run illustrating the causes of these accidents. They will be accompanied by text explaining how a repetition of such accidents can be avoided.

**Increase in Fare Asked For in Virginia.**—The Norfolk Southern Railroad, Norfolk, Va., has applied to the Corporation Commission of Virginia for permission to increase its passenger rates. The company claims that the electric division was operated at a loss of \$166,000 for the last three years. The application for the increase in rates has the approval of the directors of the Board of Trade and Business Men's Association of Norfolk. The electric division of the company connects Norfolk, Cape Henry and Virginia Beach and comprises 48 miles of the total of 598 miles.

**Reduction in Fare Denied in Providence.**—D. F. Sherman, vice-president of the Rhode Island Company, Providence, R. I., has announced that the company cannot at this time grant a 5-cent fare between Providence and Norwood. Mr. Sherman in denying the decrease to the petitioners concluded his letter as follows: "This is not a time to reduce fares, but, in line with all other lines of business, there are good reasons for increasing them. As a change of a fare zone to accommodate Norwood would disarrange the zones throughout the entire route, we cannot offer you any reduction of fares under the present conditions."

**Address on Safety Precautions.**—The employees of the public service corporations of New Albany and Jeffersonville, Ind., were addressed at a recent special meeting held for that purpose by Alexander Shane, formerly general manager of the Indianapolis, Columbus & Southern Traction Company, who at present is connected with the bureau of safety of the Middle West Utilities Company, on the subject of safety devices and the precautions necessary in general in order to avoid accidents. The employees present included those of the gas and water companies and of the electric light, power and railway companies of the two Indiana falls cities. Addresses were also made by James Harmon, of the Louisville & Northern Railway & Lighting Company; F. E. Cole, superintendent of the same company, and W. Dunbar, general manager of the United Gas & Electric Company.

**Report on Traffic in Sacramento.**—Bion J. Arnold has reported to the city commissioners on the subject of traffic over the lines of the Sacramento Electric, Gas & Railway Company in Sacramento, Cal. He has recommended that the company take over the passenger service of the Northern Electric Railway, Vallejo & Northern Railway and the Central California Traction Company in Sacramento and has suggested that the cars of the Sacramento Electric, Gas & Railway Company be equipped with air brakes and geared for higher speeds. He says that the service over the company's lines to the Southern Pacific depot is more than sufficient to care for traffic originating at that point. He suggests that the T Street line be used for fast service between Oak Park and the downtown section of Sacramento. The scattered settlements in the districts annexed to Sacramento make the extension of the service to these districts difficult at present.

**Through-Routing of Surface and Elevated Trains in Chicago.**—Samuel Insull, B. I. Budd and other representatives of the Chicago Elevated Railways appeared before the local transportation committee of the City Council of Chicago on May 7, 1913, and presented a tentative plan for the through-routing of elevated-railway trains in Chicago. George Weston, the city's representative on the Board of Supervising Engineers, Chicago Traction, concurred in the recommendations substantially as presented. The committee adopted a resolution asking the companies to prepare a concrete plan and an ordinance authorizing the changes, to be presented to the committee at an early date. Mr. Insull said that the companies were prompted to submit the plan on account of the advantage that would accrue to them from increased business. It was announced on May 10 that L. A. Busby, president of the Chicago City Railway, and W. W. Gurley, general counsel of the Chicago Railways, were at work on a proposed plan for unified operation of these lines and that the plan would be ready for presentation to the city within a few days. The proposal of the surface companies for unified operation was presented on May 12 and was approved by the local transportation committee.

## Personal Mention

**Mr. W. C. Baker** has resigned as superintendent of the Yakima Valley Transportation Company, North Yakima, Wash.

**Mr. J. G. Williams** has been appointed statistician and accountant of the Public Utilities Commission of the District of Columbia, effective on June 1, 1913.

**Mr. J. Jackson Pierce** has been chosen president of the Board of Public Utilities Commissioners of Wilmington, Del., to succeed Mr. William H. Vance, who continues as a member of the board.

**Mr. J. M. Read** has been appointed to succeed Mr. P. D. Kline as superintendent of the Ogden (Utah) Rapid Transit Company, Mr. Kline having been appointed general manager of the company.

**Mr. W. V. Neal** has been appointed superintendent of the Jefferson County Traction Company, Beaumont, Tex., which has an electric railway under construction between Beaumont and Port Arthur.

**Mr. W. G. Murrin**, who was formerly connected with the staff of the London (Eng.) United Railways, has been appointed mechanical superintendent of the British Columbia Electric Railway, Vancouver, B. C.

**Mr. D. R. Kennedy** has resigned as electrical superintendent of the British Columbia Electric Railway, Vancouver, B. C., and will spend the next few months inspecting electrical plants in the United States and Canada.

**Mr. W. H. Fraser**, who has been connected with the electrical staff of the British Columbia Electric Railway, Vancouver, B. C., has been appointed electrical superintendent of the company to succeed Mr. D. R. Kennedy.

**Mr. W. B. McKinley**, president of the Illinois Traction System, Peoria, Ill., expects to sail from Seattle on July 10, 1913, on the *Minnesota* on a tour of the world, to be gone until January, 1914. Mr. McKinley has announced that he will be a candidate for election to Congress again in 1914.

**Mr. Roy Kennedy** has been appointed superintendent of the Union Traction Company of Kansas, Independence, Kan., to succeed Mr. J. L. Kenreigh, who has entered steam railroad work. Mr. Kennedy entered the service of the Union Traction Company as a conductor. He has recently been in charge of the company's business at Parsons.

**Mr. F. X. Disney**, Elmira, N. Y., has been appointed assistant secretary of the Public Service Commission of the Second District of New York to succeed Mr. George R. Grant, Buffalo, who resigned from the commission after four years of service to become connected with the legal department of the New York Telephone Company.

**Mr. E. H. Clark** has resigned as superintendent of power and shops of the Indianapolis, New Castle & Eastern Traction Company, New Castle, Ind., to accept a similar position with the Southern Illinois Railway & Power Company, Harrisburg, Ill. Mr. Clark entered on his duties with the Southern Illinois Railway & Power Company on May 15, 1913.

**Mr. H. P. Bouslog**, who has been chief engineer of the lighting plant of the Interstate Public Service Company at Shelbyville, Ind., has been appointed chief engineer of the power station of the interurban lines of that company, formerly the Indianapolis, Columbus & Southern Traction Company, at Edinburg, Ind., to succeed Mr. Levi Crater, who resigned on May 1, 1912.

**Mr. Redmond Quain** has been elected a director of the Ottawa (Ont.) Electric Railway to succeed the late George P. Brophy. Mr. Quain is fifty-two years of age. He was one of the pioneers in street railway development in Ottawa and was a director of the Ottawa Electric Railway during the first few years of the company's existence. He has acted as auditor of the company for several years.

**Mr. Frank W. Stevens**, Jamestown, N. Y., has resigned as chairman of the Public Service Commission of the Second District of New York. Mr. Stevens' term expired on Feb. 1, but in deference to the wishes of the Governor and many of the utility companies of the State, he continued to act until the commission had disposed of the important matters coming under his personal charge. Mr. Stevens has

been chairman of the commission since its organization on July 1, 1907.

**Mr. John S. Kennedy** retired as secretary of the Public Service Commission of the Second District of New York on May 15, 1913, to take a position in the executive offices of the New York Telephone Company. The commission has not as yet named Mr. Kennedy's successor, and until that is done the office will be in charge of Mr. F. X. Disney, assistant secretary. Mr. Kennedy's resignation was filed on Jan. 1. He has been secretary of the commission since that body was created in 1907.

**Mr. H. H. Adams**, who since May, 1912, has been connected with Ford, Bacon & Davis, New York, N. Y., has been appointed superintendent of equipment of the Chicago (Ill.) Railways Company. Mr. Adams was formerly superintendent of rolling stock and shops of the New York (N. Y.) Railways. He was previously with the United Railways & Electric Company, Baltimore, Md. A biography and a portrait of Mr. Adams were published in the *ELECTRIC RAILWAY JOURNAL* of Jan. 27, 1912.

**Mr. Edward N. Lake**, formerly of Chicago, has been transferred from the Boston to the Chicago office of the Stone & Webster Engineering Corporation. During the last year he had had charge of the installation work for the Boston Elevated Railway, the contract for which was held by the Stone & Webster Corporation. Two 15,000-kw generating units were installed and six substations were erected. Ever since Mr. Lake first went to Chicago in 1893 he has been associated with some electrical interests, including the Chicago Edison Company, the Arnold Company and the Board of Supervising Engineers.

**Mr. Chester L. Bisbee**, for some time past division superintendent of the Bay State Street Railway at Newport, R. I., has been appointed superintendent of the Fall River division of the company to succeed A. E. Holmes, deceased. Mr. Bisbee was born in Middleboro, Mass., in 1876 and began his railway career with the Brockton (Mass.) Street Railway in 1899 as a conductor. In 1902 he was made a foreman in the carhouse of the company in Campello and in 1904 he was appointed a division foreman. He was subsequently made a division foreman in Newport, and when the position of superintendent of the division became vacant Mr. Bisbee was appointed to the place.

**Mr. P. D. Kline** has been appointed general manager of the Ogden (Utah) Rapid Transit Company: The promotion of Mr. Kline from superintendent to general manager will carry with it the additional duties of caring for the various extensions which the Ogden Rapid Transit Company and the Logan Rapid Transit Company contemplate carrying on during the coming season. Mr. Kline has been connected with the Ogden Rapid Transit Company since Feb. 1, 1913. Previous to that he was general superintendent of the Falkenau Electrical Construction Company, Chicago, Ill., in charge of all field construction. He supervised the installation of several large railway and lighting systems and a number of power stations for the Falkenau Construction Company.

**Mr. Frank P. Smith** has been appointed assistant to the president of the Interstate Public Service Company, Indianapolis, which company took over the property of the Indianapolis, Columbus & Southern Traction Company under lease on Dec. 7, 1912. Mr. Smith has also been elected vice-president of the Louisville & Northern Railway & Lighting Company and the Louisville & Southern Indiana Traction Company. Prior to entering the electric railway work he was with the Ohio & Mississippi Railway for ten years. He became connected with the Indianapolis, Columbus & Southern Traction Company in 1905, and at the time this system was leased to the Interstate Public Service Company in December, 1912, he was superintendent of maintenance of way and structures. Upon the organization of the Interstate Public Service Company he was appointed assistant to the vice-president and on April 22, 1912, was made assistant to the president.

**Mr. Arthur N. Dutton**, who since June, 1909, has been vice-president and general manager of the Peerless Motor Car Company, New York, N. Y., has been appointed general manager of the West Virginia Traction & Electric Company, which operates in Wheeling and Morgantown,

W. Va., and is controlled by the Eastern Power & Light Corporation, of which Mr. W. S. Barstow is president. Mr. Dutton was born in Milwaukee in 1873. He began his business career with the First National Bank, Milwaukee, and served for many years in railroad work in the West. In 1903 he entered the employ of the Brooklyn (N. Y.) Rapid Transit Company with the elevated division. Three months later he was made assistant superintendent of the elevated system of the company, and when Mr. George R. Folds resigned as assistant general manager of the company Mr. Dutton was appointed assistant to Mr. J. F. Calderwood, vice-president and general manager, and subsequently received the title of assistant to the general manager. Later Mr. Dutton's authority was extended and he was appointed superintendent of transportation of the Brooklyn Rapid Transit Company, in which position he had supervision of the operation of the entire system. He resigned from the Brooklyn Rapid Transit Company to become connected with the Peerless Motor Car Company.

**Mr. James Walter Gillette**, the newly-elected president of the Arkansas Association of Public Utility Operators, was born at Burlington, Mich., on June 28, 1871. He was educated at the public schools of Kalamazoo, Mich., and at Wyoming, Ohio. After a special course in drafting at the Ohio Mechanics' Institute at Cincinnati, he spent three years at De Pauw University at Greencastle, Ind. He was mechanical draftsman in the boiler works of Thomas J. Adams & Company, of Cincinnati, for a year, and later was with the Campbell & Zell Boiler Company, New York, and the Electrical Engineering & Construction Company, New York.



J. W. Gillette

He next became connected with the repair and construction department of the United States Navy. His first electrical experience was with the American Hoisting Derrick Company as draftsman. After a year of this work he became first assistant to the designing engineer of the California Electrical Works in San Francisco and later installed a number of plants for the company. He then entered the engineering and construction business for himself in southern California. In 1895 he rebuilt the lighting system and station equipment at Fond du Lac, Wis. The following year he became general superintendent of the Marinette Gas, Electric Light & Street Railway Company, Marinette, Wis., but resigned two years later to become manager of the West India & Colombia Electric Company, Barranquilla. During that time he also acted as resident engineer for the Rio Bogua Mining & Trading Company. He next headed an expedition to the interior of Antiqua, in company with two mining engineers. Returning to the United States, he was appointed superintendent of the electrical department of the Evansville (Ind.) Gas & Electric Light Company. In 1902 he became resident engineer of the Phoenix Gas & Electric Company, Phoenixville, Pa., which included the gas works, electric light station and street railways. He later went with the Fort Smith Light & Traction Company, where he has been manager for a number of years. Mr. Gillette is a full member of the American Institute of Electrical Engineers. He was recently appointed representative of the American Automobile Association and is planning to complete as soon as possible the State organization and arrange for automobile trips and for the improvement of highways in the State.

#### OBITUARY

**John S. Wise**, formerly of Virginia and later an attorney in New York, died May 12, 1913. Mr. Wise was prominent in the early days of electric railroading as counsel for the electrical interests in their litigation with the telephone companies, first at Richmond and later elsewhere, in connection with interference by induction caused by the railway

circuits to the telephone circuits. This litigation placed the responsibility for installing a complete metallic circuit for eliminating this trouble upon the telephone companies.

**Julius A. Lebkuecher**, president of the Black River Traction Company, Watertown, N. Y., died at his home in Newark, N. J., on May 13, 1913. Mr. Lebkuecher was born in Germany on Feb. 9, 1844. He attended the grammar schools and the high school in Newark and was graduated from the latter in 1860. In 1869 he and George Krementz organized the firm of Krementz & Company, Newark, jewelers, and Mr. Lebkuecher was a member of the firm at the time of his death. In 1894 Mr. Lebkuecher was elected Mayor of Newark and served one term.

**Frank O. Briggs**, a director of the Virginia Railway & Power Company, Richmond, Va., and the Norfolk Railway & Light Company and formerly first vice-president of the Norfolk & Portsmouth Traction Company, the property of which is now included in the system of the Virginia Railway & Power Company, died at his home at Trenton, N. J., on May 8, 1913. Mr. Briggs was born in Concord, N. H., on Aug. 12, 1851. He was graduated from the Military Academy at West Point in 1872 and served in the Second United States Infantry as second lieutenant until 1877, when he entered the employ of the John A. Roebling's Sons Company, Trenton, N. J. Mr. Briggs was active in public life and was elected Mayor of Trenton in April, 1899, and served until Jan. 1, 1902. On Jan. 3, 1902, he was appointed state treasurer to fill the vacancy caused by the death of George B. Swain, Newark, and in February, 1902, was elected by the Legislature for the full term of three years and was re-elected state treasurer in 1905. In 1904 he was elected chairman of the State Republican committee, and on Feb. 5, 1907, he was elected United States Senator to succeed John F. Dryden. Mr. Briggs was secretary of the New Jersey Wire Cloth Company and an officer of other allied Roebling companies.

#### Safety and Comfort of Passengers

The subject of Employees' Bulletin No. 46 for May, 1913, issued by the United Railways & Electric Company, Baltimore, Md., is "Safety and Comfort of Passengers." The text of the bulletin, which is signed by T. A. Cross, general manager, follows in part:

"One of the most important duties of the conductor is to provide for the safety and comfort of passengers, and the safety and comfort of persons whom you carry on your car depends in a large measure upon you. This applies especially upon the approach of the summer excursion season.

"While it is impossible at times during the rush hours to provide all passengers with seats, it frequently happens that persons are standing when the full seating capacity is not availed of. This condition is due sometimes to passengers getting into a section of a side-step open car where the bench is full, whereas by the watchfulness of the conductor they could have been directed to a section with unoccupied seats, or the conductor could further assist passengers by calling out the number of the bench upon which there are unoccupied seats. Sometimes this condition is caused by people occupying more space than is actually required for their accommodation. It is within the conductor's power to remedy both of these conditions, and if you will direct persons about to board a moderately well-filled car where they can find vacant seats you will add to their comfort, you will spare other passengers the unnecessary discomfort caused by others standing in front of them and you will add to the betterment of the service by getting your car under way more quickly than you can when passengers stand in the street undecided as to what section of the car they will enter. By reason of your position you can see vacant seats in the car, while a person standing in the street waiting to board a car cannot at all times see them quickly.

"A motorman should keep a sharp lookout for passengers about to alight via the front platform. Caution them to wait until the car stops. People at times stand on the front platform without holding on to anything. Do not be afraid to tell them to hold on to the handles. By so doing you will also add to the safety and comfort of passengers."

# Construction News

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

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

## RECENT INCORPORATIONS

**Rome & Gadsden Railroad, Gadsden, Ala.**—Application for a charter has been made by this company to build a 60-mile electric or steam railway between Rome and Gadsden. Capital stock, \$5,000. Officers: J. B. Wadsworth, Gadsden, president; J. M. Garvin, Rock Run, vice-president; G. P. Smith, Center, treasurer, and L. S. Daniels, Rome, secretary. [E. R. J., May 10, '13.]

\***Panama-Pacific International Exposition Terminal Railway Company, San Francisco, Cal.**—Application for a charter has been made by this company to build a 10-mile electric railway on the exposition grounds at Harbor View for the transportation of exhibits and materials. Incorporators: J. W. McCarthy, E. H. Hooper, Leon Sloss, Henry F. Fortmann, William H. Crocker, James McNab and I. W. Hellman, Jr.

\***Dakota Railroad, Bismarck, N. D.**—Application for a charter has been made in North Dakota to build either a steam or electric railway from Dickinson to Mott and north from Dickinson to connect with the Great Northern and "Soo" railroads and such other extensions as may be authorized.

**Cleveland & Akron Short Line Railway, Cleveland, Ohio.**—Incorporated in Ohio to build an electric railway between Cleveland and Akron via Brooklyn, Independence, Brecksville, Everett, Ira, Botzum and Portage, with a branch to Barberton. Capital stock, \$25,000. John C. Chapman, New England Building, Cleveland, is one of the incorporators.

**Beloit, Delavan & Clinton Railway, Beloit, Wis.**—Incorporated in Wisconsin to build an electric railway between Beloit, Delavan, Turtle, Clinton and Darien, 30 miles. Capital stock, \$50,000. Incorporators: Charles F. Lathers, Joel B. Dow, H. A. Vonoven, William S. Ferrigo, B. P. Eldred, W. Bradley Tyrel, A. N. Bort, B. F. Lyons, George Christie, J. F. Kemerrer, W. H. Horton, Thomas F. Fitzgibbons, Hugh McGavock, John F. Mutchow, Alfred J. Ranbenheimer, W. G. Welrick and William F. Holahan. [E. R. J., April 26, '13.]

## FRANCHISES

**Calgary, Alta.**—The Chestermere-Calgary Suburban Railway has received an extension of time from the Alberta Legislature in which to begin the construction of its line. The authorized capital stock has also been increased from \$250,000 to \$750,000 and the company's bonding powers have been increased from \$12,000 to \$20,000 a mile.

**Lethbridge (Alta).**—The Lethbridge Municipal Railway has asked the City Council for a franchise for an extension to No. 6 mile and Hardieville, 2 miles.

**Aurora, Ill.**—The Aurora, Elgin & Chicago Railroad will ask the County Commissioners for a franchise for an extension of its Downer Place line into Le Grand Boulevard, Aurora.

**Peoria, Ill.**—The Peoria, Canton & Galesburg Railway has asked the Council for a franchise on Lincoln Avenue and Seventh Avenue and to operate over certain parts of the Peoria Railway in Peoria. This line will connect Peoria, Canton and Galesburg. Horace Clark, president. [E. R. J., May 10, '13.]

**Waukegan, Ill.**—The Chicago & Milwaukee Electric Railroad, Chicago, has received a franchise from the Council in Waukegan.

**Logansport, Ind.**—The Laporte, Logansport & Southern Railroad, Laporte, has asked the County Commissioners for a franchise through the northeastern section of the county of Logansport.

**New York, N. Y.**—The Bronx Traction Company has asked the Board of Estimate for a franchise on Morris Park Avenue from Bear Swamp Road to Williamsburg Bridge Road.

**Kanauga, Ohio.**—The Kanauga Traction Company, Gallipolis, has received a twenty-five-year franchise from the

Gallia County Commissioners to build a line from the terminus of the company's line at Kanauga to the Meigs County line.

**Roanoke, Va.**—A resolution was introduced in the Board of Aldermen on May 9 proposing to sell and grant a franchise for the construction and operation of an electric railway in and upon certain streets of Roanoke. F. L. Gibbons, city engineer.

**Charleston, W. Va.**—The Charleston, Parkersburg & Northern Railroad has asked the Council for a franchise from the Charleston city limits to the Jackson County limits. K. E. Stephenson, Parkersburg, president. [E. R. J., May 3, '13.]

## TRACK AND ROADWAY

**Ensley (Ala.) Street Railway.**—This company has laid 1 1/3 miles of track from Ensley to Ensley South Highlands.

**Little Rock Railway & Electric Company, Little Rock, Ark.**—Work has been begun by this company on its loop from Twenty-third Street to Twenty-eighth Street and Arch Street. It will soon build five storage tracks at the corner of North Street and Ringo Street and a 1 1/2-mile extension in Little Rock.

**Los Angeles (Cal.) Railway.**—Plans are being considered by this company to build five extensions of its lines in Los Angeles into the Hollywood and Colegrove districts.

**Pacific Electric Railway, Los Angeles, Cal.**—Right-of-way is being secured by this company for an 18-mile line between Long Beach and Redondo. Work will soon be begun by the company on a 2-mile extension from the long wharf in Venice to the Santa Monica Canyon.

**Southern Traction Company of Illinois, East St. Louis, Ill.**—This company plans to have its line in operation between Belleville and East St. Louis by Oct. 1 and at the same time will use the Free Bridge and the St. Louis loop. As soon as this work is completed the line will be extended to Marissa, thence to Pinckneyville and to its southern terminus at Duquoin.

**Peoria (Ill.) Railway.**—This company plans to build a double track on Main Street from Elizabeth Street to Western Avenue in Peoria.

**Springfield & Central Illinois Traction Company, Springfield, Ill.**—Plans are being made by this company to begin soon the construction of its line between St. Louis, Mo., and Terre Haute, Ind. Terminals have been practically procured in St. Louis and East St. Louis, as well as most of the right-of-way between St. Louis and East St. Louis. A bridge spanning the Mississippi River will also be built. This railway, as at present contemplated, includes a line 180 miles long between St. Louis and Terre Haute and another, 120 miles long, between Springfield and Pinckneyville, Ill. The latter line will be extended to Cairo. The two lines will cross each other at Keyesport, Ill. [E. R. J., May 3, '13.]

**Springfield, Taylorville & Pana Interurban Railway, Taylorville, Ill.**—Work will be begun by this company on the construction of its railway as soon as the surveys are completed. This 17 1/2-mile line will connect Springfield, Edinburg, Taylorville, Owaneco and Pana. Overhead trolley will be installed. The power house will be located at Taylorville. Capital stock authorized, \$325,000; issued, \$300,000. Bonds authorized, \$325,000. Officers: Henry V. Gehm, 1208 Third National Bank Building, St. Louis, Mo., president; W. B. Adams, Taylorville, vice-president and general manager; George H. Backer, 1208 Third National Bank Building, St. Louis, secretary and treasurer. [E. R. J., May 10, '13.]

**Fort Wayne & Springfield Electric Railway, Decatur, Ind.**—It is reported that plans are being considered for the formation of a new company to take over the property of the Fort Wayne & Springfield Railway, Decatur, and provide about \$600,000 for extending the line from Springfield to Portland, Ind.

**Cedar Rapids & Iowa City Railway & Light Company, Cedar Rapids, Ia.**—This company is building its 15-mile line between Cedar Rapids and Mount Vernon. It is planned to complete this extension in July. Contracts have all been awarded.

**Davenport-Muscataine Railway, Davenport, Ia.**—At a conference between the Muscatine City Council and P. P. Crafts, general manager of this company, it was decided as a compromise that the extension of the line to Northwest Muscatine should extend to the intersection of Newell Avenue and the main line.

**Fort Dodge, Des Moines & Southern Railroad, Des Moines, Ia.**—The proposition to build an electric line between Des Moines and Spirit Lake has been made possible by the House passing a Senate bill providing that property owners within 5 miles on each side of the proposed line may vote a tax on themselves to aid the construction of an electric railway or the electrification of a steam railroad. The Minneapolis & St. Louis Railroad is said to desire to electrify its line from Fort Dodge to Humboldt and the Rock Island Railroad is said to desire to electrify its line from Livermore to Spirit Lake.

**Fort Scott & Pittsburg Railway, Fort Scott, Kan.**—This company has completed the preliminary work on its 35.3-mile line between Fort Scott and Pittsburg via Frontenac, Arcadia and Mulberry. The company's repair shops will be located at Fort Scott and it will purchase power from the Fort Scott Gas & Electric Company, Fort Scott. It will operate five passenger cars, two express, two flat and two work cars. It will also furnish power for lighting purposes in several small towns. Capital stock authorized, \$10,000. Officers: A. B. Dickman, State Bank, Cash, Kan., president; F. H. Foster, Fort Scott, vice-president; T. A. Banker, secretary; C. D. Sample, Citizens' National Bank, Fort Scott, treasurer; T. A. Banker, Fort Scott, general manager, and J. S. Worley, 301 Reliance Building, Kansas City, Mo., chief engineer. [E. R. J., April 19, '13.]

**Joplin & Pittsburg Railway, Pittsburg, Kan.**—Work has been begun by this company double-tracking its line from Twelfth Street to Twentieth Street in Pittsburg.

**Plymouth & Sandwich Street Railway, Manomet, Mass.**—Except for a few miles of grading nothing will be done by this company on its lines until next fall.

**Miller's River Street Railway, Miller's Falls, Mass.**—This company will begin construction within the next thirty days between Orange and Miller's Falls. It will connect with the lines of the Northern Massachusetts Street Railway and the lines of the Connecticut Valley Street Railway. It will be controlled by the Massachusetts Consolidated Railways. D. P. Abercrombie, secretary. [E. R. J., April 19, '13.]

**St. Joseph Railway, Light, Heat & Power Company, St. Joseph, Mo.**—It is said that this company has under consideration plans to build a line between St. Joseph and Atchison.

**Fredericton (N. B.) Street Railway.**—Plans have been prepared for the building of a 5-mile electric railway to connect Fredericton, St. Mary's, Gibson and Marysville, N. B. [E. R. J., March 29, '13.]

**St. John (N. B.) Suburban Railway.**—This company has been organized to build electric railway lines from the Suspension Bridge at St. John, to different points in Westfield, to Spruce Lake, Loch Lomond, and from Simonds to points in Rothesay. Electricity, gasoline or steam may be used for operating the line. Directors: John R. Graham, president of the Bangor (Maine) Railway & Electric Company; H. W. Cushman, Bangor, Maine; M. W. Doherty, C. F. Inches, D. K. Hazen, St. John.

**Linden, N. J.**—A company is being organized in Linden to build a 6-mile electric railway through Linden to connect with the new short line of the Public Service Company, Newark. Jacob L. Bauer, 130 Broad Street, Elizabeth, N. J., engineer. F. R. Anderson, Linden, is interested. [E. R. J., May 10, '13.]

**Morris Railroad, Morristown, N. J.**—This company, which is a subsidiary of the Morris County Traction Company, plans to increase its capital stock to cover the cost of building 2.6 miles of railway between Morristown and Madison.

**Freeport (N. Y.) Railroad.**—This company states that its 1¼-mile railway, which will connect the line of the Great South Bay Ferry Company with the railroad station in Freeport, will be completed within the next two weeks. T. P. C. Forbes, Freeport, president.

**Manhattan & Jamaica Railway, Patchogue, N. Y.**—This company has opened its new line over the entire length of Thompson Avenue from Queensboro Bridge to Grand Street in Newtown.

**Rome & Delta Dam Electric Railway, Rome, N. Y.**—Right-of-way has been secured by this company for its 6-mile line between Rome and Delta Dam. Contracts for the construction of the line will soon be awarded. This line will be connected with the Boonville and Old Forge line, where 12 miles is graded. De Witt C. Hadcock, president. [E. R. J., Nov. 9, '12.]

**Syracuse, Watertown & St. Lawrence River Railroad, Syracuse, N. Y.**—This company, which plans to build a 12-mile line between Syracuse and Brewerton, states that it now operates cars from Stop 9 in Syracuse to Brewerton, a distance of 6.2 miles. Cars are operated over the Syracuse & South Bay Electric Railroad, Syracuse, to Stop 9 and then over this company's line to Brewerton. H. D. Brewster, secretary.

**\*Troupsburg, N. Y.**—Preliminary arrangements are being made to build an electric railway between Troupsburg, N. Y., and Knoxville, Pa., via Austinburg, Pa.

**Blue Ridge & Interurban Railway, Henderson, N. C.**—Plans are being made by this company to build an electric line from Hendersonville to Saluda, N. C., and finally to Spartanburg, S. C. Capital stock, \$700,000. George Ladshaw, Spartanburg, S. C., engineer.

**Cape Breton Electric Company, Sydney, N. S.**—This company plans to expend \$350,000 on building a second track on existing lines and putting in additional sidings in Sydney.

**Northern Ohio Traction & Light Company, Akron, Ohio.**—A route between Canton and Lisbon has been proposed for this company and the officers have appointed a committee to go over the route and see whether the population and industries are sufficient to warrant the extension.

**Enid Interurban Traction Company, North Enid, Okla.**—This company has surveyed its 3-mile line between Enid and North Enid and has graded about ½ mile of the line. It is expected to begin construction next year. H. M. Spaulding, North Enid, president.

**Shawnee (Okla.) Electric Railways.**—This company has surveyed its 41-mile line between Shawnee and Oklahoma City and has graded about 10 miles. A. Hardgrave, 112 West Adams Street, Chicago, chief engineer.

**Berlin & Northern Railway, Berlin, Ont.**—Following a request to extend its line from Bridgeport to West Montrose and Conestoga this company has requested assistance, including bond guarantee and bonus of \$18,000 per mile. W. H. Breithaupt, president.

**\*Cornwall, Ont.**—Plans are being considered to construct a railway between Cornwall and St. Polycarpe, Que., a distance of 28 miles. Adam Beck, London, Ont., is said to be interested.

**Imperial Traction Company, Ottawa, Ont.**—Work will be begun during the year by this company on its line from Smithville to Bridgeburg and from Hamilton to Toronto. L. B. Howland is interested. [E. R. J., March 8, '13.]

**Niagara, St. Catharines & Toronto Railroad, St. Catharines, Ont.**—This company is building a branch line to connect St. Catharines with Niagara-on-the-Lake, at the mouth of the Niagara River. This extension is between 12 and 15 miles in length.

**Oregon Electric Railway, Portland, Ore.**—This company is considering plans to tunnel hills on proposed route west of the Willamette River. The undertaking, if carried out as planned, will cost about \$500,000.

**Portland Railway, Light & Power Company, Portland, Ore.**—Work will be begun at once by this company on the construction of the extension of the Hawthorne Avenue line to reach Seventy-fourth Street and Twenty-ninth Avenue as soon as the right-of-way on Twenty-ninth Avenue is secured. The company also plans to extend its Woodstock line from its present terminus at East Forty-sixth Street to East Fifty-seventh Street. Eventually this line will be extended to East Seventy-second Street in the Mount Scott district in Portland.

**Beaver Valley Traction Company, New Brighton, Pa.**—Announcement has been made by this company that it will lay 1500 ft. of new track at New Brighton. Considerable other track will be laid during the summer, the total being about 3 miles.

**\*Pottsville-Shenandoah Railway, Pottsville, Pa.**—This company plans to build an electric railway between Pottsville, Shenandoah and Frackville.

**Saskatoon, Sask.**—The Saskatoon & Sutherland Contracting Company, Saskatoon, has obtained the contract for the construction of a municipal electric railway on Eighth Street in Saskatoon.

**Knoxville Railway & Light Company, Knoxville, Tenn.**—This company has placed in operation its Kingston Pike extension to Lyon's View.

**West Tennessee Traction Company, Memphis, Tenn.**—Financial arrangements have been completed by this company to build its 85-mile railway from Memphis to Brownsville to Jackson. George C. Bennett, Memphis, president. [E. R. J., Dec. 14, '12.]

**Eastern Texas Traction Company, Dallas, Tex.**—This company has completed surveys for its 53-mile line between Dallas and Greenville via Garland, Rockwall, Fate, Roysse City, Josephine, Caddo Mills and Greenville. It has graded between Dallas and Rockwall, 24 miles, and is now grading between Rockwall and Greenville, 29 miles. The general contractors are Karner Brothers, Dallas. The line is located with a 2-deg. 30-min. maximum curvature. The maximum grade is 2 per cent. The bridges wherever possible are reinforced concrete of the slab and column type. One containing three 40-ft. spans is now under construction over White Rock Creek. It will be completed in about two weeks. For wood trestlework creosoted piling is being used. The company will use 70-lb. rails and the cars will be equipped for 1200-volt d.c. operation. William A. Obenchain, Jr., chief engineer.

**Northern Texas Traction Company, Fort Worth, Tex.**—Work has been begun by this company double-tracking its line between Dallas and Fort Worth. It will also straighten out the few curves along the line. Rails have been laid from Fort Worth to Handley.

**Salt Lake & Ogden Electric Railway, Salt Lake City, Utah.**—The contract for the grading of this company's line through the Jordan Narrows has been let and work will be begun at once. This line will connect Salt Lake City and Provo.

**Norfolk (Va.) Southern Railroad.**—Plans are being considered by this company to double-track its electric division in the near future. The electric division of the company connects Norfolk, Cape Henry and Virginia Beach and comprises 48 miles of the total of 598 miles.

**Gray's Harbor Railway & Light Company, Aberdeen, Wash.**—This company will place contracts during the next four months to build about 3 miles of new track with concrete ties.

**Tacoma, Wash.**—The proposal of Mayor Seymour and the other city commissioners to build a municipal electric railway to extend from the center of Tacoma to the manufacturing district on the tide flats was defeated by the voters at the election on May 11, 1913, held to ratify the bond issue for that purpose. [E. R. J., Aug. 31, '13.]

**Fairmont, Clarksburg & Grafton Railway, Clarksburg, W. Va.**—Right-of-way has been secured and construction will be begun at once by this company on its line to connect Clarksburg, Fairmont and Grafton. George R. Kirk, president, and Eugene Somerville, secretary. [E. R. J., March 1, '13.]

**Morgantown (W. Va.) Interurban Railway.**—Surveys have been made by this company on its 10-mile line between Morgantown and Point Marion. Joseph H. McDermott, Morgantown, president. [E. R. J., April 12, '13.]

**Princeton (W. Va.) Power Company.**—S. J. Evans of the Princeton Power Company, has begun the survey for the proposed 12-mile electric railway between Princeton and Bluefield. [E. R. J., March 22, '13.]

**Wisconsin Traction, Light, Heat & Power Company, Appleton, Wis.**—Plans are being considered by this company to build an extension to Hortonville.

## SHOPS AND BUILDINGS

**Peoria, Canton & Galesburg Railway, Peoria, Ill.**—Plans are being considered by this company to build a new terminal station in the business district of Galesburg. The company will also build stations in Peoria and Canton. James A. Fenelson, secretary. [E. R. J., May 10, '13.]

**Springfield (Ill.) Consolidated Railway.**—This company has awarded the contract to the Clinton Bridge Works, Clinton, to build its new carhouse in Springfield. The structure will be 210 ft. x 60 ft. and of steel and concrete construction. [E. R. J., May 3, '13.]

**Des Moines (Ia.) City Railway.**—Work will be begun at once by this company on new carhouses, to cost \$100,000, which will be built between the belt line and the Des Moines River and between Willow Street and University Avenue on the west side of the river. Extensive trackage and terminal facilities will be located on the same site. The site for this improvement is a triangular-shaped piece of ground about three or four square blocks in area.

**Benton Harbor-St. Joe Railway & Light Company, Benton Harbor, Mich.**—This company has secured a site in Watervliet on which it plans to build a terminal in the near future.

**Cape Breton Electric Company, Sydney, N. S.**—This company plans to enlarge its carhouse in Sydney in the near future.

**Cincinnati, Milford & Loveland Traction Company, Cincinnati, Ohio.**—Weber, Werner & Adkins are the architects in charge of plans for the reconstruction of this company's interurban station at 508 Sycamore Street in Cincinnati. It is understood that a portion of the walls of the original station will be used for the new structure.

**Southern Traction Company, Dallas, Tex.**—This company has recently acquired 15 acres of land in Trinity Heights, 1½ miles from the southern limits of Dallas. Work will soon be begun by the company building its new repair shops on this site.

## POWER HOUSES AND SUBSTATIONS

**Caldwell (Idaho) Traction Company.**—This company plans to purchase at once one 300-kw d.c. generator for its power house in Caldwell.

**East St. Louis & Suburban Railway, East St. Louis, Ill.**—This company will add to its substation equipment a new 2000-kw Curtis turbo-generator set. The order has been placed with the General Electric Company.

**Freeport Railway & Light Company, Freeport, Ill.**—This company will install in one of its substations a 300-kw rotary converter, three 100-kw transformers and a switchboard panel ordered from the General Electric Company.

**Hattiesburg (Miss.) Traction Company.**—Work has been begun by this company enlarging its power plant and excavating has been begun for the foundation for the cooling tank to be maintained in connection with its 1500-kw turbine engine. A 200-kw generator has been installed and other improvements will soon be made.

**Cape Breton Electric Company, Sydney, N. S.**—This company plans to enlarge its power plant at Sydney and provide an auxiliary steam plant at North Sydney, N. S.

**Portland, Eugene & Eastern Railway, Portland, Ore.**—This company has awarded the contract for the construction of a transmission station in Oswego to the Portland Engineering & Contracting Company, Portland.

**West Penn Railways, Pittsburgh, Pa.**—This company reports rapid progress on the construction of the water-power plant of the Hydro-Electric Company of West Virginia, a subsidiary company. An initial installation of 48,000 hp of an ultimate 150,000-hp capacity is under contract for delivery to the company before Jan. 1, 1914.

**Norfolk (Va.) Southern Railroad.**—Plans are being considered by this company to purchase new equipment and increase the capacity of its power house.

**Puget Sound Traction, Light & Power Company, Seattle, Wash.**—This company will add to its substation equipment a 1000-kw three-bearing motor-generator set, two 500-kva transformers, one 800-kva transformer and switchboard apparatus. The order for the equipment has been placed with the General Electric Company.



# Manufactures and Supplies

## ROLLING STOCK

**Charlotte (N. C.) Electric Railway**, it is reported, expects to purchase eight cars.

**Central Pennsylvania Traction Company, Harrisburg, Pa.**, expects to purchase seven cars.

**Boston (Mass.) Elevated Railway** has ordered 100 cars from the Jewett Car Company.

**Wichita (Kan.) Railway & Light Company** is reported as expecting to purchase six new cars.

**Caldwell (Idaho) Traction Company** expects to purchase one combination passenger and baggage car.

**Chattanooga (Tenn.) Railway & Light Company** has ordered ten cars from the American Car Company.

**South Covington & Cincinnati Street Railway, Covington, Ky.**, has ordered twenty 21-ft. car bodies from the Cincinnati Car Company.

**Puget Sound Traction, Light & Power Company, Seattle, Wash.**, has ordered ten double-truck, single-end cars from the Cincinnati Car Company.

**Amarillo (Tex.) Street Railway** has ordered from the American Car Company two 20-ft. 8-in. prepayment closed car bodies, mounted on Brill 21-E trucks.

**People's Railway, Wilmington, Del.**, has ordered one 28-ft. double-truck car body, mounted on standard O-50 trucks, through W. R. Kerschner, from the Cincinnati Car Company.

**Minneapolis, St. Paul, Rochester & Dubuque Electric Traction Company, Minneapolis, Minn.**, has ordered two additional type RE-70-B-11 gas-electric motor cars from the General Electric Company.

**Santa Barbara & Suburban Electric Railway, Santa Barbara, Cal.**, has ordered five center-entrance, semi-convertible cars from The J. G. Brill Company. They will be 41 ft. long, 8½ ft. wide and will weigh 39,000 lb.

**Virginia Railway & Power Company, Richmond, Va.**, noted in the ELECTRIC RAILWAY JOURNAL of April 5, 1913, as having ordered twenty cars from the Cincinnati Car Company, has specified the following details:

|                                    |                                 |                |
|------------------------------------|---------------------------------|----------------|
| Type of car.....Center ent.        | Control type .....              | MK             |
| Prepayment type.....Pay-within     | Couplers.....Van Dorn No. 31    |                |
| Seating capacity.....66            | Curtain material .....          | Pantasote      |
| Bolster centers, length.....25 ft. | Destination signs.....Hunter    |                |
| Length over vestibule,             | Fenders or wheelguards.....H.B. |                |
| 47 ft. 7 in.                       | Gongs.....14-in. pedal          |                |
| Width over sills.....8 ft. 1¾ in.  | Hand brakes.....Peacock         |                |
| Width over all.....8 ft. 5 in.     | Heaters .....                   | Cons.          |
| Height, rail to sills.....30½ in.  | Headlights .....                | Dayton         |
| Sill to trolley base,              | Motors,                         |                |
| 8 ft. 10½ in.                      | four per car, inside-hung       |                |
| Body .....                         | Sanders.....Elec. S. Sup.       |                |
| Interior trim .....                | Seats.....Hale & Kilburn        |                |
| cherry                             | Seating material.....Rattan     |                |
| Headlining .....                   | Trolley catchers or retriev-    |                |
| Agasote                            | ers .....                       | 2 U. S. No. 13 |
| Roof .....                         | Ventilators,                    |                |
| arch, Agasote                      | Cincinnati arch roof            |                |
| Underframe .....                   | Buzzers .....                   | Cons.          |
| steel                              | Signals .....                   | Cons.          |
| Air brakes .....                   |                                 |                |
| emergency                          |                                 |                |
| Bumpers .....                      |                                 |                |
| steel channel                      |                                 |                |
| Car trimmings,                     |                                 |                |
| bronze oxidized                    |                                 |                |

**Asheville (N. C.) Electric Company**, which ordered six 20-ft. 8-in. semi-convertible car bodies, mounted on Brill 21-E trucks, from The J. G. Brill Company, as noted in the ELECTRIC RAILWAY JOURNAL of March 22, 1913, has specified the following details:

|                                   |                                |          |
|-----------------------------------|--------------------------------|----------|
| Seating capacity.....32           | Couplers .....                 | Brill    |
| Weight (car body only),           | Curtain fixtures.....Forsythe  |          |
| 11,000 lb.                        | Curtain material.....Pantasote |          |
| Length of body.....28 ft. 8 in.   | Destination signs.....Hunter   |          |
| Length over vestibule,            | Wheelguards .....              | Sterling |
| 30 ft. 1 in.                      | Gongs .....                    | Dedenda  |
| Width over sills.....7 ft. 8¾ in. | Hand brakes.....Sterling       |          |
| Width over all.....8 ft. 3½ in.   | Headlights.....Neal No. 1561   |          |
| Height, rail to sills,            | Journal boxes.....Brill        |          |
| underside, 31¾ in.                | Motors, type and number,       |          |
| Body .....                        | GE-80 D.C., inside-bung        |          |
| wood                              |                                |          |

|                              |                                 |                |
|------------------------------|---------------------------------|----------------|
| Interior trim.....bronze     | Car trimmings.....Brill         |                |
| Headlining.....birch veneer  | Paint .....                     | Masury         |
| Roof .....                   | Monitor Sanders.....Brill       | Dumpit         |
| Underframe, wood and metal   | Sash fixtures.....Brill         |                |
| Axles.....hot rolled steel   | Seats .....                     | Brill "Winner" |
| Bumpers.....Brill angle iron | Seating material.....cane       |                |
| Cables .....                 | G.E. Springs .....              | Brill          |
| Conduits and junction        | Varnish .....                   | Murphy         |
| boxes .....                  | G.E. Wheels.....Cast-iron spoke |                |

## TRADE NOTES

**Cooke, Holtz & Company, Chicago, Ill.**, state that the corporate name of the company has been changed to H. T. Holtz & Company.

**Smiley Company, Edmonton, Alberta, Can.**, has recently received an order from the Edmonton Radial Railway for four sets of portable cross-overs.

**American Engineering Company, Philadelphia, Pa.**, has just completed an additional erecting shop, 150 ft. x 80 ft., to care for the rapidly increasing sales of Taylor stokers.

**Perry Ventilator Corporation, New Bedford, Mass.**, has received an order from the Boston & Worcester Street Railway, Boston, Mass., to equip a number of its cars with ventilators.

**Electric Storage Battery Company, Philadelphia, Pa.**, has received the order for storage batteries for the car recently ordered by the Milledgeville (Ga.) Railway from The J. G. Brill Company.

**Dayton Fare Recorder Company, Dayton Ohio**, has opened an Eastern office in Suite 1518, 30 Church Street, New York, N. Y. The sales work of the company will be handled from this new office.

**Near-Side Car Company, Philadelphia, Pa.**, has closed its Philadelphia office, and removed the general offices to Suite 1518, 30 Church Street, New York, N. Y., from which point all sales work will be conducted.

**Burton W. Mudge & Company, Chicago, Ill.**, have changed their firm name to Mudge & Company. The firm has removed its general offices in Chicago from the People's Gas Building to the Railway Exchange Building.

**C. & C. Electric Company, New York, N. Y.**, has appointed George W. Craven manager of its welding department, with headquarters at Garwood, N. J. Mr. Craven was formerly manager of the Chicago office of the above company.

**Gibbs & Hill, New York, N. Y.**, have recently secured the services of Raymond J. O'Brien. Mr. O'Brien was formerly connected with the railway engineering department of the Westinghouse Electric & Manufacturing Company, at East Pittsburgh, Pa.

**Railway Utility Company, Chicago, Ill.**, has removed its general offices from the Rookery to a suite at 226 La Salle Street. The company has appointed James H. Denton its Eastern manager, with offices in the Marbridge Building, New York, N. Y.

**General Electric Company, Schenectady, N. Y.**, held the annual meeting of its stockholders on May 13, 1913, at which time I. S. Keeler, assistant secretary of the company, and C. P. Moore were elected directors, succeeding J. Pierpont Morgan and J. P. Ord, both deceased.

**Murphy Iron Works, Detroit, Mich.**, have removed their New York office from the Hudson Terminal Building to Suite 901 Woolworth Building. H. W. Canning is in charge of this office. The Boston office of the company has been moved from 35 Federal Street to 201 Devonshire Street.

**Pyrene Manufacturing Company, New York, N. Y.**, has received an order from the International Railway, Buffalo, N. Y., for thirty-five extinguishers, equipped with the new brackets which have recently been placed on the market, to be used on its interurban cars between Buffalo and Lockport, N. Y.

**Consolidated Car Fender Company, Providence, R. I.**, has received an order through the Wendell & MacDuffie Company to equip the forty-five new center-entrance storage-battery cars of the New York Railways and the forty new storage-battery cars of the Third Avenue Railway with H-B lifeguards.

**Baldwin Locomotive Works, Philadelphia, Pa.,** expect to let contracts in a few days for the construction of 3 miles of track to be used in connection with their locomotive plant to be built at East Chicago, Ind. The plant, it is estimated, will cost \$5,000,000 and will furnish employment to between 4000 and 5000 men.

**Louis P. Lipps, Cleveland, Ohio,** to whom was recently granted a patent on a new form of railway ticket, which was described in the *ELECTRIC RAILWAY JOURNAL* of Feb. 8, 1913, page 258, has signed a contract with the Columbus (Ohio) Railway & Light Company for an eight-year license to use these tickets on its different lines.

**Ackley Brake & Supply Company, New York, N. Y.,** reports that an order has just been received from St. Petersburg, Russia, for 300 Ackley adjustable brakes, also one from Japan for 360 brakes. G. S. Ackley on his present trip abroad has sold over 1200 more brakes of this type throughout Europe. Mr. Ackley was expected to return to New York about May 15.

**John Hays Smith, Milwaukee, Wis.,** has resigned his position as commercial engineer of The Milwaukee Electric Railway & Light Company to engage in consulting engineering, with offices in the Merrill Building. Before going to Milwaukee Mr. Smith was with the Duquesne Light Company, Pittsburgh, Pa., and prior to that was connected with the Westinghouse Electric & Manufacturing Company for seven years.

**Curtain Supply Company, Chicago, Ill.,** has received the order for equipping the fifty new cars which are being built by The Laconia Car Company for the Bay State Street Railway, Boston, Mass., with curtains, using Rex, ring 48 all-metal rollers. The company also reports that it has received an order to equip the thirty new cars of the Boston Elevated Railway which are now being built by the Pressed Steel Car Company with curtains using Rex, ring 88 all-metal rollers.

**General Electric Company, Schenectady, N. Y.,** has received equipment orders from the following railways: Saginaw-Bay City Railway, Saginaw, Mich., GE-210 70-hp two-motor equipments for eight new cars; St. Louis, Springfield & Peoria Railway, Peoria, Ill., six GE-69-C 200-hp four-motor locomotive equipments, twenty GE-222-G 140-hp four-motor car equipments and fifty-two GE-201 60-hp railway motors; Public Utilities Company, Evansville, Ind., GE-210 70-hp two-motor car equipments for eight new cars; Portland (Ore.) Railway, Light & Power Company, twenty-four GE-58-A 37-hp railway motors; Northern Texas Traction Company, Fort Worth, Tex., four GE-73 75-hp four-motor car equipments and ten GE-201, 60-hp two-motor equipments; Detroit (Mich.) United Railways, fifty GE-210 70-hp two-motor car equipments.

**The J. G. Brill Company, Philadelphia, Pa.,** has close to \$4,000,000 worth of forward business in hand, and ever since last fall has been operating with the largest output in its history. In the year ended Dec. 31, 1912, the company did a gross business of \$7,842,091, compared with \$5,870,007 in the previous year, an increase of \$1,972,084, or more than 30 per cent. This contrasts with a slight loss in gross which the 1911 year showed over 1910. After charging off \$353,100 for property maintenance and depreciation, net profits were \$1,054,851, compared with \$554,980 in 1911 and \$326,232 in 1910. Net profits increased \$499,871, or more than 90 per cent, over 1911, and \$728,619, or 223 per cent, over 1910. The balance for the \$5,000,000 common stock last year after deducting the preferred dividend was equivalent to 14.6 per cent on that issue, compared with but 4.6 per cent in the previous year.

**Ohio Brass Company, Mansfield, Ohio,** has placed on the market a new rail bond known as the type J all-wire bond. The new feature is in the form of the bond terminals, a hole being drilled in each terminal stud while an annular hole is milled with a hollow cutter in the ball of the rail. The contact pin is therefore an integral part of the rail. The bond terminal is placed in the annular hole and driven home with a hammer. Mechanically it will stay there as a double gripping effect is obtained upon the outer wall and pin. Electrically the contact surfaces exceed the conductivity required for the capacity of the bond. The bond is of No. 0000 size and is designed for use on 60-lb. and heavier rails. The hollow milling cutter is made of high-

speed steel and can be quickly resharpened. The milling machine itself is motor-driven and is equipped with wheels for moving along the track. It mills two holes simultaneously and backs the cutters out of the holes without stopping or reversing motors.

#### ADVERTISING LITERATURE

**Joseph Dixon Crucible Company, Jersey City, N. J.,** has issued a new booklet entitled "Graphite for the Boiler."

**Ackley Brake & Supply Company, New York, N. Y.,** has issued a small folder illustrating the different types of the Monarch refillable fuse.

**Pittsburgh Reinforcing Pole Company, Pittsburgh, Pa.,** has issued a folder which describes and illustrates the Orr pole reinforcing process.

**Harris, Forbes & Company, New York, N. Y.,** have printed a small booklet on public utility bonds, giving capitalization, earnings, etc., of companies mentioned therein.

**Chicago Pneumatic Tool Company, Chicago, Ill.,** has printed Catalog 42, describing the Boyer railway speed recorder, with instructions for applying and operating.

**Pawling & Harnischfeger Company, Milwaukee, Wis.,** has reprinted in booklet form an article from the *American Engineer* entitled "Drilling and Boring Operations in Railway Shops." by P. G. Valentine, of the Chicago, Milwaukee & St. Paul Railway.

**Nichols-Lintern Company, Cleveland, Ohio,** has issued a pamphlet containing a condensed copy of a report on illuminating tests made by the Cleveland (Ohio) Railway. The company has also issued another pamphlet illustrating and describing the Nichols-Lintern selector switch.

**Federal Storage Battery Car Company, Silver Lake, N. J.,** has issued an attractive booklet illustrating and describing type 301 of Beach cars, propelled by Edison batteries. The booklet also contains several floor plans of this type of car, with dimensions. The car described is one of an order for the New York Central lines.

**Trussed Concrete Steel Company, Detroit, Mich.,** has issued a booklet pertaining to concrete bridges, roads and curbs. The booklet contains numerous illustrations, with complete discussions on the design of concrete bridges for both highways and railways and tables of designs for flat highway bridges, for railway box culverts and highway arch bridges.

**Stone & Webster Engineering Corporation, Boston, Mass.,** has printed a book containing brief data regarding various water-power plants which it has constructed. Of the twelve plants described therein, six are for companies managed by the Stone & Webster Management Association, and six were constructed for companies which are in no way affiliated with the organization.

**General Electric Company, Schenectady, N. Y.,** has issued Bulletin No. A 4061, which is devoted to the subject of electric arc headlights. Bulletin No. A 4071 describes and illustrates ornamental lamp brackets and center span suspension fixtures for series and multiple incandescent street lighting. Bulletin No. A 4087 is devoted to direct-current motor-starting panels for heavy service. Bulletin No. A 4095 pertains to direct-current switchboards. Bulletin No. A 4097 deals with ventilated railway motors and Bulletin No. 4947 A describes Edison Mazda lamps.

**Electric Service Supplies Company, Philadelphia, Pa.,** has issued a booklet illustrating and describing the automatic trolley guard, a new specialty which has recently been added to its line of electric railway equipment. This booklet illustrates the dangerous situation a trolley car is placed in when the pole leaves the wire at a steam crossing and graphically shows the great value of the automatic guard in keeping the pole on the wire and allowing the car to pass out of the danger zone in entire safety. The company has also issued the *Keystone Traveler* for May, 1913, which contains an interesting article describing and illustrating the automatic trolley guard which is usually placed at dangerous crossings, grade crossings, etc., and which keeps the pole on the wire or automatically replaces it should it fly off while the car is passing through such danger zones. The issue contains other interesting articles on Keystone steel gear cases, Keystone motormen's seats, "protected" rail bonds and prepayment car operation.