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COMMISSION APPOINTMENTS IN NEW YORK

Charles J. Chase may be a most competent man at the engine throttle and William E. Leffingwell a most genial hotel proprietor and worker in village politics, but just why these excellent qualities per se should entitle their possessors to appointments on the Public Service Commission of the Second District is beyond our comprehension. Admitting that the last Democratic convention favored "the appointment of a practical railroad man" on the commission, we insist that if mere words are to be considered a track inspector might as well have been chosen for a practical railroad man as a locomotive engineer. Remedial and constructive rulings always require a common-sense liberal interpretation of the intent of the makers, and we believe that the words "railroad man" connote a man who has a wider business knowledge and breadth of mental activities than one who has lived his life in the cab. If either of the gentlemen appointed have any evidence of other qualifications for the high responsibilities that attach to the office they have been designated to fill, it is a safe assumption that Governor Sulzer would have mentioned them. A good public service commissioner must have more than a narrow technical experience or a capacity for leading local politics. He must be at once a man thoroughly versed in transportation and public utility problems, an economist, a financier. Indeed, public service commission work, properly conducted, requires the services of the brainiest and broadest-minded men of the community. We admit, of course, that a man properly qualified by nature might grow into a fitness for the position after appointment, but the commission is not and should never be a training school. The very essense of the success of that body means the putting of all complex and delicate questions involving the conduct of public utilities into the hands of men who are first, last, and all the time thoroughly competent to deal with them. These appointments have not yet been confirmed by the Senate, but whether they are confirmed or not, the making of them is a blow at the heretofore existing confidence of the public in the competency and ability of the whole commission.

ARE MODERN CARS TOO LARGE?

One of the many interesting questions brought up by the multiple-unit train tests in Newark, the results of which were published two weeks ago, is that of the most profitable size of car. The tests have shown conclusively that, as the capacity of the unit increases, whether it is a single car or a two-car train, the number of stops increases also, not in direct proportion, but in accordance with a law which is surprisingly well defined when it is expressed as a curve. This curve will naturally vary somewhat according to the character of service on the line under consideration, but its general form is probably the same for all lines and classes of service. Hence it is obvious that an increase in the number of stops, especially where this is already high, and where there is no chance to make up time between stops, is bound to affect the schedule detrimentally. Eventually, the size of the car or train unit will reach a point where a further increase in size will make comparatively little difference, as, for instance, where stops are made at every corner; but this point, as shown by the tests, is considerably beyond any capacity of the car or train which has received any consideration up to the present time. On the other hand, the increase in the number of stops per mile caused by an increase in capacity of a very small unit, such as a twenty-passenger car, is of serious proportions, and it is evident that an appreciable slowing down of schedules must have accompanied the change from the old single-truck 20-ft. electric car to the modern double-truck equipment with seats for fifty or more passengers. The exact extent of this general decrease in schedule speed is necessarily obscure, yet its presence is a matter well worthy of the most careful study, for it is certain that slower schedules mean higher operating costs in almost exactly inverse proportion.

CAR DEFECT REPEATERS

On some roads which are too small to afford a shop clerk the master mechanic is just about as keen to keep car records as the average auditor is to pack a journal box. He will not deny the worth of such data, but he does feel that pen and pit are too much of a combination for the same man. So from day to day he may tinker with car defects, but he will make no great effort to cure them unless his memory is good enough to catch what the shop man calls "repeaters," namely, those troubles which recur again and again despite renewals. To be sure, it is perhaps unreasonable to expect a ten-car or twenty-car railway to keep the mileage of a dozen items, yet a great deal of

good will be obtained from a simple diary of every car. This fact was proved lately on a line where four cars of new type had been paying daily visits to the shop at an upkeep cost of 2½ cents per mile run. The first master mechanic had kept no records but had merely put in new parts as fast as the old ones failed. His successor, however, began to keep a log of all defects, one card being used for each car. In very short order he saw that one car was giving far more trouble from damaged brushes than any of the others. At first the brushes were replaced without thought, but the rapid returns of this car to the shop, as exposed by the record, forced a search for the cause of the evil. It was simply too much play in the brush holders. Grounded headlight resistances were found to be common on all of the cars, but this trouble was also rooted out as soon as it was found that the resistances needed shields to protect them from splashing water. Half a dozen other repeaters were detected, analyzed and removed by means of this simple record. It is likely that from now on the cost of repairs on that road will be far less than when the cars were new.

THE ILLINOIS PUBLIC UTILITY LAW

The Illinois public utility law, to which we briefly alluded in our news notes last week, illustrates the cumulative effect of the spirit of regulation which has prevailed in the country during the last few years. It aims to give power to regulate and to surround that power with various protective measures which shall make it easy for the regulators to regulate and hard for the regulated to object to any act which inexperienced commissioners may do.

In many of its essentials the law follows both the form and the spirit of older laws in other states whose influence has been wholesome, but in some respects it permits a course of action which under the guiding hand of a political or ultra-radical commission may nullify the desire which should exist in a state to upbuild and protect the utility properties.

Section 8 provides that the commission "shall inquire into the management of the business" of all public utilities. We had thought in our ignorance that the management of the business was the affair of those who owned it, provided they conducted it with due regard to the law and the rights, safety and comfort of customers, and that state interference should take place only when these fair methods of operation were not observed. The new commission will have an opportunity to interpret the power given to it, and we hope that it will do so in such a way so as to avoid undue interference with the development of business. We also trust that its "management" of the properties will be such that the managers who are really responsible will not have to dissipate their time by unnecessary attendance at commission hearings or be involved in wasteful expenditures for letters and reports to the commission.

Section 9 says that whenever required by the commission every public utility shall deliver to the commission inventories of its property. This clause wisely leaves action to the discretion of the commission. Few companies have inventories and those that have not prepared any can get them ready only by a material expenditure of time and money. This section should be read in connection with the reference to physical valuation in the part of the law which relates to the approval of new security issues. Under that section the commission, when it deems necessary, shall make an "adequate physical valuation of all property." Likewise we find in Section 22 a stipulation that in cases of reorganization the capitalization authorized by the commission "shall not exceed the fair value of the property involved." There is a broader, but less definite, reference to valuation in Section 30, which deals specifically with this subject. The commission receives power "to ascertain the value of the property of every public utility * * * and every fact which in its judgment may or does have any bearing on such value." The intent is, therefore, to give the commission full leeway to determine what, in its opinion, value comprises and the extent to which different elements constituting total value may be taken into consideration. In other words, what the law does not do specifically it puts within the power of the commission to do, as the judgment of the commissioners dictates. There is more room for justice in this section than in the restriction to physical valuation imposed by the section bearing upon security issues.

In Section 29 the disappointed home-rule advocates in Chicago find ground for complaint. This states that no contract or agreement with reference to franchises shall be valid unless it shall have been approved by the commission. Thus the state strengthens its potential control over matters in the cities.

The clause exempting municipally owned or operated utilities from the jurisdiction of the commission is of itself an unjustifiable piece of legislation; but it does not receive the full force of the injustice with which it should be credited until it is read in conjunction with the bill passed by the same Legislature authorizing cities to acquire, construct, own and to lease or operate public utilities and to provide the means therefor. In other words, cities are encouraged to embark on this uncertain field and have an additional spur by the promised exemption from the regulation to which the private utility is subject.

Among other clauses in the law we find that a known false statement in a stock or bond proceeding may constitute a felony on the part of the unfortunate individual, punishable by imprisonment, and that other similar penalties may be exacted for other acts of omission or commission. This is not the first injection of a provision for criminal punishment in a state public utility law, but it shows the extremes to which the country has passed.

The law provides for the identification of all securities issued with the approval of the commission. It may be difficult to keep this device from tending to operate to the disadvantage of that part of the securities of a utility which came into being before the commission entered office. Lest it should be thought that the stamp of approval of the state on securities passed by the commission constitutes an evidence of value the law includes a sweeping disclaimer to the effect that the acts of the commission shall not be held to mean that past and future issues represent actual value of property owned or to be owned by a public utility or the value of such property for rate-making purposes. We think

that the state, notwithstanding its disclaimer, cannot escape a moral responsibility in the matter.

Several other clauses should be mentioned, such as the provision that the commission may order physical track connection between street railroads; that every accident causing the loss of life or limb to any person shall be communicated immediately to the commission by the speediest means, which of course is the telephone and will involve heavy expense unless modified; that any complaint may be made by any person, whether responsible or irresponsible; and the apparently far-reaching stipulation that the commission shall have power to examine books, etc., of construction or other companies or of firms or individuals with whom the utility shall have had financial transactions.

When we say that the law outlines the procedure in case of court review we do not state all the facts; for it stipulates that no new or additional evidence may be introduced in any proceeding, but the appeal shall be heard on the record of the commission and the findings and conclusions of the commission on questions of fact shall be held *prima facie* to be true; and that furthermore a rule, regulation, order or decision shall not be set aside unless it clearly appears that the finding of the commission was against the manifest weight of the evidence, or that the matter was without the jurisdiction of the commission. If legal, this will be a great advantage to the commission in any court proceedings.

We believe firmly in a wise policy of regulation, but hold that both the law and the administration thereof should be reasonable.

TROLLEY LINES FOR WESTERN MASSACHUSETTS

An act recently passed in Massachusetts, which is of supreme interest to the people of the western part of the State, provides for the unification of the electric lines in the State under the control of the New York, New Haven & Hartford Railroad, and the expenditure by this line of $5,000,000 for the building of new trolley lines and extensions to existing lines. The prompt and decisive passing of this bill over the veto of Governor Foss is quite indicative of the fight the hill-town people have been making, for its passage is simply the culmination of several years' work in electing legislators pledged to its support. The trolley question is an all-important one to the so-called five western counties, for in these, comprising an area of 4450 square miles, there are thirty-three towns with neither steam nor electric lines of any sort. According to Leonard Hardy, these towns have lost 50 per cent of their population since 1820, and intercourse, high-school transfer facilities and general prosperity have all suffered. Notwithstanding these facts, Governor Foss vetoed the bill on the ground that instead of providing merely for the needs of western Massachusetts the measure also gives a monopoly of the transportation throughout the center of the State, and that the $5,000,000 appropriated will not build the mileage specified in the act.

We believe that at least the $5,000,000 can be spent in a profitable manner, and central Massachusetts also can well utilize additional trolley lines. On the point of monopoly the power of the Railroad Commission is worth noticing. Besides the usual regulatory power, the commission is authorized to determine the cost of construction and maintenance of the roads, to decide what lines and extensions shall be built, and, if the commission is satisfied that the railroad is financially unable to make the improvements, the law becomes inoperative. If the company fails to construct the lines, it must forfeit a bond of $2,000,000.

From such facts we are led to conclude that the commission has sufficient power to see that the law is carried out by the New York, New Haven & Hartford Railroad along the channels desired, and we hope soon to see the completion of the proposed electric roads, opening up the central and western territory for improved farming and summer vacation land, and in general so quickening the whole territory that even the most hazardous line will soon pass into the actual profit-making class.

SIGNS AND FINES

Lack of legible and definite destination signs on the cars was the reason given by the Supreme Court, Appellate Term, New York, for the award, on July 5, of $50 to a passenger who had sued for the statutory penalty for the refusal of a transfer. On the route in question only two classes of cars are operated in each direction. The complainant thought that he was on a through car and therefore did not comply with the company's rule that even a continuing-trip transfer must be requested on paying fare. On learning that he was on a shuttle car he asked for such a transfer, but it was refused. The court admitted that the company's regulation as to the time of issuing transfers was reasonable, but held that the passenger was justified in his contention that the sign on the car was too inconspicuous at night. The destination indicator on this particular line is a block sign only 4 in. deep, and the lettering, of course, is still smaller. Although the sign is suspended from the front of the hood, it is not illuminated. It is almost necessary on this line, therefore, for the experienced passenger to signal the first car that comes along on this line, and, if it is the wrong car, to let it proceed, thereby putting the company to the delay and expense of an unnecessary stop. On the other hand, the chances are about even that the novice will board the wrong car and remain unconscious of his mistake until he is ordered more or less politely to get out.

We believe that the matter of car signs is very much neglected in this country, largely because their importance is underestimated. The elaborate European "story" signs are hardly necessary here, but better signs could usually be added to advantage. One company whose practice on signs is worthy of commendation is the Philadelphia Rapid Transit Company. The combinations of route and destination signs used in that city embody the best features of European practice and really improve on them, as the signs are not cumbersome and are placed to greater advantage. The consequence of this wise policy is that the stranger who desires to go to a certain suburb, say Darby, after he has left the West Philadelphia station of the Pennsylvania Railroad, will recognize his car at once and by the aid of street signs will be able to go to the very spot where his car will stop.

Power-Generating Equipment on the Cleveland, Painesville & Eastern Railroad

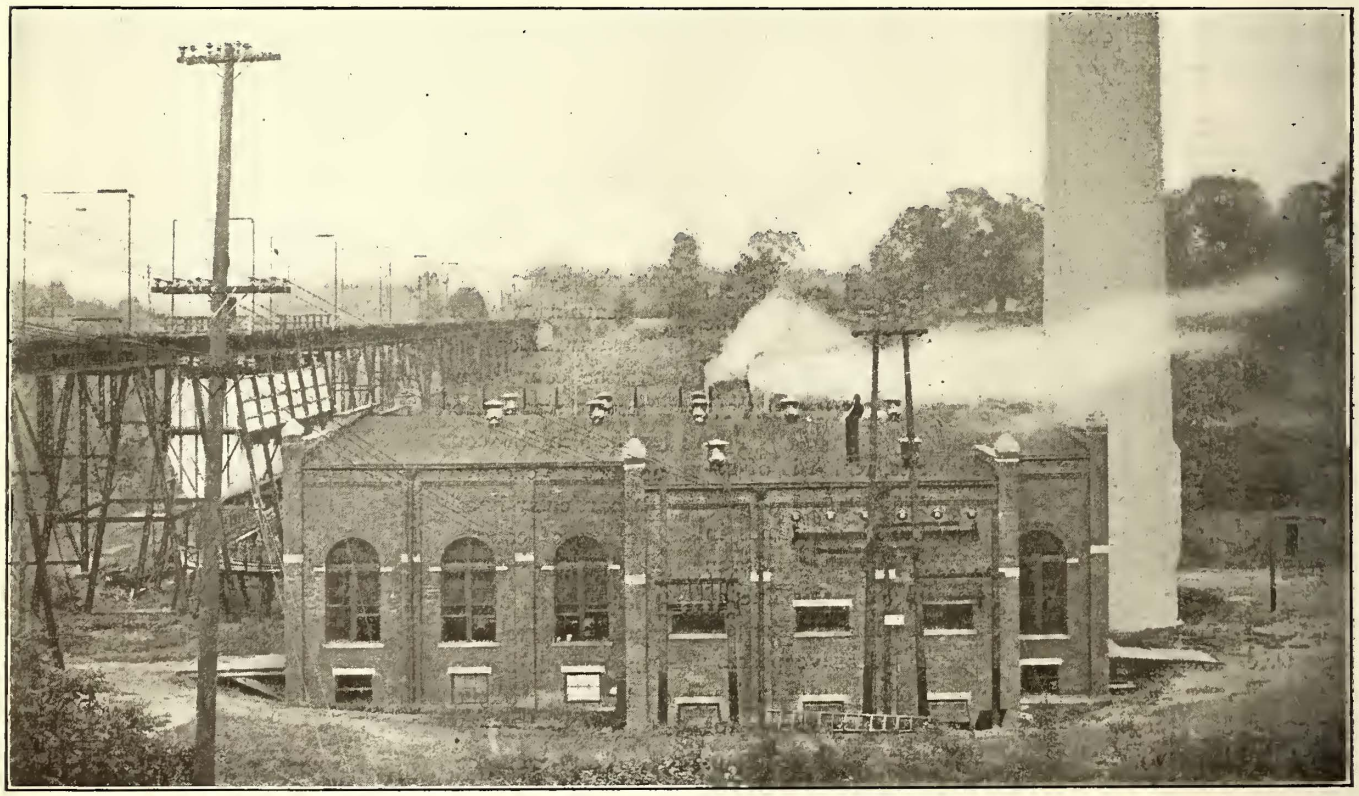
This System, Which Has Recently Consolidated Its Power Plants Into a Single Large Station Possessing Many Novel Features, Supplies Electric Power for Lighting and Industrial Service in Addition to That Required by Its Cars—Electric Current Is Distributed to Substations Equipped with Both Rotary Converters and Frequency Changes

A tendency toward the development of a broader field has of late been reported to exist among interurban electric railways. Following along this line, the Cleveland, Painesville & Eastern Railroad has adopted the policy of entering the lighting field in the towns traversed by its lines, as the company believes that the benefits gained by the recent consolidation of its plants in the railway field may be extended to the other branches of public service.

The town of Willoughby, Ohio, where the company's headquarters are located, has a municipally-owned plant and current is bought by it from the railway company at the switchboard. Power in large quantities, however, is sold directly to the user by the railway company. From Willoughby lighting lines are extended to Wickliffe on the west and Mentor on the east. From a substation in Painesville will be fed the towns of Perry, Richmond and Fairport, and the Geneva substation will supply Madison, Unionville and Saybrook, the average run being about 8 miles on each side of the generating plant or substation.

The company has been in the lighting business for only eighteen months and already has secured loads of over 250 kw in the towns of Willoughby and Mentor, and this without making any extensive campaign for lighting business. It is now negotiating with several municipalities for pumping their water supply and has excellent prospects of securing some good business along these lines.

The rate charged for lighting is 11 cents per kw-hr., less 2 cents discount if paid on or before the tenth of the month. Power rates are based on a sliding scale depending on the load factor. They vary from 5 cents per kw-hr. to 1¾ cents per kw-hr., with a guaranteed minimum of $1 per month per hp of connected load. Another schedule in force makes use of a maximum demand meter, with the same rates for installations over 50 hp in capacity, in which case the customer furnishes the transformer equipment and buys energy on the high-tension side at 2200 volts.



C., P. & E. Power—View of Power House, Showing Coal Bunker Under Main Line Trestle

The company has not entered into an active campaign for domestic appliances as yet, though a great many are in use on its lines, believing it best to develop the territory and secure customers before making a campaign of business development. The entire railway traverses a well-populated, fertile country, abounding in agricultural and dairy products and having great natural beauty. About 40,000 people are located in the territory served by the line.

POWER STATION

The power house is located in the town of Painesville, Ohio, on the banks of Grand River. It consists of a main building approximately 97 ft. x 105 ft. and an annex 42 ft. x 21 ft. The chimney is of Custodis radial brick 200 ft. in height and 13 ft. in inside diameter, built to take care of an ample increase in boiler capacity.

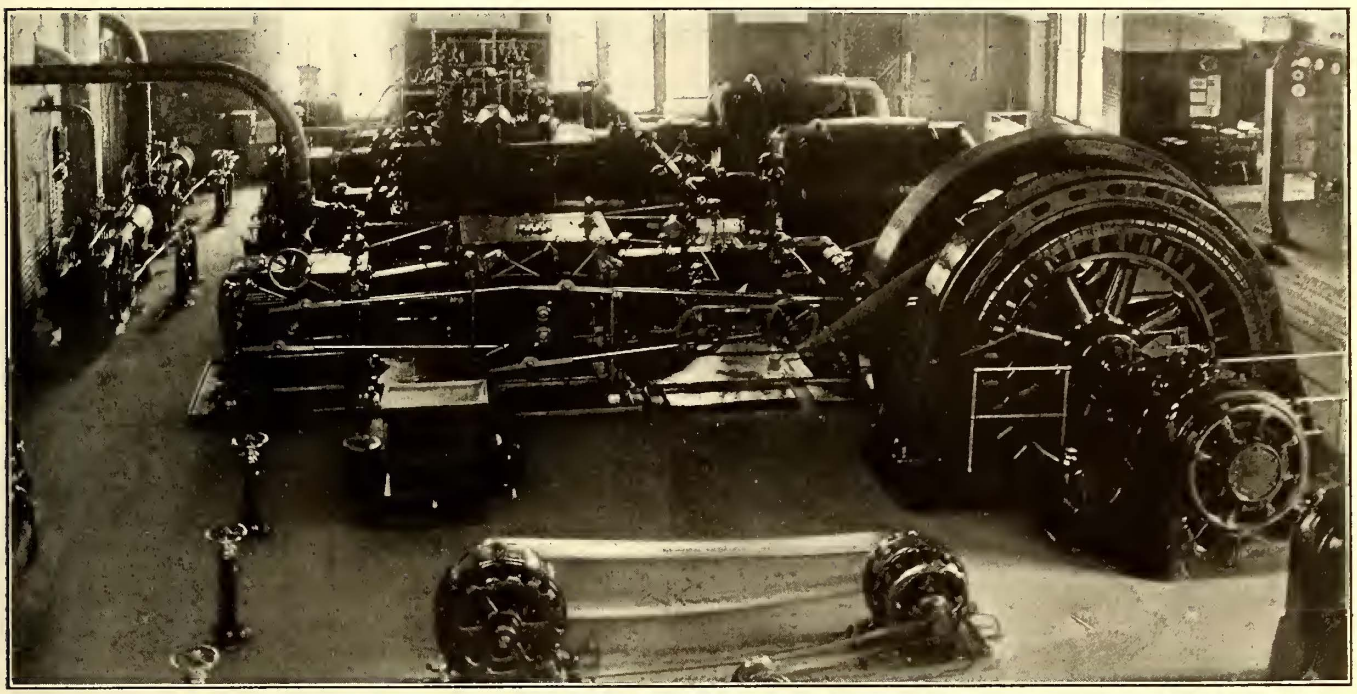
Coal is obtained over the tracks of the Lake Shore & Michigan Southern Railroad, and the method of handling it is one of the most unique features of the station. A

steel hopper with a capacity of 500 tons which receives coal direct from railroad cars is built into the trestle over which pass the tracks of the electric railway. The railroad car containing the coal is taken out on the trestle between the scheduled times for the interurban cars by a home-made electric locomotive, and the coal is dumped direct into the hopper, the entire unloading being accomplished in a period of about ten minutes. The hopper has sufficient capacity for approximately ten days' supply.

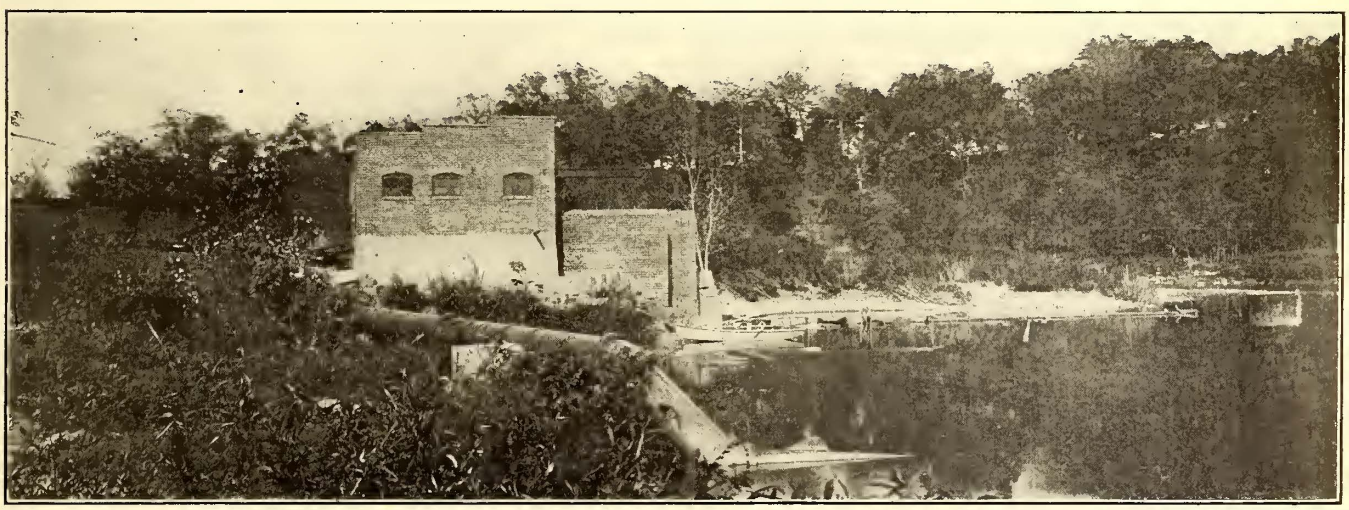
The locomotive, shown in the upper illustration on page 97, was made in the company's shops at Willoughby. It is weighted down with steel punchings from the shop and is equipped with two 50-hp motors and automatic air brakes. It will haul two gondola cars of coal at each trip and obviates the necessity of sending a work car and its crew from the carhouse at Willoughby whenever it is desired to unload coal.

From the hopper the coal falls by gravity into cars running on a track beneath, which is seen in the illustration. These run into the boiler room upon an elevated track located above the stoker hoppers as shown. Here it is dropped direct into the stokers as required. The average coal consumption is about 40 tons a day.

The ashes drop into brick-lined steel hoppers equipped with Hunt gate valves of the same type as those used for the coal. The ash tunnel is located directly under the furnaces, and ash cars run from there to an elevator, where they are hoisted to an outside track. The ashes are used for filling in the low ground adjacent to the power house. The ash cars are interchangeable with those used for hauling the coal, and it is proposed to extend the elevator at the end of the ash tunnel over the railroad tracks so as to enable the ashes to be raised and dumped directly into ballast cars.



C., P. & E. Power—Interior View of Engine and Turbine Room



C., P. & E. Power—Pump House, Intake Well and Discharge Line

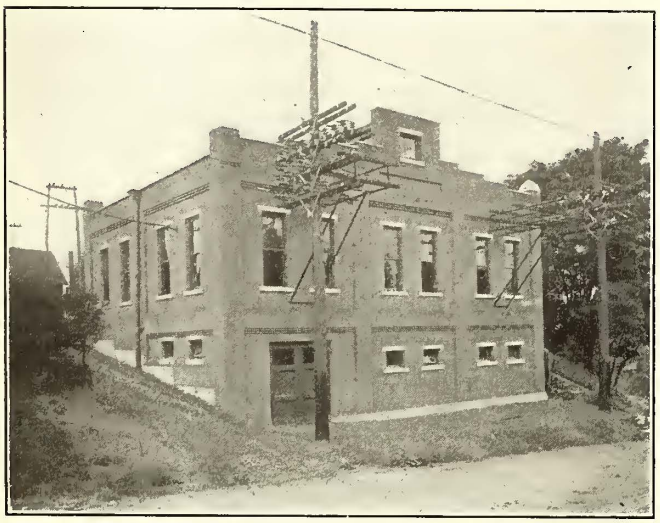
BOILERS, PUMPS AND CONDENSERS

The boiler plant consists of three batteries of two 166-hp Stirling boilers, aggregating 2200 hp in capacity.

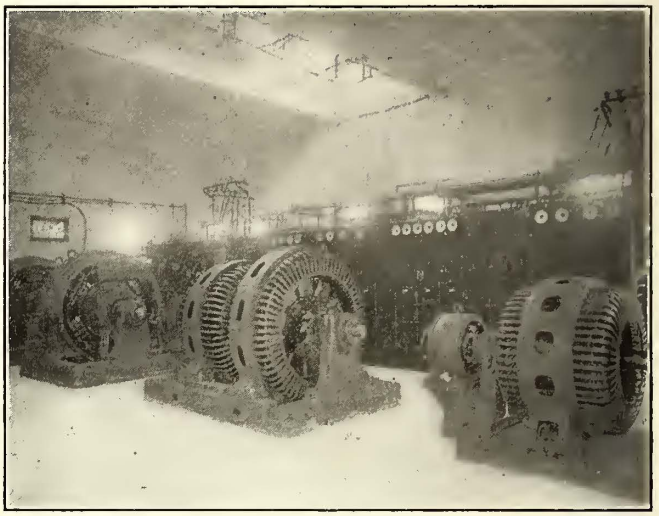
Cooling water for the surface condensers is taken from the Grand River, and the siphon circulating system used possesses some novel features. A pump house is located on the banks of the river approximately 350 ft. from the power house. It is a brick building with dimensions ap-

proximately 26 ft. x 17 ft., and, owing to its proximity to the river bank it was found impossible to secure even a clay foundation on which to build it. Consequently it was constructed in the form of a reinforced concrete basket set on concrete piling.

In order to secure an uninterrupted supply of circulating water free from all débris, a concrete intake box having two sets of screens was sunk near the edge of the main

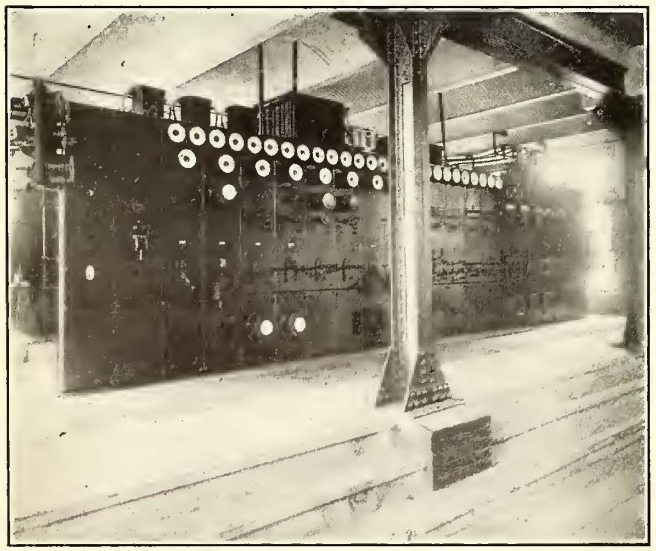


C., P. & E. Power—Exterior View of Willoughby Substation, Showing Cable Racks at Front of Building

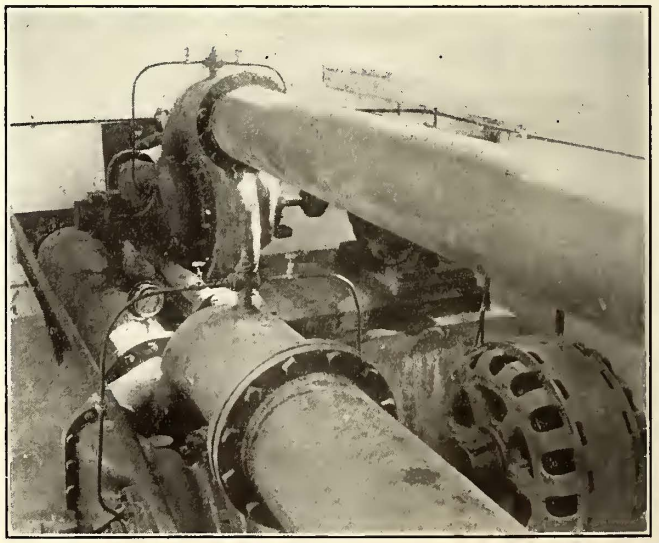


C., P. & E. Power—Interior View of Willoughby Substation, Showing Rotary Converters and Frequency Changers

channel of the river. The upper portion of the box is covered with a perforated caisson built of boiler plate and having a screen bolted to the top so that even when flood waters completely cover the intake clean water can be secured. The intake box is connected with a 24-ft. storage well just outside of the pump house by a 48-in. tiling some 80 ft. in length. The water before entering the well passes through another box equipped with double screens, and it has been found that an ample supply of clean water is



C., P. & E. Power—Main Switchboard in Power House



C., P. & E. Power—Interior of Pump House

assured without the use of the twin strainers or similar appliances usually introduced in circulating lines.

The pumping equipment consists of two 14-in. centrifugal pumps, each having a capacity of 500 gal. per minute and driven by a 50-hp, 440-volt induction motor. These motors are controlled entirely from the power house, although air-break switches are installed at the pump house for use in case of emergency. It is unnecessary, therefore, for anyone to visit the pump house except for purposes of inspection.

Each pump has a separate suction pipe to the well, but they both discharge into a single 20-in. main leading to the power house. The various condensers receive water from this single main and discharge it into another single 20-in. main which leads back to the river, making a completely closed siphon circuit. These pipes are cast iron, having flanged joints, and they are laid in a 6-ft. concrete tunnel extending from the power house to within 75 ft. of the pump house. Gate valves operated from the turbine floor control the supply and discharge lines to each condenser, so that any condenser may be taken off the line for purposes of inspection or repair without breaking the siphon effect of the circulating system. At the same time these permit regulation of the amount of water used in the condensers under various operating conditions. A combination wet and dry pump is installed to start the system if for any reason it should lose the vacuum in the siphon. The discharge pipe to the river is provided with a Y connection which it is proposed to tap with a pipe and thus provide a supply of warm water to get rid of any needle ice which may gather at the intake in the winter.

Owing to the fact that the system embraces a siphon, the motor-driven pumps have only to overcome the friction

of the complete circulating system, thus calling for considerably less expenditure of energy than if they had to work against the entire head. A steam-driven centrifugal pump is also installed at the pump house for cleaning out the well, and a telephone line between the pump house and the power house affords a ready means of communication when anyone has occasion to visit the pump house for purposes of inspection.

PIPING AND TESTS

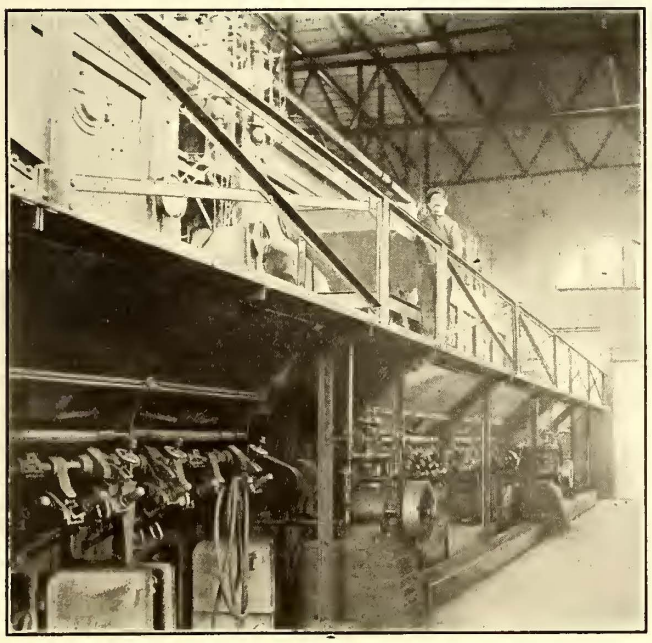
All of the valves used in connection with the engine, turbines and condenser equipment are controlled from the engine-room floor, so that the engineer does not have to leave the floor but can control all machinery therefrom.

Great importance is attached to the value of tests and one is being run all the time to ascertain just what is being done and what results are secured. Accurate records are kept of coal, water and ash, so that the operating efficiency can be computed at any time. A water meter accurately measures the boiler-feed water, the ashes are weighed, and the percentage of ash in the coal is obtained. The total operating force consists of eleven men working in two twelve-hour shifts.

The scheme of painting the piping around the station in different colors greatly facilitates the work of the employees, as one can tell at a glance just what the pipe is carrying. Live steam is indicated by green, exhaust steam by brown, hot water by red, cold water by black. The engine room walls are painted white with a green border.

ELECTRICAL EQUIPMENT

The generating equipment formerly consisted of two 360-kva, twenty-five cycle G. E. generators, direct-connected to two 18-in. x 36-in. x 42-in. Cooper Corliss engines delivering current at 6600 volts. The natural increase in load, however, and that due to extensions and other business secured, required additional station capacity, and the following apparatus was installed in 1912: Two 1670-kva, twenty-five cycle, 1500-r.p.m., 6600-volt Westinghouse

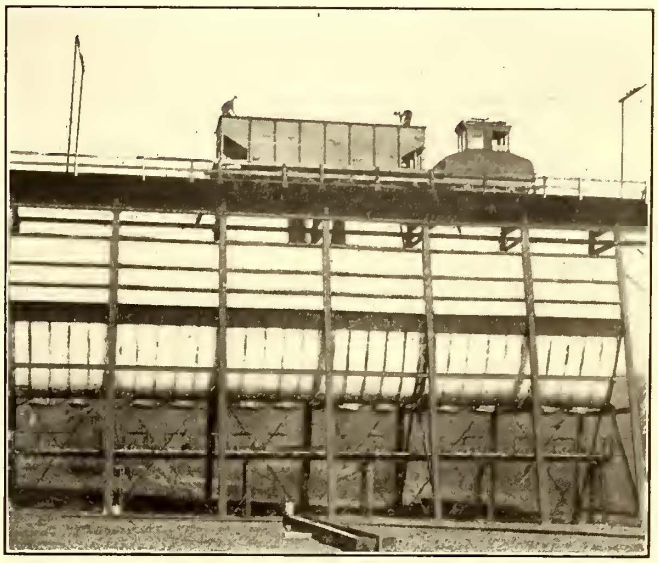


C., P. & E. Power—View of Boiler Room, Showing Push Car Bringing in Coal from Outside Bunker

turbo-generators and two 50-kw, 125-volt turbo-exciter sets, together with a twenty-two-panel switchboard.

The switchboard is located on a raised portion of the floor overlooking the remainder of the engine room. A swinging bracket at the end contains two voltmeters, a frequency meter and a synchroscope. Each generator panel is equipped with an ammeter, a voltmeter, power-factor meter, watt-hour meter, field rheostats and non-automatic oil switches. The high-tension feeder panels are equipped each with three ammeters, a watt-hour meter, an automatic oil switch and relays. Four panels are devoted to the control of the exciters with the usual equipment of ammeters, voltmeters, rheostats and knife switches.

A substation, consisting of two 360-kva, 600-volt d.c. rotary converters and a portion of the main switchboard devoted to their control, is located in the power house.



C., P. & E. Power—Coal Bunker Built Into Main Line Trestle

An interesting point in connection with the switchboard is the use of the 7-in. dial meters, which effect a great saving of space and yet do not sacrifice other essential features, such as accuracy or readability.

The main transformers are arranged in two banks, each having three 500-kva units, located in the basement. They step up the voltage from 6600 to 13,200 for transmission to the other substations at Willoughby, Geneva and Ashtabula. At some later date, however, the transmission voltage will be raised to 22,000.

WILLOUGHBY SUBSTATION

The exterior of the substation at Willoughby is shown in the illustration on page 95, and the method of bringing out the low-tension wires is indicated very clearly. The three-phase high-tension line is brought in at the rear of the building.

The transformers are in the basement, to which the high-tension lines run directly after passing through electrolytic lightning arresters and disconnecting switches, which are in a small annex on the side of the building where the high-tension lines enter.

The transformer equipment consists of three 115-kva, 2200-volt, twenty-five-cycle units for the frequency changers described below, and six 175-kva, 460-volt, twenty-five-cycle units for the rotary converters. These transformers are mounted on truck platforms, on concrete foundations, so that they can easily be moved for purposes of inspection or repair. Three 5-kw, 2200-volt to 440-volt transformers are also installed here for the motor-driven exciters. The field rheostats for the various machines in the substation are all installed on pipe framework in the basement.

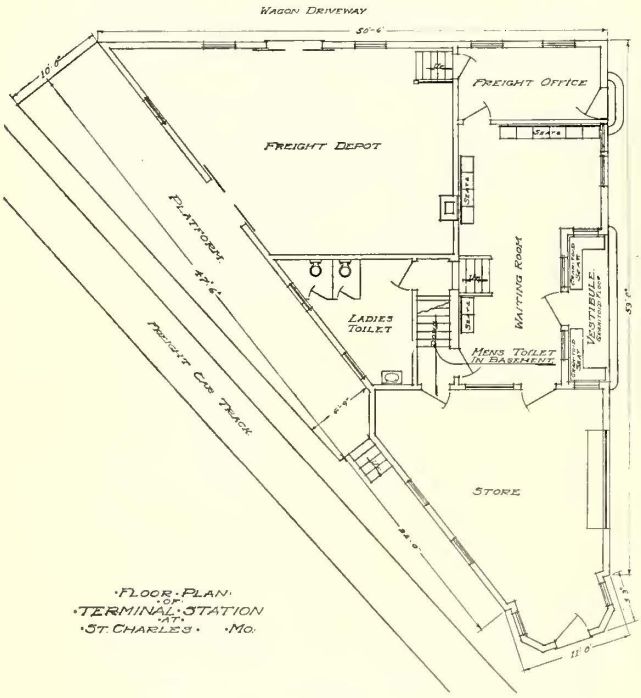
Direct current for the operation of the road is obtained through one 300-kw and one 500-kw, six-phase, 600-volt, twenty-five-cycle rotary converter. Each rotary is equipped with an end-play device. For supplying lighting service to Willoughby and the neighboring towns the frequency is changed to sixty cycles by means of two motor generators. One of these sets consists of a 290-hp, 2200-volt, twenty-five-cycle, three-phase synchronous motor, direct-connected to and mounted on the same base with a 250-kva, 2300-volt,

sixty-two-and-one-half-cycle, three-phase generator with a 6-kw, 125-volt exciter mounted at the end. The speed of the set is 750 r.p.m. The second set consists of a 112-hp motor, a 94-kva generator and a 5-kw exciter, the other characteristics being the same as those of the first set. A motor-generator set consisting of a 15-hp, 440-volt, three-phase, twenty-five-cycle induction motor and a 10-kw, 125-volt d.c. generator, running at 1400 r.p.m., is used to furnish excitation for the synchronous motor fields.

All of the apparatus installed throughout the main stations and substations, including the turbines, rotaries, motor-generator sets, switchboards, transformers and lightning arresters, was furnished by the Westinghouse Electric & Manufacturing Company.

OTHER SUBSTATIONS

The equipment of the substation at the Painesville power house will be increased in the near future by the addition of a 500-kw frequency-changer for lighting and power



St. Charles Terminal—Plan Showing General Arrangement—Front View of Building

At present the frequency changing equipment consists of a 75-kw, 2200-volt, sixty-cycle generator direct-connected to a 100-hp motor.

The Geneva substation is equipped with two 300-kw G. E. rotary converters. This station is now being enlarged to accommodate one 250-kw and one 150-kw frequency-changer, built by the General Electric Company. The general arrangement of this station will be similar to that of the Willoughby substation. At Geneva there is installed a 600-kw rotary converter and the same lighting equipment and general arrangement as described for Willoughby. At Ashtabula there is a 300-kw rotary for the railroad, but as yet no lighting equipment has been installed.

ENGINEERING

All of the engineering and construction work involved in the installation and operation of the above-mentioned apparatus has been installed under the direction of J. G. Swain, superintendent of power and shops.

The Bureau of Foreign and Domestic Commerce, Washington, D. C., has received from Commercial Agent D. C. Alexander, Jr., a report on street railways and electric lighting in China, which deals chiefly with the financial features of concessions and enterprises. The report will be loaned to interested persons or firms making application to the bureau.

NEW WAITING STATION AT ST. CHARLES, MO.

A new building of novel arrangement containing a waiting station for passengers and a freight station for the express company has recently been completed by the United Railways Company of St. Louis at St. Charles, Mo., a city of 10,000 inhabitants located on the north bank of the Missouri River, 13 miles from the city limits of St. Louis. This is the western terminus of the Missouri Electric Railroad Company, a subsidiary of the United Railways Company of St. Louis.

The building is triangular in shape, being 53 ft. in length along the Third Street side and extending 50 ft. back from this street. It faces the western end of the highway bridge across the Missouri River, and the track crossing the bridge divides as it approaches the waiting station into a switch for passenger cars on the street side of the building and a switch for the express cars at the rear of the building.

The structure is covered with white Portland cement plaster laid on metal lath, and it includes a store, waiting rooms, express station and office, as well as the necessary conveniences for the public. A steam-heating plant is located in the basement beneath the express station, and the building is electrically lighted, ornamental lamps being placed under the eaves and around the tower. The total cost, exclusive of tracks for passenger and express cars, was about $7,000.

CONVENTION EXHIBIT HALL PLANS

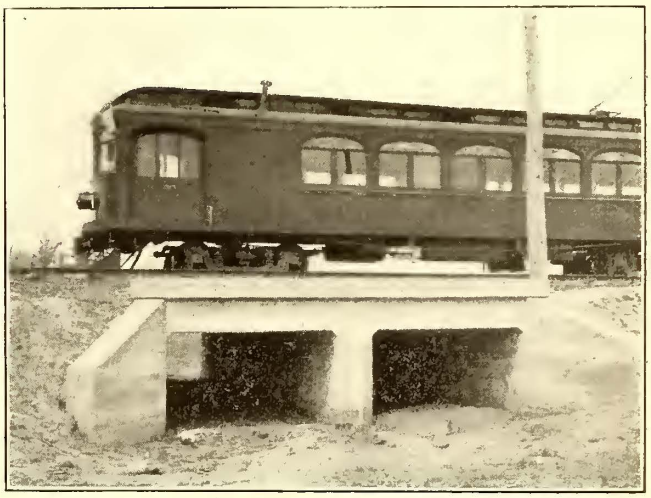
The American Electric Railway Manufacturers' Association has found it necessary to rearrange the original floor plan of the main building on Young's Million Dollar Pier for the American Electric Railway Association convention in October on account of the large amount of space which has been applied for. This includes a rearrangement of both the exhibit and reception portions of the building. The exhibit committee is now arranging for many new and novel features for decorating this reception space and intends to make it more attractive and inviting than any previous convention. It is planned by the committee to hold practically all entertainments in the buildings on the pier as the rearrangement of the booths will provide a very considerable area which can be utilized in this manner to the fullest extent.

New 40-Mile Extension of the Waterloo, Cedar Falls & Northern Railway

An Account of a 600-Volt D. C. Interurban Line Recently Built in Iowa—The Design Includes Permanent Track and Roadway Structures, Well-Built Overhead Lines and Adequate Way-Station Facilities

The Waterloo-Urbana extension of the Waterloo, Cedar Falls & Northern Railway, Waterloo, Ia., is a good example of a modern interurban electric railway. In the construction of this 40-mile section which, in all probability, will ultimately extend to Cedar Rapids, Ia., first cost has not been the governing factor, but each item entering into the road has been carefully considered with a view to reducing maintenance. In addition to providing practically all permanent structures in the roadway, adequate track facilities have been included at each way station, and passing sidings have been made sufficiently long to provide for future growth. The new line taps a fertile farming district and growing villages hitherto without rail transportation, with the exception of La Porte City, which is served by a steam railroad. Although the Waterloo-La Porte City section of this line has been in operation but a short time, traffic has developed rapidly, and this portion is now on a good paying basis.

Waterloo, Cedar Falls & Northern—Standard Flat-Top Bridge Over Cedar River



Waterloo, Cedar Falls & Northern—Standard Flat-Top Arch

ROADWAY DETAILS

The general direction of the new extension is southeasterly from Waterloo, and the entire line is constructed on private right-of-way varying in width from 100 ft. to 200 ft., dependent upon the grading and terminal facility requirements. To obtain a desirable outlet from Waterloo it was necessary to extend the belt line for a distance of 3 miles along the eastern limits of the city for through freight traffic, and one of the street railway lines serves as an entrance for passenger trains. Between Waterloo and La Porte City, a distance of 17 miles, one 6-deg. curve is the maximum, the rest being 3 deg. or less. The maximum gradient on this section of the line is 0.1 per cent. On the south end of the extension—that is, between La Porte City and Urbana, a distance of 22 miles—the maximum curvature is 5 deg. and the ruling grade is 1 per cent. This portion of the line traverses a comparatively broken country paralleling the Cedar River, and the maximum gradient is used at the point where the line leaves the river valley.

Grading on the northern section of this extension was comparatively light, but south of La Porte City the total quantity of earthwork to be moved is large. At the time of writing the grading between La Porte City and Urbana was 60 per cent completed, and the bridging, which includes a reinforced concrete arch bridge containing nine 80-ft. spans, was 85 per cent completed. All earthwork is being handled for 23 cents per cubic yard when the haul is less than 500 ft., with an addition of 1 cent per cubic yard per 100 ft. for hauls exceeding 500 ft.

The standard track and roadway design includes a 16-ft. roadbed on embankments and 24 ft. in excavation. The latter width provides for two 4-ft. ditches paralleling the cut slopes, which are 1½ to 1, except in rock, when the slopes are varied from ½ to ¼ to 1, depending on the quality of the material. For a distance of between 3 miles and 4 miles in the line between La Porte City and Brandon practically all excavation is through limestone. As soon as this section of the line is in operation the company intends to install a crushing plant to prepare ballast for the entire line.

BRIDGES AND CULVERTS

All concrete bridges and culverts were designed for Cooper's E 60-loading and the wooden trestles meet Cooper's E 50-loading requirements. The former loading is based on two 213-ton locomotives each on eight-drive wheels, followed by a 6000-lb. per lineal foot uniform train load. As these structures are permanent, it was considered advisable to design them to meet possible future requirements. All small waterways were provided with Acme nestable corrugated culvert pipes. When the opening was too large for a corrugated pipe a reinforced concrete flat-top arch was built. In a few instances where there were unstable foundation conditions and the opening was so large as to require pile foundations, ballast-deck trestles built of creosoted timber were used.

Some interest may be attached to the unit cost figures for concrete structures. Practically all the concrete bridges were built by the Gould Construction Company, of Davenport, Ia., at the following unit prices:

Furnishing and driving piles, 40 cents per lineal foot.
Dry excavation, 50 cents per cubic yard.
Wet excavation, $5 per cubic yard.
Cofferdams, $50 per 1000 ft. B. M.

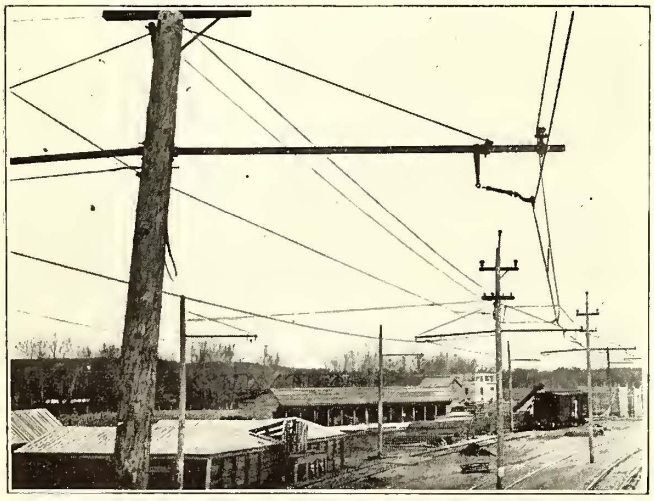
The foundation specifications called for 1¼ barrels of

cement to each cubic yard of mixed concrete, at a unit price of $8.20 per cubic yard. The arch ring and spandrels were built of reinforced concrete in the proportions of 1¾ barrels of cement to the cubic yard of mixed concrete, for which a price of $8.90 per cubic yard was paid. The price of furnishing and placing reinforcing bars was 2½ cents per pound. All bridges and culverts were designed and built under the supervision of T. E. Rust, chief engineer Waterloo, Cedar Falls & Northern Railway. Views of two typical bridge and culvert designs are shown in the illustrations.

TRACK CONSTRUCTION

The main-line track is laid with 85-lb. A. S. C. E. rail in standard lengths with Continuous joints and twin terminal compressed bonds. As is standard with this road, 6-in. x 8-in. x 8-ft. cedar ties were used, spaced seventeen to a 33-ft. rail. To insure against side shear as well as spreading gage on curves, standard tie plates will be employed at these points. Other track standards include passing sidings 2000 ft. in length, double-ended, with No. 9 turnouts in the main line. At each way station a passing track of this standard length has been built at 18-ft. centers with the main track, and industrial or other side tracks lead from it. Each turnout is provided with a high Ajax Forge Company's switchstand, set on two 6-in. x 8-in. x 12-ft. creosoted yellow pine head-blocks.

Just north of La Porte City a comprehensive interchange



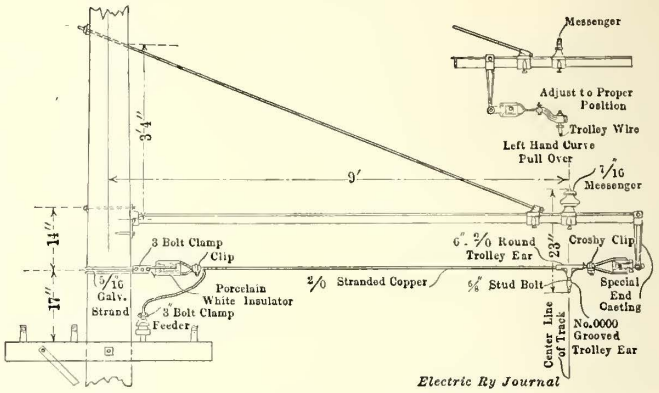
Waterloo, Cedar Falls & Northern—Catenary Construction at Sidings

track layout was installed between the main lines of the electric railway and the Chicago, Rock Island & Pacific Railroad, on the adjoining right-of-way. It was built to relieve the interchange track facilities between these roads in West Waterloo, and to serve at the same time for the reception and delivery of freight coming from the new territory tapped by the electric line south of La Porte City. This interchange layout includes two parallel storage tracks sufficient in length properly to clear fifteen cars on each, one serving as a delivery track and the other as a receiving track. Leads from both the steam and electric roads approach these two storage tracks at both ends. As mentioned in an article on the operation of this property in the Electric Railway Journal for Aug. 24, 1912, approximately all the interchange traffic between the steam railroads entering Waterloo is handled by the electric belt line, which practically surrounds the city.

OVERHEAD LINE CONSTRUCTION DETAILS

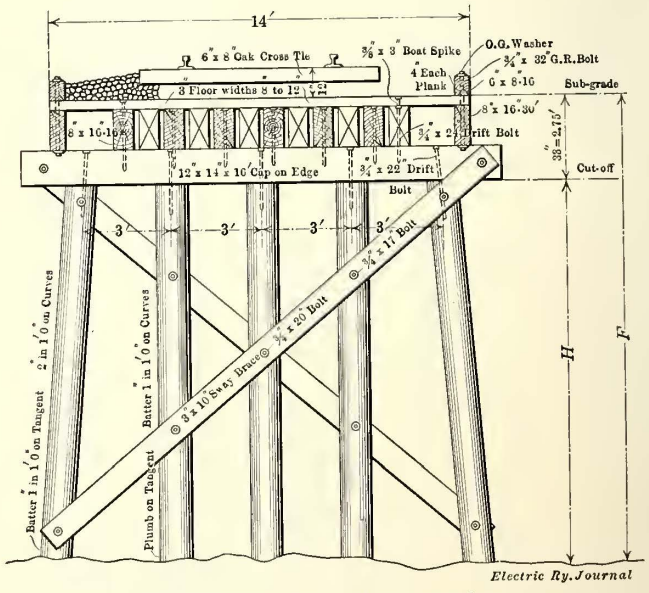
A single line of 40-ft. 7-in. cedar poles supports the catenary trolley, telephone, telegraph and transmission lines. These poles are spaced at 150-ft. intervals on all track up to a 1-deg. curve, at 120-ft. intervals between a 1-deg. and 2-deg. curve and at 100-ft. intervals for all curves of shorter radius. The catenary line material is of the Ohio Brass Company's open-loop hanger design with extruded metal clinch ears. These catenary hangers are arranged for five-point suspension and support a No. 0000 grooved trolley from a 7/16-in. galvanized strand messenger.

The catenary trolley construction is carried on a 10-ft. mast-arm, provided with a special end casting for pull-



Waterloo, Cedar Falls & Northern—Catenary Feeder and Steady Strain Construction

overs on curves. The use of this special-end casting permitted the purchase of a standard mast-arm for the entire road. As shown in the illustrations, the end casting may be applied to the mast-arm for either a left-hand or right-hand curve pull-over. On all curves up to 1 deg., where the pole spacing is at 150-ft. intervals, pull-overs are installed only at each mast-arm. As the curvature increases up to the maximum of 6 deg., the number of pull-overs is increased to make the trolley alignment conform as nearly as possible to the track curvature. Strain guys or catenary anchors are installed at each end of every curve. These



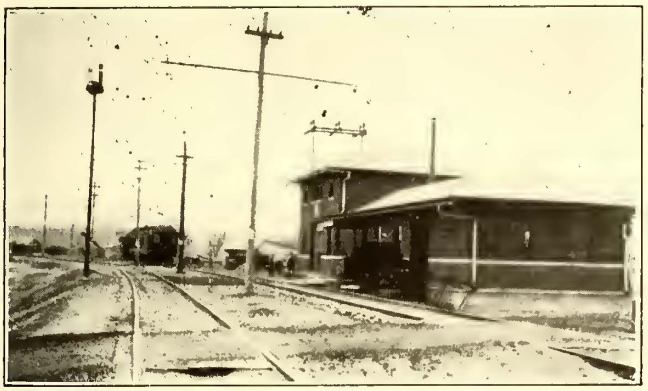
End Elevation of Bent with 15 ft. Reaches

Waterloo, Cedar Falls & Northern—Cross-Section of Ballast Deck Trestle

include an additional pole set opposite the one which supports the trolley and transmission lines, to which two strain guys are attached. These in turn connect to an anchor ear on the trolley and messenger 75 ft. distant. Back guys from these two poles carry the strains to ordinary guy anchors.

Other special features in the overhead-line construction embrace the method of supporting the trolley across

two reinforced-concrete bridges over the Cedar River. At these points tubular steel poles with an 8-in. base are set in 10-in. pipe openings, which were embedded in the concrete parapet walls when the bridge was constructed. After the trolley pole had been dropped in position it was set plumb and surrounded with a sand cushion. It also was necessary to insulate the mast arm from the pole. A brush or dipped treatment of carbolineum has been ap-



Waterloo, Cedar Falls & Northern—Standard Way Station Layout

plied to all pole butts, gains and ridges, and all cross-arms have been treated by a similar process.

WAY-STATION FACILITIES

The mileage between important way stations on this extension made it possible to build a combination passenger station, freight station and substation at each point. The standard design includes a building of brick, concrete and steel, 101 ft. in length by 22 ft. in width. The substation occupies 30 ft. 6 in. at one end of the building, adjoining which is a 12-ft. ticket office which extends across the width of the building. A waiting room 16 ft. in width and a freight room 36 ft. 6 in. long occupy the other end of the building. A view of one of these standard stations is shown in an accompanying illustration.

Other station facilities include a team track and well-built stock pens and loading chutes. Way-station property, wherever possible, includes a strip of land approximately 300 ft. in width by 2000 ft. in length to permit the railway to offer attractive long-term leases for grain elevators,

Waterloo, Cedar Falls & Northern—Combined Passenger, Freight and Converter Station at La Porte City

coal and building-material supply yards, etc. Each station is provided with a Union Switch & Signal Company's manually operated train-order semaphore. Blades displayed in the upper right-hand and left-hand quadrants control train movement in both directions.

LA PORTE CITY STATION BUILDING

At La Porte City a very handsome combination passenger, freight and substation building has been erected on one of the main thoroughfares. To provide access to this terminal it was necessary to build a stub track from the main line through the city streets for an approximate distance of ¼ mile. This arrangement will delay passenger traffic but slightly and permit through freight movement to be made without local ordinance restrictions. This station is of concrete, brick and steel construction, 50 ft. x 70 ft. in plan. The walls are built of a dark cherry-red face brick laid in mortar of a similar color with Bedford stone trim and coping. The bracket and eave construction is of wood, and the exposed portions of the roof are covered with a cherry-red Spanish roof tile. A comparatively steep ascending grade on one side of the station permitted the freight-room floor to be built at an elevation suitable for loading to and from cars and wagons. The elevation of this floor, as well as the one in the transformer room, is approximately 2 ft. below the waiting-room floor level. The interior of the waiting room is finished with a dark red quarry-tile floor and walls exactly similar to the exterior. The ceiling is paneled and beamed and like the rest of the woodwork is finished in natural oak. An agent's office occupies one end of the waiting room and is separated from it by a built-up brick counter surmounted with a Tennessee marble top.

Interior illumination in the waiting room is obtained

Waterloo, Cedar Falls & Northern—Waiting Room at La Porte City

from Alba balls mounted on especially designed wrought-iron electroliers. These Alba balls are in two sizes, 6 in. and 12 in., and the lighting scheme is so arranged as to give an evenly distributed but not intense illumination. All lighting circuits are carried in conduit to a lighting cabinet in the agent's office, where they are divided and controlled through separate switches and fuses. The lighting in the substation and freight room is also installed in conduit and controlled through a central cabinet. Lamps are installed where they are required for the operation of the substation and the handling of freight. Plans, exterior and interior views of this station are shown in the illustrations.

STANDARD SUBSTATION EQUIPMENT

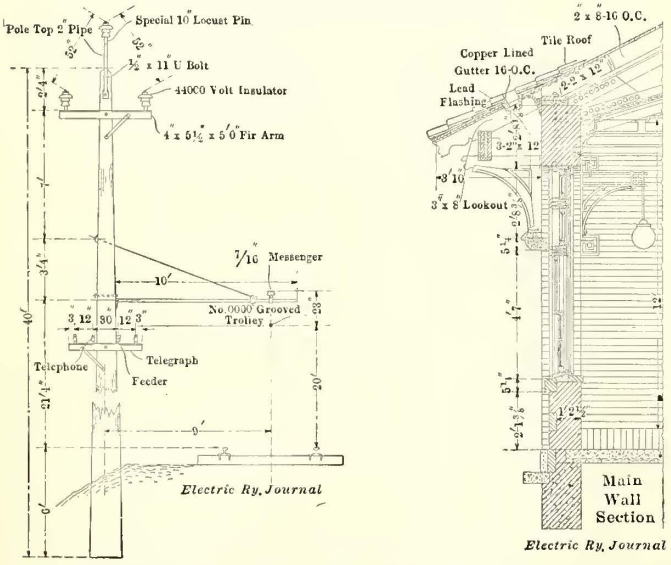
Essentially, the standard substation equipment on this road includes a 500-kw Allis-Chalmers rotary converter, a four-panel General Electric switchboard with horizontal edgewise instruments, and three 165-kva, oil-insulated, self-cooled Allis-Chalmers transformers with 44,000-volt or 22,000-volt primaries. The a.c. side of the converter takes 405 volts and produces 650 volts d.c. The switchboard consists of four panels—two a.c. converter panels, one d.c. machine panel and one feeder panel. The instruments include a swinging-bracket d.c. voltmeter with a 750-volt range, a power-factor meter on the a.c. converter panel, a

1500-amp circuit breaker provided with low-voltage release connected to the speed-limit device on the converter, a 1500-amp indicating ammeter and a 1500-amp GE graphic recording meter controlled by an eight-day clock. The high-tension oil switches are also of Allis-Chalmers hand-operated design.

Both the trolley and feeder have been sectionalized so that any section may be cut out without interrupting the others. These sections are approximately 9 miles in length and the section insulators are installed near each substation. In case a section fails a pole switch located near the substation serves to cut the line through the faulty section. The feeder taps, which are installed at 1000-ft. intervals, consist of No. 00 stranded copper insulated from the pole and mast arm by porcelain strain insulators. A sketch showing the details of the feeder-tap connections will be found on page 101.

The 44,000-volt three-phase transmission line from the generating plant at Waterloo also is sectionalized by a set of horn-gap, air-brake, disconnecting switches at each substation. These switches are mounted on a two-pole led-in tower, at one end of the substation building. An unusual electrical feature of these substations is that all direct current, both positive and negative, passes from the trolley feeder on the pole line into the substation by way of a manhole and underground conduit. The manhole is located near the main-line pole in front of the substation, and the circuits from this point to the feeder are carried up the pole in conduit. After a little more experience with this type of underground feeder connection, the company intends to install d.c. lightning arresters in the manhole so that discharges will be dissipated before they reach the station building. The circuits are installed in conduit throughout the building and all lights are fed from the low-tension side of the transformers. The train-order semaphores are lighted electrically as they are connected with the station lighting. A pilot light in the signal-lamp circuit installed in the station advises the attendant when the semaphore lamp is not burning.

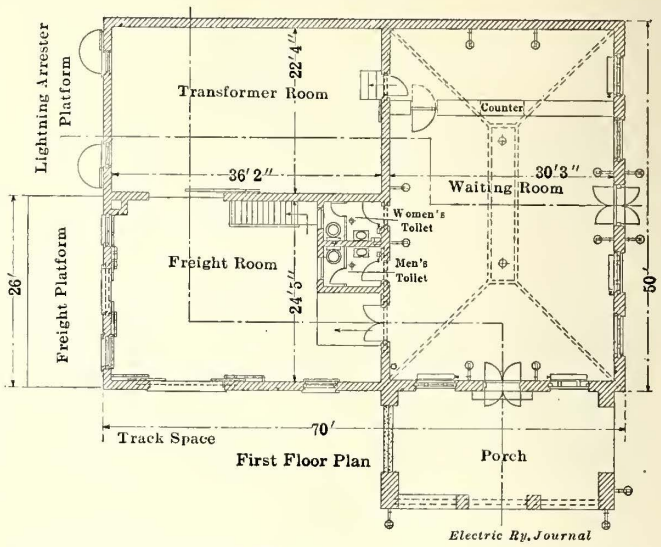
At each joint station the regular force consists of an



Waterloo, Cedar Falls & Northern—Line Construction and Detail of La Porte Station

agent and a helper. By apportioning the hours between these two and requiring the train crews to assist in loading and unloading freight and express, no difficulty is experienced in handling the necessary work.

The Waterloo-La Porte City section, including a 3-mile extension to the belt line, has been in operation since early in January. Judging from the progress already made on the La Porte City-Urbana section, the entire extension should be in operation before the end of this summer. At the present time the regular package-express schedule is composed of two trains each way daily, and an hourly schedule is maintained for the passenger traffic. Freight and express traffic have developed rapidly.



Waterloo, Cedar Falls & Northern—Passenger, Freight and Transformer Station at La Porte City

The design and construction of this new line have been under the general supervision of C. D. Cass, general manager Waterloo, Cedar Falls & Northern Railway, with T. E. Rust, chief engineer, in direct charge of track and roadway construction and G. A. Mills, electrical engineer, in direct charge of the building of overhead lines and equipping substations.

TEXAS COMPANIES CHANGING FROM OIL TO COAL

The rapid advance of the price of crude oil in Texas since 1911 has forced a number of companies to change from oil to coal as a fuel. In 1911 the price for crude oil was 83 cents per 42-gal. barrel. In 1912 it was 87 cents per barrel. In January and February, 1913, it was $1.10 per barrel, and since that time it has advanced to $1.20 per barrel. The necessity of a change in different localities in Texas to obtain most economical results depends largely on freight rates and boiler room efficiency. The Texas Traction Company found it more economical to use coal as a fuel when oil was quoted at $1.20 per 42-gal. barrel. Pea and slack coal is quoted at $1.40 net at the mine plus $1.25 per ton freight, making the cost to the company f.o.b. cars at the power station $2.65. Most of this coal comes from the Oklahoma and Arkansas fields and averages between 10,000 and 13,000 b.t.u. per pound. The quality of fuel oil used averages practically 19,200 b.t.u. per pound. Average results obtained from both the fuel oil and coal show that it requires approximately 2.6 lb. of fuel oil per kw-hr. and 5.5 lb. of coal per kw-hr.

A number of companies are experiencing considerable difficulty in securing a satisfactory automatic stoker which will give maximum results with the Texas bituminous coal. A problem confronting the manufacturers is one of a chain grate which will not permit the fine coal to sift through and at the same time keep the fuel in the fire box from reducing efficiency through the unusual coking quality of Texas coal. Most companies are resorting to hand firing and the use of slicing bars until such time as a satisfactory automatic stoker may be designed to handle Texas coal. Even under these conditions, however, plants which use Texas coal are obtaining economies which exclude the use of crude oil as a fuel at the existing market price.

Papers Read at Pacific Claim Agents' Meeting

Abstracts of Papers Read at the Vancouver Meeting Last Week—The Subjects Discussed Include the Organization of Safety Committees, Unreported Accidents and the Value of Index Bureaus in Dealing with Fraudulent Claims

The fifth annual meeting of the Pacific Claim Agents' Association was held in Vancouver, B. C., on July 10, 11 and 12. Papers were presented by several members of the association. Abstracts of some of these papers are presented herewith.

THE ORGANIZATION AND THE WORK OF SAFETY COMMITTEES

BY THOS. G. ASTON, CLAIM AGENT THE WASHINGTON WATER POWER COMPANY, SPOKANE, WASH.

In discussing how safety committees should be organized and put to work, I wish to describe the system of our company, not as one exemplifying set rules applicable to all companies, for different companies have different needs, but simply as the system with which I am most familiar. We first incorporated a set of rules as follows:

"Name.—The name of the organization shall be the Safety Committee.

"Members.—This committee shall consist of a central committee and eight sub-committees. The central committee shall consist of the claim agent, chairman, general superintendent of railways, superintendent of light and power, superintendent of transportation, and the superintendent of construction. The sub-committees shall consist of:

"1. Two committees from the street railway department, namely: (a) One of the inspectors as chairman, and three motormen of the company. (b) One of the inspectors as chairman, and three conductors of the company.

"2. One committee from the shops, namely: (a) The master mechanic as chairman, and three members from the shops.

"3. One committee from the track and way department, namely: (a) The roadmaster as chairman, and three members from the track and way department.

"4. Two committees from the light and power department, namely: (a) One of the assistant superintendents as chairman and three members of the light and power department. (b) One of the assistant superintendents as chairman and three members from the power stations.

"5. One committee from the construction department, namely: (a) One of the assistant superintendents as chairman, and three members from the construction department.

"6. One committee from the claim department.

"Duties.—It shall be the duty of the members of these committees to report to the chairman of their committee all things which might cause injury to employees of the company, to the general public, to passengers on street cars, pedestrians, or drivers of vehicles, and to make suggestions as to how changes might be made to prevent accidents. These reports shall be made on a printed form, and it shall be that duty of the chairman of the different committees to forward all reports made to them, with their own suggestions, to the chairman of the central committee, whose duty it shall be to notify the members of the central committee to whose department these recommendations or reports refer.

"Term of Office.—These committees shall hold for a period of three months, with the exception of the central committee, which shall be a permanent committee. The members of all committees shall be appointed by the members of the central committee having supervision over the respective departments.

"Meetings.—Regular meetings shall be held by each committee at least once a week, and a report of each meeting forwarded to the chairman of the central committee, and joint meetings of all of the committees shall be held at least once a month for the purpose of discussing ways and means of preventing accidents. The members of the various committees, who are paid by the hour or by the day, shall receive compensation for such time as they shall be required to spend in attending meetings."

It will be noticed that the claim agent is chairman of the central committee. This is essential, for his work is to prevent accidents and he naturally will give more attention to it than would any other person connected with the company.

After appointment the committees are assembled and topics outlining the objects of the work and the duties of the members are discussed. Refreshments are served at the monthly meeting in order to make them more enjoyable.

It is the duty of the members of our committee to make suggestions that will prevent accidents even though the suggestions pertain to matters entirely foreign to our company. For instance, if one of them sees a wire of the telephone company hanging from a pole or the railing upon a bridge broken, he immediately reports it to the chairman of his committee, or if an emergency exists, the report is made directly to the chairman of the central committee, who immediately takes steps to see that the matter is remedied. If it is a matter that calls for double quick action, the report is made by telephone to the chairman of the central committee. We have found that such efforts on our part are greatly appreciated and have made many friends for the company.

Our employees are very free in making suggestions and many of them have been valuable. They are not allowed, however, to make suggestions and reports regarding their fellow employees. Some organizers of safety committees may not agree with me on this point, but I believe that if good men are to be obtained to serve on the committee the idea must be eliminated that one of their duties is to spy upon their fellow workmen.

At the monthly meeting of the general committee, the reports are taken up and discussed, and the disposition of the suggestions is explained to the members. If a suggestion is not accepted by the central committee, it is read and the reason given. In this way we avoid any feeling that a suggestion has been set aside without any consideration. The committee is asked if there are any suggestions which have been turned in and which have not been read and discussed. The men are allowed to discuss their suggestions, and they have an opportunity, if a suggestion has not been passed upon favorably, to make their argument in favor of it. We have found on a number of occasions that after a man has made his argument in favor of the suggestion, the central committee has reconsidered it. Very few foolish suggestions are sent in by the committeemen. One reason for this is that no man wishes to be placed in a ridiculous position as the author of the suggestion when it comes up for discussion.

Companies must expect that they will be called upon to spend a large sum of money if they allow the members of the committee to make suggestions, and, if they do not make the alterations and repairs that are pointed out to them, they will soon lose the benefit of suggestions, for the members will cease to send them in. Some suggestions have caused our company to spend considerable money, but we have prevented accidents that no doubt would have cost far

more. We believe in the theory that safety and comfort to both the public and the employees are first, regardless of cost.

Through the work of the committee the company is enabled to undertake an effective campaign against careless driving on the streets, all kinds of motor and horse vehicles being included. Many letters have been sent to various firms calling attention to dangerous chances taken by their employees, and each letter has brought a ready response and pledge of future precautions. The men take down the exact time and location of every incident showing disregard of prudence on the street and it naturally bothers the driver, chauffeur or rider to get around this specific showing by a general denial, as the committeeman has turned in his number.

Some might imagine that after a period of a few months the interest in the safety committee would commence to decrease. This, however, has not proved to be a fact, as comparative statements show that the third committee turned in many more reports than the first, and that a greater percentage was adopted by the company. We keep an index file of the suggestions sent in by the members and they are kept advised as to the number submitted and the ones put into effect. The safety committee has been instrumental in bringing the men closer to the officials of the company and has caused them to feel that they are part of the organization and have more interest in the company than simply to do a day's work.

During the first year of the safety committee, which closed July 1, 1913, 423 reports were handed in. Of these, fifty were suggestions pertaining to the protection of the public in general and not connected, with our company, forty-six for the improvement of track and way, fifty-six reporting careless drivers, twenty-five referring to the installation of signs which would assist and protect the public, sixty-two for the betterment of street railway service, ninety-six for the improvement of equipment and thirty-two suggesting better and safer conditions for employees.

A few examples will suffice to show the range covered by the committeemen's vigilance. One of them noticed that visitors to one of the city parks who lived within walking distance took the short cut down a steep hillside to the platform where the cars loop for the return trip. It was a dangerous practice, especially when children came scrambling onto the tracks. The erection of a fence there was recommended, and the danger was eliminated.

In trimming arc lights in power stations men climbed along the beams, having nothing more than a rail to keep foothold on. A misstep would have meant a plunge to the concrete floor below, but one of the linemen suggested that running boards be put in such places. They were promptly put there.

An aid that every elderly person who rides on street cars appreciates fully was the result of a suggestion from the shop department. This was simply a brass rail set diagonally at the rear entrance inside. It is right where it ought to be for anybody who needs something to anchor to.

One of our conductors offered an improvement on the pay-as-you-enter cars that was gladly accepted, although it meant much work and no little expense. This is a light placed outside and over the rear entrance of the car so that on dark nights the conductor will not go ahead and leave passengers waiting. Another improvement along this line is a glass panel placed low on the rear door so that the conductor can see approaching children. A hand rail inside the car for ladies to hold onto when the car starts before they are seated is still another safety committee suggestion. They run from these down to the simpler matters, such as a conductor reporting a plank loose on one of the bridges and securing its repair the same day. Ideas on safety stops at crossings and congested points are numerous and practicable.

Most of these things seem of little consequence to the citizen whose safety and convenience are largely consulted in the safety committee scheme. They are of this much consequence, that an apparently insignificant fault remedied in time may prevent the loss of one or more lives and the destruction of property. It is the unnoticed little things that play the mischief in railroading, whether steam or electric, just as it is the seemingly simple improvements previously outlined that add the most to public comfort.

THE ORGANIZATION OF SAFETY COMMITTEES

BY G. N. SMITH, CLAIM AGENT OREGON-WASHINGTON RAILROAD & NAVIGATION COMPANY, PORTLAND, ORE.

For a number of years the Oregon-Washington Railroad & Navigation Company conducted superintendents' meetings convening monthly, at which time questions concerning the safety of its employees and the remedying of apparent faulty appliances and equipment were considered, as well as those dealing with the operation of the road. These meetings were composed of the superintendents with their assistants and men from various positions in the operating department. Yet in spite of the interest of these men and the activity in these meetings, as the lines were extended and business increased accidents likewise multiplied.

One fact, however, had been made to stand out clearly before the minds of the members at these meetings. While "self-preservation is the first law of nature," yet the individual who, in the face of danger, receives an injury and then says, "Oh, I forgot!" has never ceased to exist. His negligence brings dire results not only to himself but to others. Believing, therefore, that increased agitation would bring more vividly before the minds of such men the desolation that their oversight or negligence might bring and would reduce the total effect of the human negligence factor, the Oregon-Washington Railroad & Navigation Company, on July 1, 1912, put into operation along its lines a "bureau of safety."

This bureau is composed of a central committee of safety, created by appointment and consisting of one assistant general manager as chairman, all other assistant general managers, the superintendent of water lines, the general storekeeper, the assistant general attorney, the general claim agent and the chief surgeon. There is also a division committee on each division, consisting of the superintendent and members of his staff, one conductor, engineer, yardman, track employee, brakeman, fireman, agent, signal employee and shop employee and such other employees as may from time to time seem advisable. A district committee of safety is also appointed, consisting of one employee from each of the different branches of the shops along the line.

The members of the central committee and superintendents and their staff are considered permanent members of their respective committees, and the other members of the division and district committees serve for a period of three months. Obviously the purpose in changing the personnel of these committees is to get the benefit of the suggestions of as many employees as is reasonably possible in the course of a year.

The division and district committees of the shops hold their meetings regularly each month. At such times they review all the casualties and personal injuries that occurred during the preceding month, offer and consider suggestions and make recommendations for the prevention of accidents or personal injuries in the future. These matters are fully considered and if they are such as can be carried out without the change of any standards along the right-of-way or in the construction of equipment, they are ordered made at once. If not, then the suggestions are sent to the central committee either for approval or rejection.

When the meetings are called, the employees receive their

expenses and are credited with their time while in attendance. Furthermore, when they are appointed upon these committees, they are presented with a safety button which after their retirement they retain in recognition of their service.

We have pursued this method for the past year and have made a vigorous campaign to bring about greater precaution upon the part of the employees for the sake of their own safety as well as the safety of others. We have kept constantly before them the dire results of their oversight or thoughtlessness, and we find after acting upon hundreds of suggestions and remedying existing conditions, both in operation and in equipment, that we have brought about a closer co-operation and greater friendliness between the company and its employees and a realization upon their part that the movement, through its elimination of accidents, alleviation of pain and suffering and banishment of desolation from the home, was and is for the betterment and safety of all.

THE PRACTICAL VALUE OF AN INDEX BUREAU

BY B. F. BOYNTON, CLAIM AGENT, PORTLAND RAILWAY, LIGHT & POWER COMPANY

Remarkable changes have taken place in the handling of accident work of every name and nature within the past few years. The claim agent, who a few years ago was not of much importance in the operation of a large railway system, has to-day become one of the prime factors. He is not only an adjuster of claims, but also a deviser of ways and means for the prevention of accidents, which means far more than the settlement of them.

The great fight of the claim agent is to protect the company's coffers against faking claimants, unscrupulous doctors and ambulance chasers. The claim department is often placed in a position where it must use every device possible in an honest and intelligent investigation to uncover fraud and endeavor to show, if possible, former injuries, upon which the present claim is often based.

In the handling of this complicated problem an index bureau is one of the most valuable and dependable adjuncts when it is intelligently used. The various bureaus established in the East and West have all been of great aid in meeting their respective local conditions, and I think that a closer union between these and an interchange of information and ideas would prove of great benefit in the work.

Our Pacific Coast bureau was organized June 1, 1912. Since that time it has received 10,425 cards, and from the newspaper clippings it has a record of 6,749 names, making a total of 16,904 records of accident claimants.

The value of the index bureau is not exactly determinable, for without it we may have a very serious case presented to us which might, if placed before a jury with no evidence to combat it, cost us an unlimited amount of money. With our index bureau at hand, however, when a case is presented that seems to contain some semblance of fraud, all we have to do is to ascertain whether the secretary of our index bureau has any record of the person making the claim under the name or alias under which he might be operating, or a record of anyone presenting a similar claim where the injury would perhaps coincide with the one in question. Our bureau might furnish us with information at once showing that the claimant has made similar claims in other places and this evidence would save the day for us and possibly land the repeater in jail. As our report shows, we have actually found, since the organization of our bureau about a year ago, 129 repeaters or parties by the same names.

E. H. Odell had a case in Tacoma where he would have cheerfully paid $2,000 in settlement of a collision claim, but through the index bureau he ascertained that most of the injuries were of long standing, having been gotten in an accident about a year before. By using this knowledge he got rid of the claimant for $500. This saving of $1,500 to Mr. Odell's company will pay its dues and expenses in the association for a number of years to come.

I could cite three cases of my own where I have been able to turn cases down, paying absolutely nothing, where if it had not been for the information in our index bureau, showing the parties to have been repeaters and to have collected from other roads on the same injuries on which they were trying to collect from us, it would have cost us thousands of dollars. I am satisfied that the amount we have saved in the first year has been enough to pay all the expense of the index bureau for the next ten or twenty years.

THE VALUE OF AN INDEX BUREAU IN DEALING WITH FRAUDULENT CLAIMS

BY S. A. BISHOP, CLAIM AGENT PACIFIC ELECTRIC RAILWAY, LOS ANGELES, CAL.

The value of an index bureau in dealing with fraudulent claimants depends, in my opinion, upon the ability of the individual claim agent to make use of it. Claim agents of ability and experience may often effect a substantial saving of money, some of which they may not even be aware of at the time, by making it plain to the suspected claimant that they have the facilities ready at hand to ascertain the true facts in each and every case.

The report of our index bureau, dated June 10, indicates that 9760 cards have been filed during the past eleven months. Besides enabling us to locate 118 repeaters, this bureau system has supplied us with a great number of newspaper clippings, names of attending physicians and lawyers and other facts with general reference to these claimants, any one or all of which items may prove of inestimable value when taken with the known facts concerning a fraudulent claim under consideration.

Let me illustrate how it works in practice. When a claimant calls and you discuss with him, first of all, the liability, next, the extent of injury, and, last of all, the amount of money proportionate to that injury, if you have reason to suspect that such claimant has exaggerated his injury, is protracting disability or is magnifying the real injury in an endeavor to get more than fair compensation, just digress for the moment from further consideration of the details of his particular claim and describe our organization. Tell him of the claim agents' index bureau and how a fraudulent claim was revealed through this organization, always emphasizing, however, your expressed opinion that his own claim is altogether a legitimate one and assuring him that you are positively convinced that he is a reasonable and rightminded person who is going to be satisfied with fair compensation for actual injury. You have then paved the way, as I have upon occasion, to name what seems to you a fair amount in payment of his bill of damages. If anything in his case is tinged with fraud, if he knows of any fact that may detract from the value of his claim, if in his conscience he realizes that he is not nearly as badly injured as he has represented himself to be, he is then warned against undertaking to follow in the footsteps of a fraudulent claimant who has come to grief. I believe that this deterrent effect of such an organization as ours is of far greater value than the actual benefits which accrue from fraud revealed.

In the business world of to-day men are taken to a large extent at their own appraisement. If one holds himself out to be of a certain character and looks the part, he is accepted, for the time at least, to be what he seems to be. The application of this fact is this. In the ordinary jury hearing the evidence of the plaintiff's physicians and the evidence of the defendant's physicians are usually both passed over, and the jurors give preference to the plaintiff's own

evidence concerning the extent of his injury or at least to such portion of it as they credit, when supported by his personal appearance and general demeanor. But our index bureau is important in that it gives us a means of attacking this plaintiff's testimony itself. Having furnished a claim agent with an account of an injury suffered by a claimant on a railroad, it thereby affords the opportunity to submit the query to the claimant, "Did you suffer such an injury on such a date on such a railroad?" This gives the claim agent the "whip hand." If he follows up his advantage, his claimant, taken by surprise, is disconcerted and may not for the moment realize that this is the full extent of the claim agent's knowledge of him, and, having a "skeleton in the closet" to protect against the demoralizing effect of daylight, may sell his claim reasonably if not cheaply.

THE UNREPORTED ACCIDENT OR "BLIND CASE"

BY C. F. YOUNG, PUGET SOUND TRACTION, LIGHT & POWER COMPANY, SEATTLE, WASH.

Unreported accidents result from several causes, chief among which are:

(a) The train crew often fail to observe many slight occurrences like the movements of the car and the conduct of passengers, not from a desire to avoid reporting accidents, but because their attention was diverted to some other part of the car or street at the critical moment.

(b) The crew, seeing the accident, conclude that it is unimportant and unnecessary to report.

(c) The crew are often misled because the injured party laughs about the accident, remarks that it was his own fault, refuses to give his name and says that nothing will be said about it. Often the injured party even requests the conductor not to report the matter.

(d) The crew sometimes deliberately refrain from reporting an accident in an attempt to cover up an occurrence for which they are wholly to blame.

(e) In rare cases the reason why the accident has not been reported is that a bold attempt has been made to "frame up" a case.

(f) Accidents sometimes result from defects in track, overhead or right-of-way about which the employee has no knowledge.

From whatever cause they arise, the first intimation of these unreported accidents generally reaches the claim agent from one of three sources—the claimant direct, an outside physician or an attorney. The last condition is the hardest to combat because it prevents, as a rule, the securing of a signed statement and the opportunity to obtain the many little details necessary to begin investigation, as well as to learn who the claimant is, whence he came and whether he had any prior injury. Such information may be used later to advantage in case of suit, or as an aid in settlement—which, after all, is about the only basis upon which these claims can be settled where a thorough investigation fails to bring to light any evidence that such an accident really occurred.

The difficulty of investigating is obvious to all. The trainmen are either absolutely ignorant of the alleged occurrence or, having failed to do their duty in the first place, are very apt to deny all knowledge of the matter unless sufficient proof of their guilt is produced to break them down. Even then they are prone to distort the facts, leaving the claim agent "on the fence" as to what really occurred.

If it were possible in some manner to impress on each individual trainman the desirability of telling the truth in order that the claim agent might judge whether he was dealing with a real or fake injury, it would be an undisguised blessing. But no one thus far having advanced the proper solution, it is necessary to keep pounding away on the young student from the moment he is placed upon a car. Put him on with old men who not only know how to operate well but can be relied upon to drill into the new man the importance of reports. See that the instructors in the school cover accidents so thoroughly that when qualified to take a car out by himself the new man will feel it just as much a part of his work to report even the slightest accident as to stop or start his car on signals or collect his fares. Teach him how to approach people that he may secure their names as witnesses and to be unyielding to passengers who clamor for the car to be started until he has properly protected the company and himself. Joint meetings between the claim and the operating departments at the different carhouses to discuss the accident situation have good effect. The point should be emphasized that simply to reduce the number of reports while still having the same number of accidents only adds fuel to the fire. The fact should also be impressed upon the trainmen's minds that the reporting of an accident is not charged against a man's record unless the investigation shows him to be at fault. Even then, such treatment should be accorded the men that they will not be afraid to make a full report even when they are at fault.

The constant coming in contact with the trainmen at these meetings results in an acquaintance that creates increased interest in the subject of reporting cases whether the cases occur on the trainman's own car or on another car. Again, by the cultivating of this acquaintance between the trainmen and the members of the claim department a trainman is less apt to be confused or afraid when called into the claim department or interviewed by an investigator. Instead, he is cool and at ease and in better shape to give a statement.

Another important way of instilling into the men the proper attitude toward these unreported cases is the safety committee. This is one of the best means to get men to do their full duty in the matter of reporting everything because each trainman hopes some day to be appointed a member of the committee and all are aware that their records are carefully examined before appointments are made. After a man has served his six months on the committee, he has come into such close contact with the officials and attorneys of the company that his interest and his pride have been awakened and the possibility of his failing to report an accident is remote. There appears to be a better understanding between the claim and transportation officials than in times past, and this I believe to be the greatest factor in reducing the "unreported accident" to the minimum.

As to the claimant who presents a claim based upon the blind accident, it is a problem just what to do. There are genuine claims of these kinds, and it is sometimes difficult to determine which are just and which are fraudulent. After all is said and done, each claim must stand on its merits—the individuality of the claimant and the peculiar circumstances surrounding the case. The claim agent who possesses the faculty of guessing his man, who from experience and intuition can discern the fake from the just claimant, has to a great extent solved the problem. He is in a position to deal fairly with the just claimant, and also to impress upon the fraudulent claimant that his methods are known and that his attempt to extort money is not only futile but may ultimately land him behind prison walls.

THE UNREPORTED ACCIDENT OR "BLIND CASE"

BY J. H. HANDLON, CLAIM AGENT UNITED RAILROADS OF SAN FRANCISCO, CAL.

In almost every instance of an unreported accident the claim agent finds himself in a weak position and without his usual weapons of defense. Usually it is only by locating eye-witnesses to the occurrence and developing evidence of a conflicting nature that he can hope to combat the assertions of an unjust claimant.

There are, however, several well-known practical methods that may be utilized to control and reduce the number of unreported accidents, and it is my purpose to discuss these briefly in this paper.

Platform men are often informed by their superintendents that they must report all accidents and obtain witnesses solely with a view of protecting the interests of the company. More beneficial results can be obtained if employees are convinced that by preparing reports of accidents or incidents occurring on or near their car they are protecting themselves. Supervising officials can materially assist in reducing the number of "blind" cases by showing a disposition not to take drastic action in disciplining employees for minor accidents in which they are negligent. Every employee, however, who knowingly fails to report an accident should be immediately discharged.

In San Francisco we have met with unusual success in decreasing unreported accidents by fostering an intense rivalry among the various divisions, each one striving to outdo the other in having the lowest number of "blind" cases. Notices showing the number of unreported accidents charged against each division are posted monthly.

Employees should be encouraged to report accidents, notwithstanding the fact that they were not in charge of the car involved. This precautionary act often protects the company in instances where the crew concerned knew nothing of the accident.

A local newspaper clipping file of miscellaneous accidents to pedestrians and vehicles should be maintained, for sometimes claims are filed for casualties foreign to the operation of the cars.

Friendly relations should be established with the local hospitals, the primary object of which is to enable the claim agent to keep informed of all railroad cases brought to such institutions.

If a claim agent strives to cultivate the good will of physicians practising in his community, they will be disposed to reciprocate by advising him of any railroad case they are attending. This will enable the claim agent to make a prompt investigation of the facts.

USE OF GIRDER RAIL IN SAN ANTONIO

David Daly, manager, Houston Electric Company, recently made a statement which was published in the papers of that city explaining the position of that company in regard to the T-rail. According to Mr. Daly, in 1903, the Council passed an ordinance compelling the use of the grooved girder rail in Houston, but subsequently on a few occasions has permitted the company to lay T-rail on certain streets. The new administration has directed the company to abide by the terms of the original ordinance. The company feels that its present method of laying 80-lb. T-rail on a concrete foundation is a far better method of construction than that possible with the proposed grooved girder rail, that this is the consensus of opinion of street railway engineers throughout the country and that many cities in the East and Central West are adopting the T-rail as standard. When the new administration came into office the company offered to pay the expenses of an impartial board of engineers to examine into the matter, but the Mayor and city commissioners declined to accept this offer and insisted on the grooved rail construction. In view of this fact Mr. Daly says that the company would agitate the question no further and that in its new construction it would place the grooved rail in all streets not now exempt from the terms of the ordinance.

Number 5 of *Special Libraries,* published by the Special Libraries Association, Boston, Mass., contains an exhaustive list of material written on the subject of efficiency and scientific management. The classification covers all sources of information.

COMMUNICATION

ROLLING STOCK WEIGHTS AND MANGANESE TRACK WORK

WM. WHARTON, JR., & COMPANY, INC.
PHILADELPHIA, PA., July 15, 1913.

To the Editors:

From time to time we hear the statement made by the railroads that the manganese steel which is put into track work at the present time does not give such good results as manganese steel supplied ten or twelve years ago. To refute such statements and to obtain definite information on the subject, an exhaustive investigation has been made, resulting in evidence which proves conclusively that the manganese steel of to-day as made by the company which I represent is superior to that made ten years ago. It is, in fact, tougher and less brittle. This investigation also developed the following important data in regard to the increased severity of service to which the steel of to-day is being subjected:

(1) At the present time roadbeds are more substantial, and this results in a more solid back to the wheel impact.

(2) The wheel impact is greater because the rolling stock and loads are heavier, speeds are higher and the service more frequent.

(3) The weights of all kinds of electric railway passenger rolling stock have increased to such an extent that they now closely approach those of steam passenger equipment. The following tabulation sets forth clearly the increased weight of electric railway passenger equipment:

		Average Weight in Pounds of		Per Cent Increase in Weight			
		Light Cars	Loaded Cars	Light Cars, 1902-1907	Loaded Cars, 1902-1907	Light Cars, 1907-1912	Loaded Cars, 1907-1912
Year	Service						
1902	City	33,284	39,584	....	....	....	....
1902	Interurban	39,650	56.900	....	....	....	....
1907	City	43,400	53,900	23	26.6	....	....
1907	Interurban	51,575	71,575	23.3	20.5	....	....
1912	City	38,346	48,846	....	....	11½*	9.3*
1912	Interurban	68,190	88,740	....	....	24.4	19.3

*Cars for city service in 1912 were lighter than they were in 1907.

Average percentage of increase in weight, from 1902 to 1912 has therefore been as follows:

Light cars, city	11½
Light cars, interurban	47.7
Loaded cars, city	15.3
Loaded cars, interurban	39.8

From the above you will note a great increase in weight of both city and interurban cars between the years 1902 and 1907. The light weight of city cars decreased slightly between the years 1907 and 1912. In this same period interurban cars increased in weight. In preparing the above data representative cars were selected, that is, cars that are conceded by car builders to be typical for the average city east of the Mississippi.

(4) Notwithstanding all of the above aggravated conditions, the flange and wheel tread on electric railroad equipment has been increased but slightly in the width of the tread, so that the same unit of area is subjected to a greatly intensified pressure.

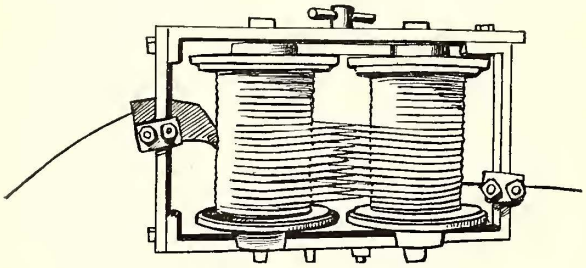
(5) Railways have recognized the necessity of fortifying the roadbed, building stronger bridges and using heavier rails, yet to-day the metal sections specified for manganese special-work castings are in many cases 10 per cent lighter than corresponding pieces of ten years ago.

LLEWELLYN W. JONES, Vice-president.

The Detroit (Mich.) United Railway has applied to the industrial accident board to come under the State compensation law.

SINGLE-PHASE MOTOR MAINTENANCE ON THE DENVER & INTERURBAN RAILWAY

The Denver & Interurban Railway, the electrical branch of the Colorado & Southern Railway, was one of the early single-phase interurban railways built in this country, and although it has not been extended, it has been operating very successfully since it was put in operation in 1908. The cars use 11,000 volts alternating current when on the interurban sections and direct current when operating in Denver over the tracks of the Denver City Tramway Company. The cars also use direct current over a short section of track at Boulder, the other terminal city, so that the usual combination a.c.-d.c. controller and equipment are employed. In one round trip a car operates for about 55 miles on a.c. and 10½ miles on d.c., and each car averages from 350 to 400 miles a day. During week days an hourly service is run, and this requires three cars. On Sundays, during the excursion season, trains of four to six cars are run, made up of an even number of motor cars and trail cars.



Spools for Holding Banding Wire

Altogether this company has eight passenger motor cars. These cars are 55 ft. 6 in. long, 10 ft. wide and seat sixty passengers. They weigh loaded 60 tons. The original equipment was described in the Electric Railway Journal for Sept. 5, 1908, when each car was equipped with four Westinghouse 148-A 125-hp motors with a.c.-d.c. control.

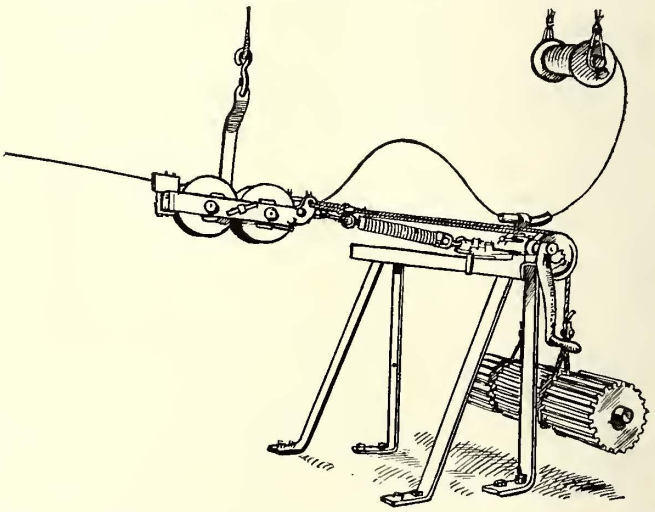
Originally some motor troubles were experienced, but during the last two years the company has lost only two armatures in spite of the fact that the motors are run at a higher speed than that for which they were designed. This immunity from armature troubles is attributed by the company to some extent to a number of changes made in the equipment. One of these is the method of applying banding wire. For this work the company has installed an automatic tension-regulating device so that the tension on the band wire, while it is being wound on the armature, can be kept continuously at any amount, that usually used being 400 lb. With this device, also, the usual tension clamp, which presses on the wire, is not required. This eliminates the danger of breaking the tinning on the steel banding wire, a fault found with the usual device.

The tension-regulating device consists of two grooved spools, each 4 in. in diameter and 6 in. long, held in a frame as shown in the first engraving. The wire is wound back and forth over these two spools, having about twelve turns on each spool. A leather washer fits between the end of the spool and the end plate in the frame in which the spools are mounted, and by means of a screw these end plates can be pressed down on the leather washer. In this way the power required to revolve the spools, and hence the tension on the wire as it leaves the spools, is regulated.

The second engraving shows the method of using the tension device while the banding wire is being put on an armature. The tension device, with the wire wound on it as described, is suspended from above and is held at the back by a set of powerful springs to which are attached cords which pass over pulleys and are connected at their lower ends with weights. In this way any variation in size in the wire which would cause inequality in the tension when the wire passes over the spool is taken up. The band wire is fed to the spools from a reel overhead. The tension is usually kept at about 400 lb. instead of the ordinary tension of about 300 lb. When this wire is wound on the armature tin clips are placed under the wire where it crosses each coil instead of under every fourth coil, as formerly. By these means the safe maximum speed of the motors has been increased from 1680 r.p.m. to from 1900 r.p.m. to 2000 r.p.m. and the capacity of the motor has also been increased.

Slight modifications have also been made in the construction of the armature itself. The covering on the head at the commutator end is left off to secure better ventilation, and at the pinion end of the armature the overhanging flange of the end bell has been cut off. This leaves a sharp edge on the end bell which has been found to be a better protection against the creeping of oil from the bearing into the armature. With these changes the cost of motor maintenance has been reduced to a minimum. Speer grade H brushes are used exclusively and give an average life of 15,500 miles.

In its switch groups and brake cylinders the company is using Emery lubricant and has not had to change a dozen leather washers in five years in the switch groups and has never had to make a change in the brake cylinders. The triple valves operate for a year with this lubricant.



Tension Device for Banding Wire—Denver & Interurban Railway

For boring out armature bearings a clamp is used to hold the bearing. It is set in the lathe by dowel pins and no centering is required.

LIFE OF PARTS

The following are average lives of some of the motor parts obtained on the Denver & Interurban Railway:

Life of Motor Parts in Motor Car Miles

	Motor Car Miles
Motor bearings, commutator end	68,000
Motor bearings, pinion end	60,000
Axle bearings	30,000
Commutator life between turnings	120,000
Carbon brushes	15,500
Pantograph shoes (made of No. 16 galvanized rion)	12,000

In the state of Texas it is general practice to install electrolytic lightning arresters in the open, and it has been found that the heating of the sun's rays during the summer months is sufficient practically to destroy the value of the electrolyte. In order to overcome this the lightning arrester tanks have been painted white, with the result that a sufficient amount of heat is reflected to eliminate this source of trouble.

AN IMPORTANT INNOVATION PLANNED BY THE AMERICAN ELECTRIC RAILWAY ASSOCIATION

The benefits to investors and to operating officials which arise through the prompt publication of condensed statistics bearing upon the financial operation of electric railways have been generally recognized for a long time, and to this end the officers of the American Electric Railway Association are planning to inaugurate the collection and presentation of such information in a series of monthly reports which will show the trend of earnings and expenses of the electric railway industry as a whole.

The plan comprehends the publication in *Acra* of a monthly statement of much the same character as that issued by the Bureau of Railway Economics, an organization supported by the steam railroads of the country, which was formed for the express purpose of giving proper publicity to such statistical information about the steam railroads as would be useful to the public when expressed in concise and authoritative form. In this way such information, which is at present obtainable only through the reports of the Census Bureau issued at five-year intervals and through the financial annuals, would become available at once and would truly represent the conditions existing at the time when the statistics were published.

The work involved in the new plan will be largely complementary to that of the proposed Bureau of Fare Research, an institution which is being planned by the association for the purpose of investigating the general question of fares and which will include consideration of the service accorded to passengers for their fares, its cost to the railway, and the profits remaining for the investors in the property.

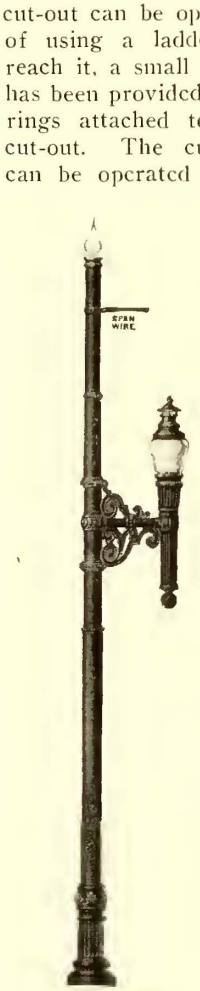
Both proposed plans naturally require the support of the member companies of the association, and with this object a letter of explanation was sent out last month giving an outline of the procedure involved by the collection of the data. In this it was explained that all information which might be furnished by the railway companies would be treated as absolutely confidential and that the statistics developed from the statements of the railways would be published in such a way as to avoid the possibility of identification of the source of information or the disclosure of the results of operations of any individual company.

The part of the work required from the member companies is to consist in providing the association with copies of their detailed monthly statements as soon as these are prepared, promptness in furnishing the information being essential so that publication of the data can follow within a month of the period covered by the statements. A series of questions regarding the feeling of the member companies with regard to their approval of the plan, their willingness to co-operate, and the time at which the first statement might be expected, was also included in the letter. To these questions the replies already received have shown conclusively that sentiment is overwhelmingly in favor of the plan and that it will be strongly supported by practically every electric railway of importance in the country.

The results which may be expected from the new plan cannot fail to be of immense advantage to the industry. Indeed the results which have been attained by the publication of steam railroad statistics through the Bureau of Railway Economics have been found to be so manifestly beneficial, after several years during which the bulletins have been issued, that the permanence of that institution is beyond any question of doubt; and the step is in consequence certain to be one of the most important ever taken by the association as well as one of the most productive of benefit to electric railways in general. The association believes that it is very well equipped for this work and that these figures will be a barometer of the industry and hence of value to railway companies and to the public.

COMBINATION RAILWAY AND LIGHTING POLE

Marked improvement is shown in a new type of bracket which has just been brought out by the Electric Railway Equipment Company, Cincinnati, Ohio, for its combination street railway and lighting pole. Both single and double brackets of this new type have given satisfaction on account of the provision which has been made for mounting the positive cut-out in the body of the bracket. When the cut-out is placed at this point it is not necessary to slot the tubular pole at the ground line, which has a tendency to weaken it at the point of greatest strain. In order that the cut-out can be operated quickly and without the necessity of using a ladder to reach it, a small chain has been provided with rings attached to the cut-out. The cut-out can be operated from the street level by the use of a small rod with a hooked end. The chain is carefully insulated from all current-carrying parts and there is no possibility of leakage at this point.



Single Bracket

Double Bracket

The company has furnished single-light combination poles of this type for Edmonton, Alta., Keokuk, Ia., Negaunee, Mich., Milwaukee, Wis., Dixon, Ill., Columbia, S. C., and Fort Worth, Tex. The company has also furnished the city of Missoula, Mont., with 110 of the same type of pole with a somewhat different bracket. The city of Niagara Falls, N. Y., will be the first city to adopt the double-bracket design, which is shown in the second illustration.

In an article entitled "First Single-Phase Railway in Spain" published in the issue of May 3, an error was made regarding the types of apparatus installed. The A. E. G.-Thomson-Houston Iberica (Spanish A. E. G.-Thomson-Houston Company) advises that it furnished five double-truck cars with A. E. G. equipments and also built the entire low-tension and high-tension overhead construction. The predecessor of the present Spanish Siemens-Schuckert Company furnished four single-truck cars and one double-truck car.

News of Electric Railways

Detroit Company Cannot Accept Marx Plan

In the formal answer of the Detroit (Mich.) United Railway to the proposed Marx ordinance, Attorney Charles D. Joslyn on July 14 asserted that the company could not agree to accept the plan. The attorney read the company's statement at the hearing. The company offers unconditionally to sell its lines to the city at a fair price or to operate on terms similar to those rejected by the voters when the Thompson-Hutchins franchise was voted down.

The company's statement declares that the Marx plan provides a rate of fare which cannot pay the cost of operation and maintenance and that it requires immediate construction of extensions under such terms and conditions that it would be impossible to raise the necessary capital. The company says that figures obtained under the accounting system required by the Interstate Commerce Commission show that 3-cent fare operation of the Detroit lines would have resulted in a net deficit of $49,816 in 1912, and $20,429 during the first five months of this year. The company avers that the paving required by the proposed ordinance would greatly increase the deficit and the universal transfer clause, by reducing the amount collected, would also lessen the net revenue. The company statement refers to the "unquestioned right the company has over the greater part of its system in the city to receive a higher rate of fare than is prescribed by the proposed ordinance," and says that this right and many others must be given up without consideration if the measure is agreed to.

Extensions demanded by the Marx ordinance will cost $1,700,000, the statement says, and the company complains that the resultant operation would be at a loss, and the company might be compelled to cease operation at the will of the Council. Summing up the situation, the statement says that the Marx ordinance calls for impossible concessions and that the company under no circumstances can accept the proposal.

Calling attention to section 19 of the street car ordinance, approved Dec. 4, 1894, the company declares that it is ready and willing to comply with the terms of that ordinance and maintains that the city of Detroit cannot violate the terms of that ordinance. The company makes two distinct proposals to the city, as follows: To operate all city lines under the terms of the ordinance of 1894, known as the 3-cent fare ordinance; or to sell its lines to the city of Detroit for a fair price to be agreed on, or failing agreement, to be determined in any reasonable way.

The company offers, through General Manager Brooks, to open its books to the public to prove that 3-cent fares would result in a deficit.

Following the presentation of the company's statement Mayor Marx said:

"The proposal of the Detroit United Railway to agree to the terms of the old Detroit ordinance over the entire system is absurd and will not be considered for one minute. So far as I am concerned, the company will never receive a franchise in the streets of Detroit, nor will I ever sanction the submission to the people of any proposition involving a franchise. To do so after the people have, in numerous instances, expressed their will in a decisive and overwhelming manner, would be an insult to their intelligence.

"The purpose of inviting the officials of the company to these meetings of the committee was not to listen to a dictation of terms by them. It was rather to give them as interested parties a chance to offer reasonable objections to the proposed ordinance. I am firmly of the belief that the city is the one to dictate terms, and I have no intention of receding from this position. If nothing else, the company's statement should convince the people that municipal ownership is inevitable. No permanent settlement with the company is possible, nor should it be considered.

"I am pleased to have the first official announcement from the company that it is willing to sell. And I intend that we shall with all possible haste take advantage of this offer. Within the next few days I expect to appoint the street railway commission, empowered to open negotiations for the purchase of the system. While I wish to consult with Corporation Counsel Lawson and Messrs. Lucking and Frazer before finally approving this proposal, I believe that the agreement to sell is worthy of consideration. However, I intend that the people of Detroit shall obtain some advantage from the decision in the Fort Street case pending the negotiations for purchase of the system. The company is operating without authority on a part of its system. As a trespasser it cannot dictate terms. It must come to the terms which the city dictates or cease operation of its cars."

A digest of the terms of the ordinance proposed by Mayor Marx was published in the Electric Railway Journal of July 5, 1913, page 38.

Brake Order of New York Commission Upheld

As noted briefly in the Electric Railway Journal of July 12, 1913, page 74, the Appellate Division of the Supreme Court of New York by a unanimous vote upheld on July 10 the proceedings of the Public Service Commission of the First District in its order requiring the Brooklyn Rapid Transit Company to equip its cars with power brakes and geared hand brakes. The company had objected to the order and brought five separate writs of certiorari to the Appellate Division for review. The action of the Public Service Commission in each case is affirmed and the writs dismissed with $50 costs to the company.

The Public Service Commission instituted proceedings and held a public hearing on July 20, 1911, to determine whether the street railroad corporations and receivers should be ordered to equip all double-truck surface cars with power brakes of a type to be approved by the commission, and whether any other changes, improvements in or additions to the equipment then in use should be ordered as necessary to the effective and safe use and operation of brakes on the cars. On Oct. 10, 1911, the commission adopted a resolution to the effect that after June 1, 1912, "all passenger double-truck surface cars in service weighing over 27,000 lb. shall be equipped with power brakes and geared hand brakes." The order also provided that after June 1, 1913, all surface cars weighing over 25,100 lb. should be similarly equipped and all cars weighing less should be equipped with geared hand brakes.

The Brooklyn Rapid Transit Company gave notice on Nov. 1, 1911, that it would not obey the order, and requested a rehearing on the ground that the requirements of the order were not within the scope of the inquiry as stated in the resolution of the commission; that the evidence before the commission did not warrant the order, and that sufficient opportunity was not afforded the company to give evidence with reference to the comparative efficiency of the geared hand brakes and staff and chain brakes. The rehearing was granted and further evidence offered on both sides, and on June 21, 1912, the commission made a final order requiring the installation of the brakes.

Justice McLaughlin, who wrote the opinion, says that the Legislature clearly conferred authority upon the commission to make the order requiring a change with respect to the brake equipment of cars. He said:

"The commission was authorized to institute the inquiry on its own initiative and the hearing and determination are deemed judicial or quasi-judicial proceedings, and are subject to review by the writ of certiorari. It appears that all the cars to which the order applies were equipped with brakes known as plain staff brakes. The first provision of the order relates to passenger double-truck surface cars weighing over 27,000 lb., and required that they be equipped with power brakes and geared hand brakes. The relators owned at the time of the hearing 564 cars which would be subjected to this provision of the order. The relator also owned at this time 637 cars weighing between 25,100 lb. and 27,000 lb. which by the terms of the order are required to be equipped with power and geared hand brakes. The number of cars owned by the relators at the time of the hearing weighing 25,100 lb. or less, and which were required to be equipped with geared hand brakes, was 624. It also appeared at the hearing that the heavier cars on the lines were equipped with both power and hand brakes."

Justice Laughlin says that the company did not seriously complain of the order in so far as it affected future purchases of cars, and that there was no evidence to show that the new cars were not equipped with both kinds of brakes. The company complained that the order compelling it to equip the cars on hand with both brakes was unnecessary, and that inasmuch as the installation of the brakes involved an expenditure of more than $500,000, it was unreasonable. All the other street railways in the city were affected by the same order, and they acquiesced. In conclusion, the opinion says:

"The statement of the evidence is sufficient to show that it does not preponderate against the determination made by the Public Service Commission in ordering the change of equipment. In the interest of the convenience and safety of the public the Legislature vested the commission with broad discretionary powers, and it would require clear and convincing evidence that their determination on the facts was erroneous to warrant the court in annulling the order."

Differences Between Ohio Valley Electric Railway and Its Employees Adjusted

The differences between the Ohio Valley Electric Railway, Huntington, W. Va., and its trainmen, in regard to wages and working conditions, have been adjusted without the company conceding recognition of the union or entering into any written contract with the men. Some of the men organized on June 30 and on the morning of July 6 attempted to present a list of demands to W. W. Magoon, general manager of the company, while he was addressing a meeting of employees of the company who were opposed to a strike. At this meeting Mr. Magoon told the men that the company would never recognize a union, and refused to accept the list of demands as coming from a union. He did, however, permit the demands to be read. They included a wage increase of 1 cent an hour, adjustment of certain working conditions, recognition of the union and the appointment of a temporary board of arbitration to settle all questions that could not be satisfactorily adjusted by the company and the union. Mr. Magoon announced that the matter of a wage increase had already been considered and that a favorable verdict would probably be reached within a few days. He added that he would receive any of the men individually and pledged himself to adjust all just grievances at once. Four days later the union tried to induce Mr. Magoon to recognize "an organization of the men" and permit a committee of this organization to treat with him. This request was denied.

Meanwhile, Mr. Magoon announced an increase in wages of 1 cent an hour to date from July 1. At 5.30 a. m. on July 10, a few hours after this announcement was made, the men in the newly-organized union voted against a strike. They announced that this action was taken on the promise of Mr. Magoon to adjust all grievances except recognition. Seventy-five per cent of the men voted against a strike when the ballot was taken.

In a very forceful statement of the position of the company which he made on July 9 Mr. Magoon said:

"No man now in our employ, so long as he attends to his duties and obeys the rules of the company, need fear that he will be blacklisted or discharged for having joined the organization movement that I have been informally notified is under way. Moreover, every man who works for the Ohio Valley Electric Railway knows, or should know, that no man has ever been discharged from its employ unless he was proved guilty of having broken one or more of its rules. In this connection I want to say that I have heard that it is being reported several men recently discharged were let go because they had been instrumental in passing around a petition for higher wages. That petition was never presented to me, although some of the men who had signed it asked me to erase their names, as they had signed it under a misrepresentation.

"I cannot state too forcibly, however, that that petition had absolutely nothing to do with the discharge of the men in question. The reasons for their discharge are on record in my office and can be seen by any employee who is interested enough to want to allay his suspicions as to why the men were let go. I do not care to make these reasons public, as I do not want to do anything which might tend to mortify the persons most vitally interested. In conclusion I wish to say that so long as I am manager of the Ohio Valley Electric Railway the door of my office will always be open to my men. If they think they have any grievances I want them to come to me with them, and if they are just grievances I will see that they are satisfactorily adjusted. This company, however, will never recognize a union. I do not say this as a threat—merely a plain statement of fact."

Strike in Lexington Settled

The strike of the motormen and conductors of the Kentucky Traction & Terminal Company, Lexington, Ky., who walked out on July 11, following the trouble that the company had with its linemen, as mentioned in the ELECTRIC RAILWAY JOURNAL of July 12, 1913, has been ended by an agreement reached on July 15 between the company and the representatives of the men.

The company agrees not to discriminate against members of the union on account of their affiliation with that body and also to arbitrate such differences as arise between the company and the employees. It is expressly stated that the open-shop principle shall prevail. No union emblems are to be worn by employees of the company. The agreement is to be in force for two years, and the present scale of wages is to be maintained during that time.

The strike of the motormen and conductors was a direct result of the linemen's strike. On July 10 the motormen and conductors organized a union and appointed a committee to communicate a proposal to the company looking toward a settlement of the linemen's difficulties. The company refused to recognize the union and the strike resulted. Service was discontinued on both the city and interurban lines until July 13 when the company attempted to operate cars with strikebreakers brought from New York City. Strike sympathizers attacked the men employed to operate the cars. One car was burned, switches were broken, and the company abandoned its efforts in the evening. Police and deputy sheriffs were powerless to handle the situation and few arrests were made. An extended investigation is now being made by the Grand Jury into the question of whether county officials failed in their duty. Judge Kerr, in a very strong charge, said that "every citizen of this community ought to hide his head in shame" on account of the strike outrages.

Decision Against Tort Creditors in New York

Special Master William L. Turner has rendered a decision in the tangled litigation of the Metropolitan Street Railway, New York, N. Y., which is adverse to the tort creditors who did not accept the offer of the receivers to exchange their judgment claims for bonds of the New York Railways, the successor company. There are claimants to the amount of between $400,000 and $500,000 in this class, while tort claimants to the amount of $1,400,000 accepted the receivers' offer.

The point before the Special Master was the class of claims that could rank against a large fund derived from the unexpended income of the old New York City Railway. Before anything can be done with this money the operating expenses must be paid out of it. The representatives of the tort claimants contended that the judgment claims for injuries received at the hands of the railroad were as much legitimate operating expenses as the claims of those who had supplied goods for the running of the road. Although they had authority for this claim in the form of a decision by the Court of Appeals of New York, it was opposed to a decision by the Circuit Court of Appeals and Special Master Turner was obliged to follow the ruling of the federal court. Consequently, the tort claimants who refused the receivers' offer must take their chance of getting their judgments settled out of whatever is left when the final settlement of the affairs of the New York City Railway is reached. It is expected that they will realize about 40 or 50 per cent of the amounts for which they

obtained judgments. None of these legal complications affect the tort claimants who accepted the bonds of the New York Railways. Their judgment claims now belong to the New York Railways and it alone is now concerned with the value of these claims. These tort claimants have to consider merely the value of the bonds they received.

Seventh Avenue Subway Route, New York

The first step was taken on July 15 by the Public Service Commission of the First District of New York in the preparation of the Seventh Avenue route from Times Square to the Battery, which will be operated by the Interborough Rapid Transit Company. On Aug. 1 a public hearing will be held on the form of contract for this line, which is divided from the Battery to Times Square into six sections. The first runs from the Battery under Greenwich Street almost up to Vesey Street. The second is under Greenwich Street, West Broadway and Varick Street almost to Beach Street; the third runs under Varick Street and Seventh Avenue Extension to Commerce Street; the fourth under Seventh Avenue Extension and Seventh Avenue to about Sixteenth Street; the fifth goes as far north as Thirtieth Street, and the sixth carries the line onto its connection with the present subway, about 60 ft. south of Forty-third Street.

On Aug. 1 there will be also a public hearing on the form of contract for the New Utrecht Avenue division of the Fourth Avenue, Brooklyn, line, which will be operated by the Brooklyn Rapid Transit Company.

The commission has awarded the contract for the construction of the section of the Brooklyn Rapid Transit Broadway subway from Bleecker Street to Union Square to the Dock Contractor Company, Hoboken, for $2,578,078.

Mr. Whitridge's Apologia

Frederick W. Whitridge, president of the Third Avenue Railway, New York, N. Y., in the report of the company for the six months ended June 30, 1913, referred to elsewhere in this issue, has presented a brief apologia to the security holders of the company who have been uneasy over the course he has pursued with respect to the public authorities. His remarks were prompted by the decision of the Appellate Division of the Supreme Court, sustaining the company's contention in respect to the franchise taxes still in dispute. Mr. Whitridge said:

"I have said a good many things about the Board of Tax Commissioners and about the Public Service Commission which are not conventional and which are not pleasant to say, and I am aware that numbers of good people, who prefer the lines of least resistance and object to controversy, think that I have been 'unwise' and 'injudicious'; I am also aware that the public generally does not like its officials to be treated with apparent disrespect. But, in whatever I have said, I believe I have considered primarily only the interests of this property, and perhaps my critics may find comfort and justification for me in the fact that in all my litigations with the authorities, I have been invariably adjudged to be right. My course has, however, been deliberately chosen, because I have ventured to feel that in dealing with these subjects as I have, I was in some sense discharging a public duty.

"The plain truth is, both in the State and Nation, it is seldom that we find a first-class man or a second-class man in any administrative office. It sounds unpatriotic, but the fact is indisputable. These men are honest enough, almost without exception, but their performances are incredible. Take this company for instance: For five years I have been engaged in rehabilitating the Third Avenue Railroad, and in a year or two more the job will be finished. The Public Service Commission has not helped me at all; it has delayed me, put me to very great and wholly useless expense, plagued me in a hundred ways, and among many other foolish suits against me, brought one which might have ruined me individually. It is a shameful thing that such a state should exist. I am bound to add that with the advent of a new chairman and the change of control the spirit of common sense appears to have breathed upon the commission itself, though it has not permeated its organization.

"Take also the case of this Board of Tax Commissioners at Albany: Twelve years ago they assessed the value of the franchises of the railroad. After nine years' litigation their assessments were cut in two, and yet, during the next three years they continued to assess those franchises at the original figures fixed for them, as if the Court of Appeals never had spoken or did not exist. I submit that nothing more monstrous can be imagined.

"The same sort of thing is going on in a different degree all over the country. We see everywhere small people entrusted with enormous powers, and new powers and new functions are continually being loaded upon their poor, weak backs. The most of them have had to do with politics, and 'politics' makes cowards of them, every one. They become, as representatives of the State and of the people, as they suppose, arrogant, vain, determined to construct a great bureaucracy, regardless of expense, and they adopt and try to force upon us every sort of fad and vagary which can be found in printed books. Here, for instance, is the Interstate Commerce Commission, which has foisted upon the country a 'valuation' of all the railroads in the United States. It will cost millions, and it is as senseless a folly as any scheme of George Law's, or of Cagliostro's. When it is finished—if it ever is—the only conceivable effect of it will be to addle more brains and provide more sloppy oratory.

"As I perceive how the tendencies to interfere with corporations by regulation, which degenerates into mere meddlesomeness, has grown, how the pathetic belief of the public in these regulations has increased and how little the regulators themselves have improved, I have felt it was the duty of ever man concerned with corporations to speak of these tendencies with candor. I have endeavored to do so, but never without full provocation.

"I believe that these officials must be taught that corporation managers are as upright, as honorable, as keen for the public welfare, and as interested in social justice—whatever that is—as any other set of people whatsoever, and that they cannot with impunity be talked about or written about as if they were anything else. I have felt also that if plain, accurate language could compel these officials to be amenable to reason, to keep within the law, to mind their own business, and to realize their true relation to the universe, it was a duty to the State and a help to those officials themselves to see that plain, accurate language was used, for I firmly believe that if these tendencies are not checked we shall presently be thinking less of the new nationalism and the new freedom than of the new slavery and the various liveries in which it is sought to be disguised."

Strike Broken in Phoenix

The strike of the conductors and motormen of the Phoenix (Ariz.) Railway, which was begun on June 22, 1913, as noted in the Electric Railway Journal of June 28, 1913, has been broken. The strike was attended with considerable violence. On June 27 Samuel H. Mitchell, general manager of the company, in a statement which he tendered the Arizona Corporation Commission, agreed to arbitrate the question of wages and of seniority, two of the principal contentions of the men on strike, but he did not mention the question of recognition of the union or of the reinstatement of William Ward, who was discharged for threatening to make trouble. This offer was rejected by the strikers, whose places were promptly filled by the company with experienced men brought from Los Angeles, Cal. On July 1 the regular schedule was maintained on the Washington Street line and an intermittent schedule was maintained on three other lines, including the Glendale interurban. A considerable number of passengers were carried without molestation. In a statement which he issued recently in regard to the situation Mr. Mitchell said: "The men have turned down our proposition to arbitrate the questions of wages and seniority. Now we are going to raise wages voluntarily and I hope that when we do so many of our former employees will come back to work. The men from Los Angeles that we have put to work are experienced operatives and will stay until the present trouble is settled. Some may stay permanently."

Cincinnati Arbitrators Submit Terms of Agreement

The board of arbitration consisting of John P. Frey, representing the employees of the Cincinnati (Ohio) Traction Company; Walter A. Draper, secretary of the company, representing the company, and Walter A. Knight, which has been considering the difference between the company and its employees, reported its findings on July 15. The board organized on May 27, 1913. Among the subjects considered were the discharge of certain men prior to the recent strike, the questions of wages, hours of service, etc. The hearings held in regard to the reinstatement of men were not open to the public, although each man as his case was heard was present at the examination. The sessions of the board in regard to the general questions which were arbitrated were open to the public and the press. The board served without pay. The board named forty-two men to be reinstated, rejected the claims of sixteen men for reinstatement and still had under consideration on July 15 the cases of three men. The cases of three other men were withdrawn by the representative of the men without a hearing. The new contract between the company and its employees is to be considered as going into effect July 1, 1913, and is to continue until midnight June 30, 1916. The new scale of wages for motormen and conductors is to date from May 20, 1913, the day the men returned to work. Negotiations for a new agreement are to be taken up at least sixty days prior to the expiration of the agreement of July 1, 1913, and in case of the failure to reach an agreement ten days before the expiration of the contract on July 1, 1916, the matter of a new agreement is to be referred to a board of arbitration consisting of a representative of the men, a representative of the company and a third member to be selected by these two. The findings of the board in regard to the scale of wages follow:

For the year from July 1, 1913, to midnight, June 30, 1914: First six months, 20 cents an hour; second six months, 21 cents an hour; second year, 23 cents an hour; third year, 23 cents an hour; fourth year, 24 cents an hour; fifth year, 24 cents an hour; sixth year, 24 cents an hour; seventh year, 25 cents an hour; eighth year, 25 cents an hour; ninth year, 26 cents an hour; tenth year, 27 cents an hour.

For the year from July 1, 1913, to midnight, June 30, 1915: First six months, 20 cents an hour; second six months, 21 cents an hour; second year, 23 cents an hour; third year, 23 cents an hour; fourth year, 24 cents an hour; fifth year, 24 cents an hour; sixth year, 25 cents an hour; seventh year, 25 cents an hour; eighth year, 26 cents an hour; ninth year, 27 cents an hour.

For the year from July 1, 1915, to midnight, June 30, 1916: First six months, 20 cents an hour; second six months, 21 cents an hour; second year, 23 cents an hour; third year, 23 cents an hour; fourth year, 24 cents an hour; fifth year, 24 cents an hour; sixth year, 25 cents an hour; seventh year, 26 cents an hour; eighth year, 27 cents an hour.

The rate for overtime is to be time and one-third.

Motormen and conductors transferred from the transportation department to operate other than regular passenger cars are to receive the following rates of pay: Sprinklers, 22 cents an hour; work cars, 22 cents an hour; mail cars, 24 cents an hour.

Time and a half is to be paid for all time put in on snow sweepers, including the time after reporting spent in waiting in the carhouses to take out the sweepers.

The regular rate is to be paid to men assigned to operate pay cars, sand cars, salt cars and special cars.

The following provision was made for arbitration in case of any dispute in regard to the meaning of any of the findings of the board under the agreement of July 1, 1913:

"In case of dispute concerning the meaning of any of the findings of this Board of Arbitration the disputed section or language shall be referred to this board for definition and elucidation, and should any one of said arbitrators be unable to act, the side represented by the arbitrator who may be incapacitated shall choose a third arbitrator, or in case the third arbitrator acting in the present arbitration shall be incapacitated, the two remaining arbitrators shall choose a third."

Resumption of Service Ordered on Chicago Suburban Lines

During the period of suspension of operation by the County Traction Company and the Suburban Railroad some of the Chicago suburbs reached by the lines have discussed the purchase of the properties with the idea of paying the wages demanded by the striking trainmen and thus securing resumption of service to the city. The City Council of Evanston, Ill., finally rejected on July 16 the proposition that it take over the line of the County Traction Company in that city as Corporation Counsel McNab said that the city had no legal right to own and operate the street railway system unless authorized by referendum. The sale of the Suburban Railroad, which is in the hands of a receiver, has been ordered by Judge Petit of the Cook County Circuit Court. Notwithstanding the statement of Emil G. Schmidt, receiver, that earnings will not permit the payment of the wages demanded by the striking trainmen, Judge Petit takes the position that the road must be operated and declared that he would order the sale of the property. Several independent petitions seeking to compel restoration of service have been filed.

Action on Through Routing in Chicago Deferred.—Action on the proposed ordinance providing for through routes on the elevated lines in Chicago with transfers and the construction of a terminal subway in the business district was deferred by the City Council on July 14 until the meeting of July 21.

Vallejo Wreck Results in Heavy Damage Suits.—Damage suits against the San Francisco, Napa & Calistoga Railway, Napa, Cal., as a result of the collision and wreck of two electric trains near Vallejo on June 19 last, will, it is estimated, amount to $500,000. In first large suit gross carelessness is alleged in the complaint, which asks for $75,000 damages.

Underground Trolley Ordinance in Chicago.—Mayor Harrison of Chicago sent ordinances to the City Council on July 14 requiring the railway companies to install the underground trolley in the district bounded by Thirty-first Street, Ashland Avenue, North Avenue and Lake Michigan. The ordinances were referred to the committee on local transportation.

Massachusetts Public Service Commission Organized.—The Public Service Commission, appointed under the provisions of chapter 784 of the Acts of the General Court of Massachusetts for the year 1913, and consisting of Frederick J. Macleod, George W. Anderson, George P. Lawrence, Clinton White and George W. Bishop, has organized by the choice of Frederick J. Macleod as chairman.

Power Contract Rumors in Louisville.—T. J. Minary, president of the Louisville (Ky.) Railway, said recently that the matter of the Louisville Gas & Electric Company supplying the railway with power, has not come before him. It is stated that the Byllesby interests, which control the Louisville Gas & Electric Company, have investigated the power requirements of the railway and are prepared to offer a rate which they think will result in the railway purchasing current.

America's First Safety Exposition.—The first international exposition of safety and sanitation ever held in America will take place in New York City, Dec. 11 to 20, 1913, under the auspices of the American Museum of Safety. Safety and every branch of American industrial life will be represented at the exposition. By a special act of Congress, exhibits from Europe and other foreign countries are to be admitted free of duty. All of the twenty-one museums of safety in Europe will contribute to the American exposition.

Severe Windstorm.—W. C. Sparks, vice-president and general manager of the Rockford & Interurban Railway, Rockford, Ill., reports that that company did not suffer any serious damage in the severe windstorm of July 8, although a few trolley wires were torn down when trees were blown on them. The telephone companies suffered very severely and as their wires were blown across the wires of the electric railway, it was necessary to suspend railway operation for a time on account of the possible danger to the public arising from the telephone wires.

Municipal Ownership Advocates Heard in Detroit.—At the regular meeting of the Common Council of Detroit, Mich., on July 7, Henry Kumerford, president of the Detroit Federation of Labor, opposed the street railway ordinance proposed by Mayor Marx. He said that the people favor municipal ownership and that the Council, as the servant of the people, should report adversely on the ordinance. Several other advocates of municipal ownership spoke against the ordinance. Frank E. Hambarger, who is opposed to municipal ownership, supported the ordinance.

Meeting of State Railway Commissioners to Discuss Valuation.—A meeting of the committee representing the National Association of Railway Commissioners was held in Chicago on June 27 to discuss the appraisal of interstate carriers, which is now under way by the Interstate Commerce Commission. The following attended the meeting: Halford Erickson, Wisconsin; O. P. Gothlin, Ohio; Clifford Thorne, Iowa; George A. Henshaw, Oklahoma; Charles F. Staples, Minnesota; H. S. Martin, Kansas; Orville F. Berry, Illinois; C. L. Glasgow, Michigan, and H. T. Clarke, Jr., Nebraska.

Maine Public Utilities Act.—As predicted in the Electric Railway Journal of July 15, 1913, page 42, the new Maine Public Utilities Act was rendered inoperative on July 12 by filing a petition for a referendum, containing more than 10,000 names. Governor Haines will announce the date for a general election to decide on the matter. This election, however, cannot be held before Nov. 12. It is said that friends of the measure will test the right of proponents or opponents of a measure to purchase signatures to referendum petitions, as has been done in this case. Meanwhile, the present railway commission will continue in power.

Elevated Lines Suggested for Detroit.—Speaking before the city plan and improvement commission at Detroit on July 10, E. H. Bennett, a Chicago architect, suggested that an elevated railway be built on Woodward Avenue and that other elevated lines be built later on, with cross-town lines at convenient places. He said that cities in foreign countries have succeeded in eliminating the noise to a large extent. Mr. Bennett had not made an exhaustive study of the transportation problem in Detroit and his suggestions were based upon plans he had made for beautifying the city. He has made a set of maps showing the changes and improvements which he thinks necessary to make the city what the commission desires and the plans for transportation are incidental to the main idea.

Buffalo Wage Arbitration.—Statistics showing the wages paid throughout the country by electric railways to their employees have been presented to the board of arbitration named to settle the question of wages and conditions of service between the International Railway, Buffalo, N. Y., and its employees. Officials of the company started to put its evidence before the board on July 15. For almost three weeks the employees have been introducing their evidence before the board and it is expected it will take the International Railway about as long. Burt L. Jones, vice-president and general manager of the Great Gorge Route, represents the International Railway on the board; Assemblyman Edward D. Jackson appears for the men. Mayor Louis P. Fuhrmann, of Buffalo, is the third member. The sessions of the board of arbitration are secret.

Progress of Kansas City Negotiations.—After the conference on July 2 between the representatives of the city of Kansas City, Mo., and the officers of the Metropolitan Street Railway in regard to the details of the terms of the proposed new franchise to the company Mayor Jost said that the city is contending for a single engineer of its own choosing to manage the property. The company desires two engineers. The Mayor also said that the question of possible conflicting authority between the two Kansas Cities and the public utility commissions in Missouri and Kansas was also causing the negotiators some anxiety. On July 3 the questions of charges to the operating and maintenance accounts were considered. The conferences were then put over for a period of ten days. Following this conference the Mayor said: "I feel that we are making good progress." A statement in regard to the matters considered is given out after each meeting.

Erdman Act Amended.—On July 15, 1913, the Newlands bill, designed to broaden and strengthen the Erdman arbitration act, was rushed through both houses of Congress and signed by President Wilson. Instead of a board of arbitration of only three members, the amendment provides for a board of six members. It also creates a commissioner of mediation and conciliation, who, with two other Government officials to be appointed by the President, will constitute a board of mediation and conciliation. This board will name disinterested arbitrators to act with arbitrators chosen by employers and employees. The amendment relies upon voluntary arbitration. As a result of this action it is believed that the threatened strike of trainmen and conductors on the Eastern railroads will be averted through the submission of their grievances to the board of arbitration which is provided for in the new law.

First Municipal Car From Bay to Ocean.—San Francisco celebrated the completion of the Geary Street Municipal Railway on June 25. The Mayor, Commissioners of Public Works, Board of Supervisors and a few invited guests, among whom were the contractors who built the road, were passengers on the first car up Market Street from the ferries to the ocean. Under an agreement between the city and the United Railroads the cars of the Geary Street Municipal Railway and the cars of the Sutter Street line of the United Railroad operate over the same tracks in Market Street from the Ferry Building to Sansome Street. These tracks are on either side of the main United Railroad tracks, making a four-track system for this portion of Market Street. Transfers are exchanged between cars of the United Railroads and the municipal cars at corners where the municipal line intersects various United Railroad lines.

Governor Dunne on the Illinois Utility Act.—In a statement which he issued at the time he signed the Illinois utility act, abstracted in the Electric Railway Journal of July 12, 1913, page 75, Governor Dunne of Illinois said in part: "The public utilities bill passed by the Legislature in the form in which it comes to me for approval, is in many respects the best measure of its kind that has found its way into the laws of a State, notwithstanding that there have been eliminated from it certain home-rule provisions which I earnestly supported and tried to have placed in the act. It is elastic; it is workable; provides ample authority for a public utilities commission when appointed to deal efficiently with all problems it may undertake. It is, in my judgment, better than the Wisconsin law, which has been regarded as a model, to wit: (1) Giving the commission control of public-owned utilities, and (2) giving private corporations indeterminate franchises."

South Boston Service Improvement.—A new double-track surface car line will shortly be placed in service by the Boston (Mass.) Elevated Railway between the Boston South Station district and L Street, South Boston, forming a cut-off route between the city proper and the residential peninsula terminating at City Point. The route will include the extension of Summer Street and L Street, and will probably save about one-half mile of distance and at least five minutes in running time over the present Dorchester Avenue-Broadway route. Additional service will be given to new steamship docks and the line will be utilized by the company in operating morning and evening extras in and out of the business district, besides providing an attractive shore route for pleasure travel to and from the City Point Park district. It will also relieve traffic conditions on the Broadway lines, which serve a dense population lying within about 2 miles from the downtown section of Boston.

Washington's Heidic Transfer Case Carried to Supreme Court.—The Capital Traction Company and the Washington Railway & Electric Company, Washington, D. C., in separate actions filed in the Supreme Court of the District of Columbia, have taken steps to have that tribunal pass on the constitutionality of the law of Aug. 24, 1912, requiring reciprocal transfer agreements between the companies and the Metropolitan Coach Company. The District Commissioners, the Public Utilities Commission and the Metropolitan Coach Company are named as defendants. While the proceedings are in the form of bills for injunction, they are

in effect an appeal from the order of the Utilities Commission, passed on June 2, requiring the companies to issue and accept transfers to and from the Sixteenth Street herdic line under the penalty of $100 for each violation. The companies, under protest, agreed to obey the order pending a legal determination of the constitutionality of the enactment and have been issuing and receiving transfers from the Metropolitan Coach Company.

Arbitration at Boston.—The issues pending between the Boston (Mass.) Elevated Railway and its car service employees are to be arbitrated by a board of three members, as noted in the ELECTRIC RAILWAY JOURNAL of July 12, 1913, page 80. The company will be represented by James L. Richards, of the executive committee of its board of directors, and the employees' union by James H. Vahey. The third member of the board will be James J. Storrow, president of the Boston Chamber of Commerce and a member of the banking firm of Lee, Higginson & Company. The questions which are to be considered are the wages to be paid by the company, the hours of labor of employees in the road and track departments, the establishment of uniform hours in shops, free transportation for employees, abolition of piece work, and the establishment of a minimum wage for extra men not assigned to work to the extent of seven hours. The board of arbitrators sitting in the Boston Elevated Railway wage issue has held preliminary sessions at Boston and has announced that it will hold public hearings for the presentation of testimony and other data beginning about July 20. It is possible that the sessions of the board will be held at the State House.

Proposal for Municipal Ownership in Seattle.—Scott Calhoun, one of the receivers of the Seattle, Renton & Southern Railway, Seattle, Wash., has proposed to the franchise committee of the City Council of Seattle, Wash., that the city purchase the property of the Seattle, Renton & Southern Railway within the city for $1,200,000, of which amount $350,000 is to be paid in cash or municipal street railway bonds and the remainder in 6 per cent public utility bonds to be issued for the purpose. Mr. Calhoun's offer, made as he explained at the suggestion of Judge A. W. Frater, of the Superior Court, is tentative, intended to end, if possible, the litigation in which the company is involved and take care of the creditors of the company. The proposition carries with it the immediate construction by the city of about 6 miles of extensions in the Rainier Valley through the sale of the remaining $150,000 of the $800,000 of municipal street railway bonds authorized by the voters nearly three years ago. Mr. Calhoun explained that he had no authority to make a price on the line outside the city limits, but expressed a belief that the city could acquire it at a very reasonable figure. He said he would submit to the Council an offer covering the entire property of the Seattle, Renton & Southern Railway as soon as it could be formulated.

New York Franchise Tax Assessments Ordered Reduced.—The Appellate Division of the Supreme Court has handed down a decision reducing the assessment of the State Board of Tax Commissioners on the special franchises of the Third Avenue Railway for 1910 from $7,920,000 to $5,493,695 and the assessment by the same board on the special franchise of the Kingsbridge Railway from $759,000 to $629,301. Justice Gavegan, at Special Term, had found that, although the assessments as made represented the full value of the special franchises as found by the State Board of Tax Commissioners, yet, as a matter of fact, the value of the special franchises of the Third Avenue Railway determined by the net earning rule, so called, was $10,863,806, and of those of the Kingsbridge Railway $1,033,513, and that, therefore, the assessment as made only represented about 73 per cent of the actual value of the special franchises. Counsel for the companies contended at Special Term and before the Appellate Division that they were entitled to have the assessment reduced to 89 per cent of the value as determined by the State Board in order to equalize them with other property assessments, and Justice Laughlin, who wrote the opinion, in which all concur, said that it had been authoritatively settled that the court should reduce special franchise assessments to the same percentage of valuation as has been followed generally with respect to the assessments of other real property on the same roll.

Financial and Corporate

Stock and Money Markets

July 16, 1913.

In the early trading on the New York Stock Exchange to-day the demand for stocks was brisk, contrasting strongly with the listless tone for several days past. Increased strength was shown in the trading after noon and further gains were made in the leading issues. Recessions were noted in the final dealings. Rates in the money market to-day were: Call, 2@2½ per cent; sixty days, 3½@4 per cent; ninety days, 5@5¼ per cent; four months, 5½@5¾ per cent; five months, 5¾@6 per cent; six months, 6@6½ per cent.

Philadelphia Rapid Transit and General Asphalt issues led in the improvement in the Philadelphia market to-day. Trading was on a more normal basis than for some time past.

The Chicago market was strong to-day. Chicago Elevated Railways preferred was an exception, falling six points to seventy.

The Boston market was active to-day. Advances were scored throughout the list with large gains in several issues.

United Railways issues were conspicuous in the trading in Baltimore to-day.

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

	July 9	July 16
American Brake Shoe & Foundry (common)	87½	87¼
American Brake Shoe & Foundry (preferred)	126½	130
American Cities Company (common)	33¼	37⅝
American Cities Company (preferred)	66	66
American Light & Traction Company (common)	365	340
American Light & Traction Company (preferred)	106½	104
American Railways Company	38	38
Aurora, Elgin & Chicago Railroad (common)	40	39½
Aurora, Elgin & Chicago Railroad (preferred)	85	85
Boston Elevated Railway	87½	89½
Boston Suburban Electric Companies (common)	7½	7½
Boston Suburban Electric Companies (preferred)	50	50
Boston & Worcester Electric Companies (common)	*8	*8
Boston & Worcester Electric Companies (preferred)	42	42
Brooklyn Rapid Transit Company	86⅜	87⅞
Capital Traction Company, Washington	114⅞	119¼
Chicago City Railway	165	165
Chicago Elevated Railways (common)	26	*26
Chicago Elevated Railways (preferred)	75	*75
Chicago Railways, ptcptg., ctf. 1	95½	95
Chicago Railways, ptcptg., ctf. 2	23½	25
Chicago Railways, ptcptg., ctf. 3	7	7½
Chicago Railways, ptcptg., ctf. 4	2½	*2½
Cincinnati Street Railway	*110	110
Cleveland Railway	102½	103
Cleveland, Southwestern & Columbus Ry. (common)	6	6
Cleveland, Southwestern & Columbus Ry. (preferred)	29	29
Columbus Railway & Light Company	12	18
Columbus Railway (common)	60	69½
Columbus Railway (preferred)	80	88
Denver & Northwestern Railway	107	107
Detroit United Railway	*70	70
General Electric Company	137	139½
Georgia Railway & Electric Company (common)	115⅜	115⅜
Georgia Railway & Electric Company (preferred)	84	82¼
Interborough Metropolitan Company (common)	14⅞	15⅜
Interborough Metropolitan Company (preferred)	54⅜	56¾
International Traction Company (common)	30	*30
International Traction Company (preferred)	95	*95
Kansas City Railway & Light Company (common)	18	18
Kansas City Railway & Light Company (preferred)	36	36
Lake Shore Electric Railway (common)	9	9
Lake Shore Electric Railway (1st preferred)	90	90
Lake Shore Electric Railway (2d preferred)	25	25
Manhattan Railway	125	125
Massachusetts Electric Companies (common)	13½	14½
Massachusetts Electric Companies (preferred)	68¼	70
Milwaukee Electric Railway & Light Co. (preferred)	90	*90
Norfolk Railway & Light Company	25	25
North American Company	65	67
Northern Ohio Light & Traction Company (common)	75	a75
Northern Ohio Light & Traction Company (preferred)	100	a100
Philadelphia Company, Pittsburgh (common)	39½	39
Philadelphia Company, Pittsburgh (preferred)	39	39
Philadelphia Rapid Transit Company	21¼	21½
Portland Railway, Light & Power Company	58	58
Public Service Corporation	109	107
Third Avenue Railway, New York	30¼	32¾
Toledo Railways & Light Company	2¼	a12
Twin City Rapid Transit Co., Minneapolis (common)	101½	102¼
Union Traction Company of Indiana (common)	4½	4½
Union Traction Company of Indiana (1st preferred)	80	80
Union Traction Company of Indiana (2d preferred)	30	30
United Rys. & Electric Company (Baltimore)	25½	26½
United Rys. Inv. Company (common)	17	18
United Rys. Inv. Company (preferred)	31¾	32
Virginia Railway & Power Company (common)	51	51
Virginia Railway & Power Company (preferred)	a92	89
Washington Ry. & Electric Company (common)	89	89¼
Washington Ry. & Electric Company (preferred)	87	87½
West End Street Railway, Boston (common)	70½	70½
West End Street Railway, Boston (preferred)	85	85
Westinghouse Elec. & Mfg. Company	57	59
Westinghouse Elec. & Mfg. Company (1st preferred)	104	106

*Last sale. a Asked.

Report of Third Avenue Railway

Frederick W. Whitridge, president of the Third Avenue Railway, New York, N. Y., in a statement to the stockholders of the company for the six months ended June 30, 1913, said in part:

"From the statements of income for June and for the past six months it appears that the total increase in gross receipts amounts to $572,756 and that the surplus income for the system, after providing for the interest on the 5 per cent adjustment bonds is $389,000 for the six months ending July 1. I accordingly recommend the payment of 2½ per cent on the adjustment bonds on Oct. 1.

"These figures include receipts and profits of the Belt Line Railway Corporation from March 22, and are in a small degree estimated, but the total will not be substantially affected by any changes.

"The Belt Line property was purchased at a total cost of $2,439,639. The Public Service Commission authorized the issue of 1750 bonds, bearing interest at 5 per cent, and ordered that they be sold at not less than 95. They have not yet been sold. The purchase has been carried on a note of the railway company, which falls due on Oct. 1. I have arranged for an extension of that loan together with an option on the bonds for a further period of six months from Oct. 1, and have agreed to pay on account of the principal of that note the sum of $500,000. I should add that the earnings of this property have exceeded my expectations. The interest upon the bonds authorized by the Public Service Commission has thus far been earned twice over, and so far as I can see the property promises to pay a handsome income on the total cost of the investment.

"I also submit a statement showing the items of capital expenditure for which refunding bonds might under the terms of the mortgage properly be issued. I do not, however, at this time, recommend that any application be made to the Public Service Commission for the issue of such bonds. The item for the New York City Interborough securities has been partly paid, so that the amount now due is only $1,000,000 and $500,000 will be paid on account of the Belt Line note on Aug. 25. We have cash enough on hand to pay for all of the budget expenditures mentioned in my last report and for so much of these capital expenditures as will fall due during the current year, and if an application to issue the bonds were granted, I should not really know what to do with them, as a sale at the present prices is not to be thought of. In addition to these items, however, an application will be made to the Public Service Commission for the issue of a sufficient amount of bonds, first, to purchase the Mid-Crosstown Railway [a cash offer was made for that property on the lines of the decision of the Public Service Commission. The bondholders of the Mid-Crosstown line would not even listen to it. Subsequently another offer for $500,000 of bonds, which the Mid-Crosstown people are willing to accept, has been made, which I have said to the Mid-Crosstown committee I do not believe the commission would permit us to carry out]; second, to arrange for a readjustment of the affairs of the Dry Dock road. This also is of such a character that the holders of the certificates of indebtedness have arranged to undertake to get the assent of the commission for the new mortgage required.

"I have also arranged with the Travelers Insurance Company of Hartford for the issue of a policy of $1,000 on each employee of the company upon terms which I think highly favorable. In the meantime, the cost of free medical advice, the sick pay and the club-room expenses are met by the association, and if a man does not wish to take out the $1,000 policy the association would still be able to pay the sum of $250 in case of death.

"I am happy also to report that during the last week a sweeping decision in favor of the company has been rendered by the Appellate Division of the Supreme Court, sustaining its contention in respect to franchise taxes still in dispute, and unless the authorities choose to prolong the litigation by appeal to the Court of Appeals, this will probably enable me to pay the residuum of all the franchise taxes due, for which the cash is on hand in our interest and tax account."

American Water Works & Guarantee Company, Pittsburgh, Pa.—Edmund S. Converse, Albert H. Wiggin and Charles F. Brooker at the request of holders of both common and preferred stock of the American Water Works & Guarantee Company have agreed to act as a stockholders' protective committee and request stockholders to deposit their stock certificates with the Bankers' Trust Company, New York, N. Y.

Belt Line Railway Corporation, New York, N. Y.—The Belt Line Railway Corporation has applied to the Public Service Commission for the First District for permission to issue $40,700 in stock to the Third Avenue Railway.

Dry Dock, East Broadway & Battery Railway, New York, N. Y.—Judge Lacombe, in the United States District Court, has denied the application of Frederick W. Whitridge, receiver of the Dry Dock, East Broadway & Battery Railway, for authority to issue $149,000 of receivers' certificates. Judge Lacombe said the matter was one that would have to be passed upon by a special master. Counsel for Receiver Whitridge and for creditors stated that the property of the railway company would have to be sold under foreclosure.

Hudson & Manhattan Railroad, New York, N. Y.—Kuhn, Loeb & Company, and Harvey Fisk & Sons, New York, N. Y., and Robert Fleming & Company, London, Eng., have announced that as more than 98½ per cent of the 4½ per cent mortgage bondholders and more than 95½ per cent of the preferred and common stock owners of the Hudson & Manhattan Railroad have assented to the plan of readjusting the company's finances, the plan is declared effective. Shareholders have been called upon to pay their assessment of $8.50 per share by Aug. 1.

Idaho-Oregon Light & Power Company, Boise, Idaho.—The State Bank, Chicago, Ill., trustee for the holders of the $3,319,000 of bonds of the Idaho-Oregon Light & Power Company, the interest on which payable on April 1, 1913, is in default, has filed suit in the federal court at Boise to foreclose the mortgage under which the bonds are secured. The company is controlled by the same interests that control the Idaho Railway, Light & Power Company.

International Railway, Buffalo, N. Y.—In the department "Financial and Corporate" in the Electric Railway Journal of July 5, 1913, reference was made to reported plans for a merger to include the International Railway, the Buffalo & Lake Erie Traction Company and the Buffalo, Lockport & Rochester Railway to provide a through trunk line between Rochester, Buffalo and Erie. E. G. Connette, president of the International Railway, is quoted as follows in this connection: "One of the provisions of the new mortgage for $60,000,000 recently executed contains a clause which prevents the International Railway from consolidating or taking over other properties. The Buffalo & Lake Erie Traction Company is now in process of reorganization. It may be months before the matter is taken into the courts, if ever, and the present mortgage foreclosed. The reorganization committee may bid in the line, and then the consolidation with the Buffalo, Lockport & Rochester Railway could be effected. The only way in which the International Railway is interested or connected with the deal is in the fact that these two lines in order to operate through cars from Erie, Pa., to Rochester would have to run over the tracks of the International Railway from Buffalo to Lockport. Officials of both of these lines have taken this matter up with the directors of the International Railway in an informal way, but the matter as it stands now is only in a premature state, as it were."

Lake Shore, Bowling Green & Napoleon Railway, Bowling Green, Ohio.—C. G. Taylor, receiver of the Sandusky, Norwalk & Mansfield Electric Railway, has been appointed receiver of the Lake Erie, Bowling Green & Napoleon Railway by the United States District Court, Northern District of Ohio. Mr. Taylor succeeds B. C. Harding and A. E. Royce, who have been receivers of the property since May, 1911. Mr. Taylor will continue to act as receiver and general manager of the Sandusky, Norwalk & Mansfield Electric Railway, and will divide his time between the two properties, having one office at Bowling Green and one at Norwalk, Ohio.

Manchester Traction, Light & Power Company, Manchester, N. H.—Plans have been perfected for consolidating the Manchester Traction, Light & Power Company and the Nashua Light, Heat & Power Company. The Manchester Traction, Light & Power Company has an authorized capital stock of $2,800,000, all of which is outstanding, and $2,000,000 of bonds, of which $1,750,000 is outstanding. The Nashua Light, Heat & Power Company has $600,000 of stock and no bonded debt. The plan for the consolidation, which has already been approved by the directors of the Nashua light, Heat & Power Company, involves the exchange of one share of stock in that company for one share of full paid stock of the Manchester Traction, Light & Power Company and $40 in cash, provided that holders of at least 90 per cent of the stock of the Nashua Light, Heat & Power Company agree to the exchange.

Medfield & Medway Street Railway, Westfield, Mass.—Eugene H. Mather, receiver of Medfield & Medway Street Railway and the Dedham & Franklin Street Railway, was authorized by Judge Hammond in Supreme Court on July 12 to sell the franchises and property of both companies at public auction at such time and place as he selects, unless $126,448 was paid to the Old Colony Trust Company on July 17 on behalf of bondholders of the Medfield & Medway Company for bonds and accrued interest, and $114,322 was paid to the Beacon Trust Company to be paid to bondholders of Dedham & Franklin Street Railway.

Oakland, Antioch & Eastern Railway, Oakland, Cal.—The Oakland, Antioch & Eastern Railway has been granted authority by the Railroad Commission of California to issue $1,000,000 of bonds to provide funds to complete its railway between Bay Point and Sacramento.

Public Service Company of Northern Illinois, Chicago, Ill.—The Public Service Company of Northern Illinois has sold to a syndicate composed of Lee, Higginson & Company, N. W. Halsey & Company and Russell, Brewster & Company, $2,500,000 of three-year 6 per cent collateral gold notes, secured by $3,125,000 of its first and refunding mortgage 5 per cent bonds. The notes are convertible into the first and refunding bonds at the buyer's option. They will be offered to investors on an income basis of 7 per cent.

San Francisco-Oakland Terminal Railways, Oakland, Cal.—A plan which has been proposed for the re-organization of the San Francisco-Oakland Terminal Railways provides for the organization of a new company with the same amount of capital stock as the San Francisco-Oakland Terminal Company, namely, $14,600,000 of common stock, $9,200,000 of A preferred stock and $1,000,000 of B preferred stock. Holders of A preferred will receive an equal amount of new 6 per cent preferred cumulative after Aug. 15, 1918. Holders of B preferred will receive an equal amount of 6 per cent non-cumulative second preferred, and holders of common will receive an equal amount of the new common. The new company will issue $4,000,000 of five-year 6 per cent notes, which, less the necessary expenses in carrying out the plan of reorganization, will be used to refund the $2,500,000 past due notes and to pay floating indebtedness of the San Francisco-Oakland Terminal Railways. Of the notes $2,000,000 additional will be reserved to be sold, if necessary, in the future to provide funds for betterments and extensions of the properties. To pay the $1,100,000 notes of the Oakland Terminal Company, which will mature on Aug. 20, 1913, it is planned to issue new 5½-year notes to be secured by the same collateral as the present notes. At a meeting of about fifty minority stockholders of the San Francisco-Oakland Terminal Railways and Oakland Traction Company, a committee of three was appointed to prepare a list of the minority stockholders and call a second meeting for the purpose of levying an assessment to defray expenses of having an expert accounting made of the books of the companies.

South Shore Traction Company, Patchogue, N. Y.—The assets of the South Shore Traction Company were sold on July 11 before Judge Chatfield in the United States Circuit Court in Brooklyn for $16,725. They consisted chiefly of franchises, tracks and ties. They do not constitute a continuous road, as the building was done in sections, as franchises were obtained. Arthur Nosworthy, a Brooklyn contractor, who built some of the lines for the company, bid in two sections of the road for $12,550. Robert D. Ireland bought in for the Babylon Railroad another section against which it holds a lien of $8,500. He paid $1,150 for it. Two other sections went for $1,000 and $2,000 respectively, and a franchise on which no construction had been done was sold for $25.

Southwestern Traction & Power Company, New Orleans, La.—The Southwestern Traction & Power Company has filed notice of an increase in its authorized capital stock from $1,500,000 to $3,000,000.

Toledo, Ann Arbor & Jackson Railroad, Toledo, Ohio.—The Public Service Commission of Ohio has authorized the Toleda, Ann Arbor & Jackson Railroad to issue to Lewis E. Ingalls, president of the company, as a full and final consideration for the assets and property of the company, its capital stock of the par value of $300,000 and to issue its 5 per cent bonds of the total principal sum of $850,000, the proceeds to be used to reimburse Mr. Ingalls for moneys advanced by him and used in the construction and improvement of the railway.

Dividends Declared

Chippewa Valley Railway, Light & Power Company, Eau Claire, Wis., quarterly, 1¾ per cent, preferred; quarterly, 2 per cent, common.

Columbus (Ohio) Railway, quarterly, 1¼ per cent, preferred.

East St. Louis & Suburban Company, East St. Louis, Ill., quarterly 1¼ per cent, preferred.

Jacksonville (Fla.) Traction Company, quarterly, 1¾ per cent, common.

New Hampshire Electric Railways, Haverhill, Mass., 2 per cent.

United Traction Company, Pittsburgh, Pa., 2½ per cent, preferred.

ELECTRIC RAILWAY MONTHLY EARNINGS

BANGOR RAILWAY & ELECTRIC COMPANY, BANGOR, ME.

Period			Gross Earnings	Operating Expenses	Net Earnings	Fixed Charges	Net Surplus
1m.,	May,	'13	$60,280	*$28,087	$32,198	$17,136	$15,062
1 "	"	'12	53,790	*24,018	29,772	16,498	13,274
12 "	"	'13	736,500	*334,240	402,260	204,228	198,032
12 "	"	'12	643,612	*295,175	348,437	174,380	174,057

CHATTANOOGA RAILWAY & LIGHT COMPANY, CHATTANOOGA, TENN.

1m.,	May	'13	$123,315	*$67,425	$55,863	$24,607	$31,256
1 "	"	'12	88,888	*50,359	38,529	21,684	16,845
12 "	"	'13	1,148,956	*688,675	460,281	280,045	180,236
12 "	"	'12	984,516	*582,641	401,875	249,781	152,094

CUMBERLAND COUNTY POWER & LIGHT COMPANY, PORTLAND, MAINE.

1m.,	May,	'13	$175,866	*$100,501	$75,365	$57,293	$18,072
1 "	"	'12	166,126	*96,538	69,588	52,839	16,749
12 "	"	'13	2,199,570	*1,223,574	975,996	670,215	305,781
12 "	"	'12	2,067,554	*1,267,166	800,388	595,880	204,508
12 "	"	'12	2,067,554	*1,267,166	800,388	595,880	204,508

EAST ST. LOUIS & SUBURBAN COMPANY, EAST ST. LOUIS, ILL.

1m.,	May,	'13	$221,798	*$123,572	$98,226	$50,552	$47,674
1 "	"	'12	196,824	*114,262	82,562	48,286	34,276
12 "	"	'13	2,553,497	*1,411,160	1,142,337	585,174	557,163
12 "	"	'12	2,327,593	*1,294,196	1,033,397	560,736	472,661

GRAND RAPIDS (MICH.) RAILWAY

1m.,	May,	'13	$107,572	*$63,029	$44,543	$14,963	$29,580
1 "	"	'12	102,627	*53,187	49,440	14,497	34,943
12 "	"	'13	1,259,545	*727,589	531,956	176,690	355,266
12 "	"	'12	1,202,320	*671,154	531,166	177,172	353,994

LEWISTON, AUGUSTA & WATERVILLE STREET RAILWAY, LEWISTON, MAINE.

1m.,	May,	'13	$54,957	*$33,408	$21,549	$15,493	$5,056
1 "	"	'12	49,814	*31,143	18,671	14,447	2,224
12 "	"	'13	646,616	*395,298	251,318	174,554	76,764
12 "	"	'12	613,772	*382,855	230,917	172,277	58,640
12 "	"	'12	613,772	*382,855	230,917	172,277	58,640

NASHVILLE RAILWAY & LIGHT COMPANY, NASHVILLE, TENN.

1m.,	May,	'13	$184,147	*$112,124	$72,023	$37,877	$34,146
1 "	"	'12	173,675	*100,228	73,447	36,200	37,247
12 "	"	'13	2,130,057	*1,225,735	904,322	446,203	458,119
12 "	"	'12	2,006,607	*1,155,895	850,712	413,162	437,550

PORTLAND RAILWAY, LIGHT & POWER COMPANY, PORTLAND, ORE.

1m.,	May,	'13	$549,852	*$269,709	$280,143	162,174	$117,969
1 "	"	'12	543,813	*264,906	278,907	148,392	130,515
12 "	"	'13	6,697,304	*3,296,138	3,401,166	1,829,287	1,571,879
12 "	"	'12	6,446,311	*3,197,588	3,248,723	1,618,748	1,629,975

PORTLAND (MAINE) RAILROAD

1m.,	May,	'13	$79,691	*$61,299	$18,392	$10,729	$7,663
1 "	"	'12	77,570	*55,467	22,103	10,206	11,897
12 "	"	'13	1,003,694	*708,435	295,359	123,995	171,264
12 "	"	'12	968,160	*724,957	243,203	115,936	127,267

*Includes taxes.

Traffic and Transportation

I. C. C. Decision in Indianapolis-Louisville Freight Case

The Interstate Commerce Commission rendered a decision July 9, 1913, ordering the Indianapolis, Columbus & Southern Traction Company, the Louisville & Southern Indiana Traction Company, the Louisville & Northern Railway & Lighting Company, the Indianapolis & Louisville Traction Company and the Interstate Public Service Company to establish on or before Sept. 15, 1913, and to maintain for a period of not less than two years thereafter, through rates and joint rates for the transportation of merchandise of less-than-carload lots from Louisville to Indianapolis and intermediate points. The decision was rendered in the case of the Louisville Board of Trade and others against the Indianapolis, Columbus & Southern Traction Company and the connecting lines previously mentioned. In deciding the case the commission said in part:

"From Louisville, on the south bank of the Ohio River, to Indianapolis, the Pennsylvania Railroad is paralleled for its entire distance of about 117 miles by a through route composed of the interurban electric railways operated by the Louisville & Southern Indiana Traction Company between Louisville and Jeffersonville, a distance of 3 miles; the Louisville & Northern Railway & Lighting Company, the lines of which extend a distance of 11 miles to Sellersburg; the Indianapolis & Louisville Traction Company, the lines of which extend some 41 miles to Seymour, where they connect with the Indianapolis, Columbus & Southern Traction Company, which operates from Seymour to Indianapolis, a distance of 61 miles.

"The last named line is now operated by the Interstate Public Service Company under a 999-year lease. The latter company, together with the two lines first mentioned, which form the route northward out of Louisville to Sellersburg, are owned or controlled by the Middle West Utilities Company, commonly referred to as the Insull lines. The Indianapolis & Louisville Traction Company, from Sellersburg to Seymour, however, is an independent company. In other words, the two lines running north out of Louisville, and the line extending south from Indianapolis are under a common control, while the connecting link between them is independently owned.

"A network of interurban lines extends from Indianapolis in every direction, with an aggregate of nearly 2000 miles of track, reaching practically all the eastern, northern and western portions of Indiana and to southern Michigan and western Ohio. Some twenty of these companies, with lines in Indiana and Ohio, are named as co-defendants herein. All of them, including the lines from Louisville to Indianapolis, while primarily carriers of passengers, participate in handling less-than-carload freight business; and many, if not all, of them have tariffs on file with this commission naming their local freight or express rates, and in some cases showing also joint rates with connecting electric lines.

"The Louisville commercial interests in this proceeding asked for an order establishing through routes for less than carload traffic to points north of Seymour, and more particularly to Indianapolis and to places on interurban lines reached through Indianapolis. Over such routes, when established, they asked for joint rates that would not exceed the present rates of the steam railways on the same articles to the same points. The local rates of the various defendants now in effect are, in a general way, the same as the rates of the competing steam roads between the same points.

"The testimony of manufacturers and jobbers at Louisville indicates that in the sale of their merchandise at local points in Indiana and western Ohio where they meet the competition of Indianapolis, the need of a package freight service over the through routes here demanded is keenly felt, and that Indianapolis with such an expeditious and efficient service at its command and with routes in effect over which the rates are the same as or less than the freight rates of the steam railroads, has a distinct advantage in soliciting the business of retailers and consumers in that territory. The testimony also fairly established the contention of the complainants that a schedule of express rates for this service as distinguished from freight rates would practically prevent the use of the proposed through routes. It is shown also that in proportion as the rates over these routes may exceed the rates of the steam roads the value of the routes will be reduced.

"The lines beyond Indianapolis took no active part in the hearing and they seemed not to be opposed to the establishment of through routes. Physical through routes already exist and are in actual use. The four defendants operating the route between Louisville and Indianapolis conduct a through passenger service of six limited trains, running daily in each direction, for which through tickets are sold. The northern link in the routes conduct a local package freight service between Indianapolis and Seymour. The three lines forming the other three links in the route not only conduct a local freight service over their respective rails, but join in through rates from Louisville as far north as Seymour. For a short time in 1908 there was joint through class rates in effect from Louisville, or from New Albany, just across the river, to Indianapolis. They were cancelled at the instance of the Indiapolis, Columbus & Southern Traction Company and it is this company that objects to their restoration. The traffic now moves between Seymour and Indianapolis, a one-line haul, and goes on through rates between Seymour and Louisville, a three-line haul. Certain perishable freight, such as berries, moves all the way from Jeffersonville to Indianapolis on joint through rates. All that is necessary to satisfy this complaint with general traffic is the withdrawal by the line of its insistance upon a transfer of traffic at Seymour. As a matter of fact the lines north of Indianapolis apparently stand ready to participate in through movements from Louisville."

All the electric railways centering in Indianapolis were defendants in the case. Speaking of the properties south of Indianapolis the commission said:

"In the history of these properties there is one fact of significance, although we have attached little importance to it in reaching the conclusions here announced. When the promoters planned the electric railway previously referred to as the independent link in the physical route between Indianapolis and Louisville, the Indianapolis, Columbus & Southern Traction Company, formerly known as the Irwin line, had its southern terminus at Columbus, Ind. The promoters of the independent line proposed to start at that point and build south to Sellersburg, but the owners of the Irwin line objected to this and an understanding was reached by which the Irwin line was to extend its rails south from Columbus to Seymour and the independent line was to commence at that point and build south to Sellersburg. This agreement is embraced in written contracts offered in evidence, which upon their face contemplated the subsequent establishment not only of the through passenger service between Louisville and Indianapolis but of a joint through freight service. The passenger service has long been in effect, but the establishment of the freight service has been blocked by the objections of the Irwin line."

The order of the commission follows:

"It is ordered that the defendants, Indianapolis, Columbus & Southern Traction Company, Louisville & Southern Indiana Traction Company, Louisville & Northern Railway & Lighting Company, Indianapolis & Louisville Railway and Interstate Public Service Company, be, and they are hereby notified and required to establish, on or before Sept. 15, 1913, and for a period of not less than two years thereafter to maintain, through routes for the transportation of merchandise or less-than-carload freight from Louisville, Ky., to Indianapolis, Ind., and to other points on their lines intermediate to Indianapolis.

"It is further ordered that the said last-named defendants, be, and they are hereby notified and required to establish, on or before Sept. 15, 1913, upon notice to the Interstate Commerce Commission and the general public by not less than five days' filing and posting in the manner prescribed in section 6 of the act to regulate commerce, and for a period of two years after said Sept. 15, 1913, to maintain, reasonable joint rates for the transportation of merchandise or less-than-carload freight over such through

routes, which said rates in cents per 100 lb. shall not exceed these amounts between Louisville and the following cities:

Class	1	2	3	4
Columbus, Ind.	18	16	14.5	11
Edinburg, Ind.	20.5	19.5	18	12
Franklin, Ind.	23	21	18	13
Greenwood, Ind.	25	23	20	13.5
Indianapolis, Ind.	26	23	20.5	13.5

"The commission having found that any rates in excess of these rates will be unreasonable."

Report on Sanitation in Chicago

A report from G. B. Young, commissioner of health of Chicago, Ill., on the subject of sanitation in street railway cars, has been presented to the City Council of Chicago by the local transportation committee.

One man was detailed by the commissioner of health in March, 1912, to inquire into the methods used by the companies in cleaning their cars and maintaining them in a sanitary condition and to study the matter of suggested improvements. The report continues in part:

"In general it may be said that the cars as a rule are well cleaned at stated intervals. Little, if any, provision is made for additional cleaning in exceptionally bad weather, and practically no provision whatsoever for any cleaning while the car is in operation. It frequently happens that cars leave the carhouse after being thoroughly cleaned and are very dirty before the end of the first run. In many of these cases it would not be at all difficult to do a certain amount of cleaning at the end of the run. At any rate, the widely distributed expectorated matter and the mud could be got rid of very easily in a few minutes. In other cases, cleaning the cars while in operation presents difficulties which in all probability are almost insuperable.

"With respect to the enforcement of that portion of the ordinance prescribing an average temperature not lower than 50 deg. inspections made during the winter of 1912-13 showed it was the exception to find a car with a missing or broken thermometer, whereas hitherto this had been quite common. Some prosecutions were brought on violations discovered, and these resulted in convictions and assessment of fines.

"During the fall of 1912 and early months of 1913 quite extensive observations demonstrated that in cars equipped with ventilating fans the operation of the fan should be independent of the control of the conductor. Current meters on the cars equipped with fans have shown that the cost of continuous operation is negligible when compared with the advantage resulting therefrom.

"Investigation of the near-side cars showed that it was impossible to operate them as they were originally designed without an intolerable amount of dust. This finding was duly reported to the company concerned and to the city authorities.

"During the winter a considerable number of observations were also made in regard to the amount of carbon dioxide present in the air in street cars and a number of suits are now pending for violation of the ordinance. It is understood, however, that these cases will be carried up on appeal.

"There are several matters in connection with the transportation ordinance in which the health department has an interest and upon which it would like to be heard before any final revision of the present ordinance."

The Council has ordered the report to be published and filed.

Commutation Fares of New Haven Railroad Not Unreasonable

According to a report of the Interstate Commerce Commission handed down June 19, 1913, the commutation fares of the New York, New Haven & Hartford Railroad from points in the State of Connecticut into New York City are not unreasonable, except as to certain stations specifically named in the report. The report says in part:

"The record presents two questions for determination: 1. Are the increased commutation fares of the New Haven Railroad from points in Connecticut into New York City just and reasonable? 2. Is the New Haven Railroad, by its refusal to sell fifty-trip family tickets between Connecticut points and New York City, unjustly discriminating against the Connecticut commuters?

"While we have not made a minute examination of the fares within the State of New York, as fixed by the state commission, apparently the fares, fixed by the company itself, from points in Connecticut within the 25-35-mile zone from New York City are out of line with those fares. They are out of line, also, with the fares from points in Connecticut beyond that zone. They are also unreasonable when tested by the facts of record and by the schedule of fares into New York City that we have fixed on the Pennsylvania and on other carriers in New Jersey. The averaged fare at this time from points in that zone on the New Haven is $10.30. This, we think, is excessive, and we so find. Using Riverside, 30.26 miles from New York City, as a typical point in the zone, we find that a fare for the future in excess of $9.25 for a sixty-trip monthly ticket from that point to New York City will be excessive and unreasonable. The defendant will also be expected to scale its fares for the future in this zone in a proper relation to the fare of $9.25, here found as a reasonable maximum fare from Riverside.

"A careful examination of all the other fares in the New Haven commutation schedule fails to reveal any that is fairly open to criticism, when tested either by the fares of the Pennsylvania for similar distances or by the fares of any other of the New Jersey carriers, or when tested by any other matters shown of record. When the fares from points within that zone shall have been reduced to the basis here suggested the New Haven schedule as a whole will be slightly lower than the Pennsylvania schedule, the differential ranging from 25 cents at the nearer points to $1.15 at the more distant points."

In reference to the fifty-trip family tickets the commission says:

"In the exercise of a broad policy and from a broad point of view the respondent, in our judgment, ought to sell a fifty-trip family ticket from points in the State of Connecticut so long as they are sold from points in the State of New York either voluntarily or under the order of the state commission. Such tickets are in use on all other railroads furnishing commutation service between New York City and practically all points located within the so-called New York City commutation territory reached by their respective lines. They are in use almost universally where a commutation service is maintained. We regard it as unreasonable and discriminatory under the circumstances not to accord their use to Connecticut commuters."

Pennsylvania Commission on Responsibility for Shipments

The Northwestern Pennsylvania Railways, Meadville, Pa., has been notified by the Railroad Commission of Pennsylvania that it is not justified in requiring the payment of an insurance fee in order to make the company responsible for the safe transportation of packages consigned to its care. The matter was brought to the attention of the commission by E. J. Swanson, Edinboro, who advised that this company has a published rate on shipments from Erie to Edinboro, but if the rate is not prepaid an extra charge of 10 cents is assessed. It is called a billing or insurance charge. The position of the commission is that the company has no right to require the insurance of packages intrusted to it for delivery at agency points, but that it is its duty to deliver these packages according to the contract, and the responsibility for the loss of a consignment cannot be avoided by any insurance requirement. The letter of the secretary of the commission to the company in this connection follows:

"I have been directed to advise you that it does not appear to the commission that you are justified in requiring the payment of an insurance fee in order to make yourself responsible for the safe transportation of packages committed to your care. You cannot avoid the responsibility in that way, and by accepting packages for delivery you become responsible for any negligence or lack of care, whether delivery is insured or not, and it is your duty to deliver all such packages accepted by you for transportation.

"The case of your company and that of the government

respecting the parcel post system are entirely different, as the government is not responsible for anything unless it makes itself voluntarily liable, but that is not the case with transportation corporations.

"The commission, therefore, concludes that you have no right to require the insurance of packages intrusted to you for delivery at agency points, but that your duty is to deliver these packages according to the contract, and you cannot escape the responsibility for the loss thereof occasioned by your own negligence by any insurance requirement."

New Twin City Placards

A. W. Warnock, general passenger agent of the Twin City Rapid Transit Company, of Minneapolis, Minn., has had placards reading as follows posted in all stations, club rooms and places where the 2000 employees of the company congregate:

"Those engaged in railroading cannot fill responsible positions acceptably if they fail to practice the principles of courtesy.

"That courtesy is essential to those who desire advancement must be accepted as a fact. Without it, men with other talents and qualifications seemingly sufficient have failed. With it, those lacking in many other ways have been successful.

"Questions must be answered carefully and correctly, and with a cheerfulness that does not repel or discourage the questioner. They may seem irrational, or even silly, but always should be answered pleasantly and kindly.

"Every employee has many opportunities to increase the value of his services with a little personal effort that costs him nothing and wins smiles of approval that are more desirable than frowns.

"For his own personal good, and the strengthening of his character, every railroad employee should give the 'soft answer that turneth away wrath,' and cultivate the art of smoothing things out—truly more satisfactory than to end 'the run' or day with some unnecessary altercation with a patron rankling in his mind, of filling a part of his hours 'off duty' with the worry of such incidents.

"Every victory over discourtesy is well worth the effort, and makes a man bigger and stronger and a more desirable employee. It brings him nearer promotion and raises him in the esteem of his family and friends. It pays to be good humored! Let us suggest that you try it."

Safety Crusade Card Now in Use in Chicago

As a feature of its safety crusade the claim department of the Chicago (Ill.) City Railway is making an effort to keep attractive safety hint cards before the public at all times. The latest card to be displayed in the cars is printed in red and black, the two Maltese crosses appearing on all cards are red, and the words "Safety Hints" and the initial letters of each line of the six hints for safety are also in red. These initial letters spell the word "safety" and the lines are as follows:

"Safety requires watchfulness.
"Always look both ways before crossing track.
"Face forward when alighting.
"Enter and leave car only when it stops.
"The arm should not be put out of the window.
"Your co-operation is necessary."

These cards are 18 in. by 22 in. in size and are placed in the glass panel between the entrance and exit doors in the bulkheads at each end of the car. The cards are printed on both sides so that they can be reversed when required.

Front Exits Impractical in Minneapolis.—The City Council of Minneapolis, Minn., has decided that it is not practical to use the front exits for street cars until all streets are paved and a proposed ordinance in regard to the use of the front exits has been tabled.

Fifty-Ride Commutation Tickets Withdrawn.—The Puget Sound Traction, Light & Power Company, Tacoma, Wash., has filed with the Public Service Commission of Washington, a supplemental tariff canceling the fifty-ride commutation tickets between Tacoma and American Lake which sold for $5.

Advertising the New Albany Chautauqua.—The Louisville & Northern Railway & Lighting Company and the Louisville & Southern Indiana Traction Company, operated jointly by the Middle West Utilities Company, Chicago, are now exploiting the Chautauqua held at Glenwood Park, owned by the company, and located near New Albany, Ind. The cars all carry signs advertising the event, and placards are posted in the stations and elsewhere. The Chautauqua is operated under lease.

Los Angeles Railway Ordered to Reduce Fare.—A decision has been rendered by the Railroad Commission of California upon complaint of the city of Inglewood against the Los Angeles (Cal.) Railway and the Los Angeles Railway Corporation. A reduction has been ordered in the fare between Los Angeles and Inglewood from 15 cents to 10 cents, with transfer privileges. The price of the thirty-ride commutation ticket has been ordered reduced to $1.50, with transfer privileges.

Completing Work on Pittsburgh Cut.—After four months' work on the second half of the cut through the so-called "Hump" in Pittsburgh cars of the Pittsburgh (Pa.) Railways are to be re-routed soon to run over the affected streets. The first half of the cut was completed last fall and the cars have been using these streets since. When the second year's work began, the cars were taken off the streets to be cut and routed over the others, which made traffic heavy in Fifth Avenue and other prominent thoroughfares. The principal street affected by the second year's work was Sixth Avenue.

Increase in Wages in Dubuque.—The Union Electric Company, Dubuque, Ia., advanced the wages of its trainmen on July 1 to the following scale: First six months, 17 cents an hour; six months to one year, 20 cents an hour; second year, 22 cents an hour; third year, 24 cents an hour; fourth year and after, 25 cents an hour. The scale formerly in effect follows: First six months, 16 cents an hour; six months to one year, 19 cents an hour; second year, 21 cents an hour; third year and after, 23 cents an hour. All over time is paid for by the company at 5 cents an hour additional.

Special Twin City Pamphlet.—The Twin City Rapid Transit Company, Minneapolis and St. Paul, Minn., is distributing a pamphlet in regard to Minnesota's new prison at Stillwater, 20 miles from St. Paul, in order to increase traffic on the interurban line to Stillwater. Twenty thousand copies of the pamphlet have been published and placed in all hotels, railway stations and department stores in the Twin cities. All the railroads which operate into St. Paul and Minneapolis have also promised to distribute the pamphlets on their trains. The state authorities are aiding the company in advertising the prison, which is one of the most complete in the country.

Conference in Regard to Transfers in Cincinnati.—Walter A. Draper, secretary of the Cincinnati (Ohio) Traction Company, addressed the committee on street railways of the City Council of Cincinnati on July 11 in regard to the proposed ordinance to require universal transfers. He suggested that the committee prepare a list of the places where transfers are desired and said the company would consider them one at a time, but he opposed the universal transfer idea. The committee thought it would be impossible to make up such a list without canvassing the passengers on each car for some time in order to find out where transfers are desired. Arrangements were made for a conference with W. Kesley Schoepf, president of the company.

Written Examination for New Albany Employees.—The Louisville & Northern Railway & Lighting Company and the Louisville & Southern Indiana Traction Company, associated companies with offices in New Albany, Ind., held their regular semi-annual examination of employees in the operating division of the service at New Albany on July 9. The examination was based on the "Book of Rules" issued by the companies, covering not only the mechanical details of the operation of cars, but dealing largely with the features of the "safety first" campaign undertaken by these companies. One hundred and four of the trainmen took the examination, which was written, and forty questions

were answered by each man. The papers are to be graded and the results announced. The examination was held under the direction of James Harmon, claim agent of the company.

Co-Operation Requested in Los Angeles.—W. E. Dunn, vice-president of the Los Angeles (Cal.) Railway Corporation, has addressed the following communication to the patrons of the company: "The duty and business of this company is to furnish Los Angeles with the best service possible under the congested conditions now existing on the streets, and to relieve this congestion wherever possible. Also continuously to extend our lines to keep pace with the growth of the city. To make these betterments and extensions millions of new money will be required constantly. Upon our relations with the city and the underlying conditions in our franchises will depend our ability to raise the necessary funds. We ask that you who are interested with us in the growth of the city and the betterment of our service do your part to aid in working out the problems that arise every time new lines are to be built and the franchises for their construction are required. Co-operation—that is the answer."

Resumption of Service Ordered.—Operation of interurban cars between Williamsville and Batavia, N. Y., was resumed on July 16 by the Buffalo & Williamsville Railway as the result of an order of the Public Service Commission of the Second District of New York. Service between these two points was suspended some time ago as officials of the company declared that they were losing from $4,000 to $10,000 each year in the operation of this line. Residents of Batavia appealed to the Public Service Commission and Devoe P. Hodson, one of the commissioners, held a hearing in the court house in Batavia recently. Godfrey S. Morgan, secretary of the Buffalo & Williamsville Railway, appeared for the company. He said that while the rights of the public are to be recognized, the interests of the stockholders of a losing public utility should be safeguarded. Mr. Hodson said the officials of the company secured the franchise for nothing and that the contract stands as an obligation of the company.

Serious Accident on Pacific Electric Railway.—In an accident on the evening of July 13 on the Pacific Electric Railway at Vineyard station ten persons were killed and more than 100 were injured. Three trains loaded with excursionists from the beach at Venice, 16 miles from Los Angeles, had stopped at a curve where a switch is turned. The last train began moving forward, while the two foremost trains remained at a standstill, and the motor car of the last train drove into the rear of the center train. It is said that some youths pulled the whistle of the center train and that this was interpreted by the motorman of the last train to indicate that his leader was under way. The curve in the tracks at Vineyard Station is held responsible for the failure of the motorman of the last train to see the stationary cars in time to bring his train to a stop before colliding with the standing train. No formal statements in regard to the responsibility for the accident had been issued by the officials of the company up to July 15.

Prosecution in Ohio for "Knocking Down."—The Northern Ohio Traction & Light Company, Akron, Ohio, has successfully prosecuted the first case against a conductor for "knocking down" that has been brought for a long time in Ohio. John W. Bernhart, a conductor, was arrested on the technical charge of larceny, which was subsequently changed to embezzlement. The evidence against him was so conclusive that on the advice of his attorney Bernhart pleaded guilty. Judge O. E. Lytle, in passing sentence, said: "I should like to impress it upon every employee everywhere that stealing from a corporation is no less a crime than stealing from an individual. The offense is of far too frequent occurrence and I should like to see the prosecuting attorney of the county take vigorous measures to break it up." County Prosecutor H. F. Castle said he would do this. Bernhart was fined $100 and costs and was sentenced to ten days in jail. Subsequently the $100 fine was suspended during good behavior, Bernhart being ordered to report weekly to the court officers concerning his conduct. This is the first action by the company in a campaign of prosecution for offenses of this kind.

Personal Mention

Mr. O. H. Bernd has been elected secretary of the Des Moines (Ia.) City Railway.

Mr. W. C. Sparks, who has been treasurer and general manager of the Rockford & Interurban Railway and the Rockford City Traction Company, Rockford, Ill., has been elected in addition third vice-president of the company.

Mr. T. C. Morris has been appointed acting purchasing agent of the United Railroads, San Francisco, Cal., to succeed Mr. Thomas Finigan, whose election to Pierson, Roeding & Company was announced recently in the ELECTRIC RAILWAY JOURNAL.

Mr. F. D. Gabriel has been appointed claim agent of the Chicago, South Bend & Northern Indiana Railway, South Bend, Ind., to succeed Mr. F. O. Jellison. Mr. Gabriel has also been elected claim agent of the South Michigan Railway to succeed Mr. Jellison.

Mr. W. A. Haller has been elected president of the Springfield (Mo.) Traction Company to succeed Mr. C. C. Chappelle, who has been elected vice-president Mr. Haller was formerly vice-president of the company and Mr. Chappelle was formerly president.

Mr. George F. Storms has been appointed auditor of the Fort Smith Light & Traction Company, Fort Smith, Ark., to succeed Mr. N. I. Garrison, who was reeently appointed auditor of the Western States Gas & Electric Company with headquarters at Stockton, Cal.

Mr. A. C. Ham has been appointed general manager of the Marquette Gas & Electric Company, Ishpeming, Mich., to succeed Mr. W. J. McCorkindale, who resigned from the company some time ago to become connected with the C. H. Geist Company, Philadelphia.

Prof. Henry H. Norris has resigned his position as head of the electrical engineering department at Cornell University and will devote a part of his time to editorial work on this paper. He will have the title of associate editor and at present will make his headquarters at Ithaca, N. Y.

Mr. J. J. Murphy has been appointed general auditor and purchasing agent of the Chicago, South Bend & Northern Indiana Railway, South Bend, Ind., to succeed Mr. J. G. McKee. Mr. Murphy has also been elected general auditor and purchasing agent of the South Michigan Railway to succeed Mr. McKee.

Mr. T. W. Riley has been appointed superintendent of the Norwich & Westerly Traction Company, Norwich, Conn., to succeed Mr. S. J. Kehoe, whose resignation from the company to become superintendent of the Norwich Gas & Electric Company was announced in the ELECTRIC RAILWAY JOURNAL for May 31, 1913.

Mr. Robert I. Todd, president and general manager of the Terre Haute, Indianapolis & Eastern Traction Company, Terre Haute, Ind., has been elected president of the Indiana & Northwestern Traction Company, Ind., which is leased to the Terre Haute, Indianapolis & Eastern Traction Company.

Mr. Foster Hannaford has been appointed assistant superintendent and operating engineer of the Galesburg Railway & Light Company, Galesburg, Ill., to succeed Mr. E. M. Wharff, whose resignation to become connected with the Automatic Devices Company was noted in the ELECTRIC RAILWAY JOURNAL for May 10.

Mr. J. A. MacDonald has been appointed superintendent of transportation of the Michigan United Traction Company with offices at Battle Creek, Mich., to succeed Mr. E. M. Raver, who as noted in the ELECTRIC RAILWAY JOURNAL of June 14, 1913, has become superintendent of transportation of the Lincoln (Neb.) Traction Company.

Mr. Charles S. Mellen, president of the New York, New Haven & Hartford Railroad and affiliated companies, which include the Connecticut Company, operating the electric railways in Connecticut controlled by the New Haven Railroad, presented his resignation at a meeting of the board of directors on July 17 to take effect at their pleasure, but in any event not later than Oct. 1.

Mr. Arthur E. Sherman has been elected treasurer of the Shore Line Electric Railway, Norwich, Conn., to succeed

Mr. E. C. Winchester, New London, who has resigned to become secretary and treasurer of the Griswold Company. Mr. Sherman was formerly with Porteous & Mitchell, Westerly, R. I., later with the Thames Loan & Trust Company, and was auditor of the Norwich & Westerly Traction Company.

Mr. A. L. Drummond has been retained by the Philadelphia (Pa.) Rapid Transit Company to make a special study of traffic conditions in Philadelphia in connection with the plans of the company for re-routing its cars and improving its service. In addition Mr. Drummond will study the possibilities of establishing an electric railway freight system to extend to the agricultural districts of Eastern Pennsylvania.

Mr. Charles J. Pleming has succeeded the late Leon Fender as treasurer of the Knoxville Railway & Light Company, Knoxville, Tenn. Mr. Pleming's first position with the company was that of a stenographer to Mr. Charles H. Harvey, president of the company. Later he was made private secretary to Mr. Harvey. On the death of E. R. Roberts, Mr. Pleming was made park manager and continued as private secretary to Mr. Harvey. During the illness of Mr. Fender he acted as treasurer of the company for several months. Mr. Pleming will continue as park manager.

Mr. C. F. Blondell, formerly assistant to the master mechanic of the Trenton & Mercer County Traction Corporation, Trenton, N. J., has become connected with the Ackley Brake & Supply Company, New York, N. Y. Mr. Blondell began his railway career with the City & Suburban Railway, Baltimore, Md., in 1896. In 1901 he accepted the position of general foreman with the Bristol & Trenton Street Railway, Bristol, Pa., and later was made superintendent of the company. He served subsequently with the Philadelphia & Western Railroad, the Richmond Passenger & Power Company, the Montgomery Traction Company, the Washington Railway & Electric Company and the Coney Island & Brooklyn Railroad.

OBITUARY

L. L. Austin, claim agent of the Chicago (Ill.) Elevated Railways for twenty years, died on July 16 at his home in Chicago.

Henry Martyn Thompson, one of the first three Railroad Commissioners of the State of New York, is dead. He was seventy-one years old. About thirty years ago he was appointed a Railroad Commissioner. Later he took a position with the Brooklyn City Railroad, and remained until that company became part of the Brooklyn Rapid Transit Company.

Joseph L. Friedman, vice-president of the Paducah (Ky.) Traction Company and formerly president of the company, died in Chicago on July 5 of acute Bright's disease, following an attack which lasted but a short time. He was on his way to Michigan. Mr. Friedman was fifty-six years old. In addition to being vice-president of the Paducah Traction Company he was president of the Palmer Hotel Company, head of a large distilling firm and a large owner of real estate. He was a native of Louisville, Ky.

John J. Lane, secretary of the New England Street Railway Club from 1904 to 1912, died at his home in Reading, Mass., on July 12, following an illness of about two years' duration. Mr. Lane was widely known throughout the street railway industry through his connection with the club and editorship of its official organ, the *Street Railway Bulletin*, and was a recognized authority upon New England trolley service and timetables. He was born in Candia, N. H., in 1860, and engaged in printing at an early age, soon entering the country weekly field and publishing papers at various times at Candia, Suncook and Laconia. In 1895 he came to Boston in an editorial capacity for the Associated Press and located in Everett. He became secretary of the New England Street Railway Club about three years after its organization and contributed his best energies to its growth until his resignation last year. Mr. Lane was popular among his acquaintances and prominent in the Masonic and Odd Fellows orders. He served in the Everett Common Council in 1904 and also served on the Everett School Board. He is survived by his widow and two sons.

Construction News

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

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

RECENT INCORPORATIONS

***Butte, Boise & Winnemucca Electric Railroad, Boise, Idaho.**—Application for a charter has been made by this company in Idaho to build an electric railway between Butte, Mont., and Boise, Idaho. Capital stock, $40,000,000. Chester N. Halverton, Boise, Idaho, secretary.

***Park Point Traction Company, Duluth, Minn.**—Incorporated in Maine to build and operate electric railways in Duluth, Minn. Capital stock, $50,000. Officers: R. S. Buzzell, Augusta, president, and L. J. Coleman, Augusta, treasurer.

***Conception Bay Electric Company, Birgus, Newfoundland.**—Incorporated in Newfoundland to build an electric railway connecting Birgus, Cupids, Clark's Beach, Port de Grave, Bay Roberts and Spaniard's Bay. Incorporators: W. H. Jarret, Clarke's Beach, and G. H. Field, Birgus, Newfoundland.

***Dominion Railway & Plaster Company, Sydney, N. S.**—Chartered in Nova Scotia to build an electric railway between Sydney and the company's plaster works on Bras d'Or Lake and Gilbert Lake in Cape Breton, N. S. Negotiations are being carried on with the Cape Breton Electric Company and with the Sydney Council with a view of arranging for the construction of the line. Officers and directors: A. B. McCormack, president; T. Cozzolino, vice-president; J. P. Joy, secretary, and J. C. Mathers and F. de Young, all of Sydney, N. S.

***Olympia & Southern Railroad, Olympia, Wash.**—Incorporated in Washington to build a steam or electric railway from Olympia, on Puget Sound, to the Columbia River in either Cowlitz or Clarke County, and a branch line from Centralia to Willapa Harbor. Capital stock, $100,000. Incorporators: B. H. Rhodes, Centralia, and F. R. Brown, Olympia.

FRANCHISES

Birmingham, Ala.—The Kelley Street Railway has received a ninety-day extension of time on its franchise in Birmingham. George C. Kelley is interested. [E. R. J., June 21, '13.]

Los Angeles, Cal.—The Pacific Electric Railway has received a franchise between Tamarind Avenue and Hartford Avenue in Los Angeles. This company will ask the Board of Trustees of South Pasadena for a franchise to electrify the Southern Pacific tracks in South Pasadena with a double track and a permit to run express trains through South Pasadena.

San Diego, Cal.—The Point Loma Railway will ask the Council for a franchise to double-track its Ocean Beach line in San Diego.

San Francisco, Cal.—The Board of Supervisors has fixed the date of the bond election for the extension of the Geary Street Municipal Railway to the Exposition grounds, for Aug. 26. The company is also considering plans for the improvement of the present terminal facilities at the foot of Market Street in San Francisco.

Chicago, Ill.—The Chicago & Northern Interurban Company has asked the City Council for a franchise in Chicago. The ordinance was referred to the local transportation committee and then by that committee to a sub-committee. The sub-committee has reported favorably on the matter. The committee, however, referred the proposed ordinance to the Board of Supervising Engineers, Chicago Traction, for a report. The sub-committee did not consider the form of the ordinance submitted but recommended that an ordinance be granted.

East St. Louis, Ill.—The Alton & Southern Belt Railroad has asked the Council for a franchise to double-track its lines on certain streets in East St. Louis.

Springfield, Ill.—The Springfield & Central Illinois Traction Company has received a franchise in Springfield.

Taylorville, Ill.—The Springfield, Taylorville & Pana Interurban Railway has received a twenty-five-year franchise

from the Council in Taylorville. This 17-mile railway will connect Springfield, Edinburg, Taylorville, Owaneco and Pana. Henry V. Gehm, 1208 Third National Bank Building, St. Louis, Mo., president. [E. R. J., May 17, '13.]

Waukegan, Ill.—The Chicago & Milwaukee Electric Railway has received a thirty-year franchise from the Council in Waukegan.

Dubuque, Ia.—The Union Electric Company has received a franchise to extend its line on West Locust Street in Dubuque.

Keokuk, Ia.—The Keokuk Electric Railway has received a franchise to extend its lines over certain streets in Keokuk.

Topeka, Kan.—The Topeka Railway has asked the Council for a franchise for a single or double-track railway on Tenth Street from the western boundary of Topeka to Gage Park.

Boston, Mass.—The Bay State Street Railway has asked the Railroad Commission to approve an extension on County Street and to build switches on Bay Street and Bedford Street in Boston.

Pittsfield, Mass.—The Berkshire Street Railway has received permission from the State Board of Railroad Commissioners to double-track its lines on North Street and Wahconah Street in Pittsfield.

Worcester, Mass.—The Worcester Consolidated Street Railway has asked for a franchise to double-track, relocate and extend some of its lines in Worcester.

Minneapolis, Minn.—The Minneapolis Street Railway has accepted the order of the City Council to construct in 1914 eight street railway extensions. The Council will not ask for other street railway extensions before Jan. 1, 1915.

West Orange, N. J.—The Mountain Railway has received a franchise for an extension from the South Orange and Maplewood line through Central Avenue to the Lackawanna Railroad tracks on Central Avenue in West Orange.

Columbus, Ohio.—The Fifth Avenue Railway & Light Company has received a franchise for a crosstown line on Fifth Avenue from Arlington east on Fifth Avenue to East Columbus.

Columbus, Ohio.—The Scioto Valley Traction Company has received a franchise from the Council over Parsons Avenue and Marion Road to the city limits of Columbus.

Portsmouth, Ohio.—The Portsmouth Street Railway & Light Company has asked the Council for a franchise to extend its line over the new Sciota River bridge and along the town path to Union Mills, in Portsmouth.

Oregon City, Ore.—The Clackamas Southern Railway has asked for a franchise over the principal streets in Oregon City.

Portland, Ore.—George F. Heusner, Portland, will ask the City Council for a franchise to build an electric railway from the Kenton district to the business section of the West Side in Portland. [E. R. J., Nov. 2, '13.]

Anderson, S. C.—The North Anderson Development Company has asked the City Council for a franchise for an electric railway from a point on North Main Street where it will meet the present line beyond the city limits of Anderson to the park in the lands now being developed by the company. This is part of a plan to build a 1-mile electric railway between North Anderson and Anderson. [E. R. J., June 14, '13.]

Cleburne, Tex.—The Dallas Eastern Interurban Railway, Dallas, has asked the Council for a franchise in Cleburne. E. P. Turner. [E. R. J., June 14, '13.]

Houston, Tex.—The Houston Electric Company has asked for a franchise to extend its line out Main Street from Capitol to Dallas Avenue in Houston.

Polytechnic, Tex.—The Northern Texas Traction Company, Fort Worth, has received a franchise to extend its lines in Polytechnic.

Everett, Wash.—The Pacific Northwestern Traction Company, Seattle, has asked for a franchise in Everett.

Seattle, Wash.—The City Council recently granted the Puget Sound Traction Light & Power Company permission to abandon a portion of its present Fauntelroy Park line and to construct a shorter connection on Avalon Way.

TRACK AND ROADWAY

Birmingham Railway & Light Company, Birmingham, Ala.—Surveys have been made by this company for an entirely new route to connect Fairfield with Birmingham. The proposed line will involve the construction of about 1½ miles of new track south of Fairfield to a point near Martin's station on the Bessemer line.

British Columbia Electric Railway, Vancouver, B. C.—This company has been petitioned by the Municipal Council to construct an extension on the Fraser Avenue line from River Road, across the North Arm bridge to Number 4 road on Lulu Island, Richmond.

West Vancouver, B. C.—The rate payers of West Vancouver have requested the Council to authorize the by-law granting the Pacific Great Eastern Railway a right-of-way between North Vancouver and Dunderave. The cars are to be operated by either electricity or gasoline.

Fresno (Cal.) Traction Company.—Grading has been begun by this company on its extension to Biola.

Pacific Electric Railway, Los Angeles, Cal.—Contracts have been awarded by this company and material is being placed on the ground for the completion of the trestle between Naples and Bay City which will open up a new line from Long Beach.

Big Four Electric Railway, Tulare, Cal.—This company, which has a portion of its line completed from Tulare to Woodlake, will apply to the State Railroad Commission for a permission to increase its capital stock to $5,000,000 with the intention of extending its lines north in Dinuba, Hanford and Fresno. [E. R. J., July 12, 13.]

Jacksonville (Fla.) Traction Company.—Plans are being made by this company to extend its lines on Banana, Date, Margaret, Myra, Stockton and Lemon Streets in Jacksonville in the near future.

Jacksonville & St. Augustine Public Service Corporation, St. Augustine, Fla.—It is stated that financial backing has been secured and construction will be begun in the near future by this company on its line between Jacksonville, St. Augustine, Diego and Pablo Beach. Work will be begun at South Jacksonville and then at South St. Augustine. Thomas R. Osmond, St. Augustine, general manager. [E. R. J., June 21, '13.]

Chicago, Ottawa & Peoria Railway, Ottawa, Ill.—This company contemplates building an extension to Seatonville.

Laporte, Logansport & Southern Railroad, Laporte, Ind.—Right-of-way is being obtained by this company on its line between Logansport, Laporte and Winamac. It plans to obtain financial backing by fall and begin the construction of its railway in January. Ora Boseman, president. (E. R. J., May 17, '13.)

Pocatello, Idaho.—L. R. Martineau, Salt Lake City, Utah, who secured a franchise to construct an electric railway in Pocatello last February, recently placed engineers in the field to make preliminary surveys, etc. Construction will begin in the immediate future and two lines of the proposed railway will be completed before the end of the year. The initial line will be 2 miles in length. Several additional miles will be built during 1914. [E. R. J., Feb. 1, '13.]

Clinton (Ia.) Street Railway.—Construction has been begun on this company's extensions at Second Avenue and Second Street in Clinton by the North American Railway Construction Company.

Kansas City, Kaw Valley & Western Railway, Bonner Springs, Kan.—This company has awarded the contract for grading the right-of-way between Bonner Springs and Kansas City via the Kaw Valley to Turner & Roberts. Eventually the line will be extended to Lawrence and Topeka. J. D. Waters, Bonner Springs, president. [E. R. J., July 5, '13.]

Independence, Neodesha & Topeka Traction Company, Independence, Kan.—Plans are being made to begin soon the construction of the first section of this company's line between Independence and Neodesha, 17 miles. From Fredonia the line will be extended to Yates Center, Burlington, Lyndon, Scranton and on to Topeka. J. T. Wright, Independence, secretary. [E. R. J., May 24, '13.]

Waterville, Fairfield & Oakland Railway, Waterville, Maine.—This company is building a 1-mile addition from Grove Street, Waterville, south to the gravel pit leased from J. E. Poulin.

Winnipeg (Man.) Electric Railway.—The municipality of Fort Garry is negotiating with this company to extend its Park line through Fort Garry.

Worcester (Mass.) Consolidated Street Railway.—The directors of this company have approved the contract made with the Milford & Uxbridge Street Railway for a joint use of parallel tracks in Uxbridge. The railroad commissioners have approved of the arrangement. The directors also approved the work already begun on Boynton and Franklin Streets in Worcester.

Grand Rapids, Holland & Chicago Railway, Holland, Mich.—It is reported that this company is building a 10-mile extension from Holland to Saugatuck, via Castle Park.

St. Paul Southern Electric Railway, St. Paul, Minn.—Grading has been completed and the laying of the rails will soon be begun by this company on its line between St. Paul and Hastings. It is planned to have this line in operation by Sept. 1. The line will eventually extend to Cannon Falls, Zumbrota, Pine Island and Rochester.

Laurel Electric Light & Power Company, Laurel, Miss.—Work will be begun by this company at once laying rails on its line between Laurel and Ellisville. The trestle over Tallahouma Creek has been completed.

Moberly, Huntsville & Randolph Springs Railway, Moberly, Mo.—A contract has been awarded by this company for grading from Randolph Springs to Moberly, 12 miles, to the Jennings Construction Company, Joplin, Mo. The company has also awarded a contract for the concrete work on the same section to Edward Freed, Moberly. John J. Mundinger, Huntsville, chief engineer. [E. R. J., July 5, '13.]

***Billings, Mont.**—Surveys have been made and construction will be begun shortly by the Highland Homes Company to build an electric railway from Billings to the Polytechnic Institute.

Omaha & Council Bluffs Railway, Omaha, Neb.—This company has authorized the immediate construction of extensions on West Center Street and on Commercial Avenue, which will be an extension of the Sherman Avenue lines north in Omaha.

Long Island Railroad, New York, N. Y.—The double-tracking of this company's North Shore division has reached Cold Spring Harbor and it is expected to extend the double track to Huntington within the next two months.

Cape Breton Electric Company, Sydney, N. S.—The management of this company has authorized the expenditure of a considerable sum upon improvements of its lines in and around Sydney and Glace Bay, N. S., the work to be done this year and during 1914. Among the more important are the building of an addition to the Sydney carhouse, the construction of a second track on Townsend Street, and the putting in of additional turnouts so as to establish a fifteen-minute service on the Pier line.

Cape Breton Electric Company, Sydney, N. S.—This company plans to extend its line to New Waterford and Florence, but it has not decided just what course the line will follow.

Toronto, Ont.—Preliminary surveys have been completed for the 45-mile electric railway between Toronto and Port Perry. It is expected to begin work in the near future. Adam Beck and F. S. Gaby, chief engineer of the Hydro-electric Power Commission, are interested. [E. R. J., July 5, '13.]

Clackamas Southern Railway, Portland, Ore.—Preliminary arrangements are being made by this company for the construction of its line into Portland. At present grades have been completed and rails laid part of the way on about 8 miles of a projected route up Beaver Creek from Oregon City into southeastern Clackamas County. This line is to pass through the Mollala country as far as Mount Angel, about 30 miles from Oregon City. At present this line will be operated by steam except the section between Portland and Oregon City, which will be operated by electricity. Grant B. Dimick, Oregon City, is interested. (E. R. J., June 14, '13.)

West Penn Railway, Pittsburgh, Pa.—This company has announced that cars would likely be running between Bagalet and Whitney, on the new Latrobe extension of that company's traction lines, some time during July. A mile of track has been laid towards Whitney from the present terminus of the Latrobe Street Railway, at Baggaley. Some bridge work remains to be done.

Regina (Sask.) Municipal Railway.—This company's lines will be extended in Regina at a cost of about $28,000, made up as follows: $12,000 for steel rails; $1,692 for ties; $11,000 for cement; $2,192 for poles and $844 for wires and overhead materials.

Saskatoon (Sask.) Electric Railway.—The ratepayers of Saskatoon recently passed a by-law authorizing the expenditure of $100,000 upon extensions of electric railways in Saskatoon.

***Cumberland Valley Railroad, Nashville, Tenn.**—Plans are being perfected to incorporate this company to build an 80-mile electric to connect Nashville, Gladesville, Liberty, Sparta and McMinnville. Among those interested are: J. H. Cartwright, and W. H. Myers, Gladesville; O. L. Omohundro, C. A. Rice, Horace Ozment, J. J. Jewell and J. M. Bradley.

Southern Traction Company, Dallas, Tex.—Two routes have been surveyed by this company for its line from Waco, through Temple to Austin. One of the surveys is by way of Belton and Georgetown, and the other by way of Bartlett and Taylor.

Texas Traction Company, Dallas, Tex.—Plans are being made by this company to extend its line on South Willow Street to St. Vincent's Sanitarium in Sherman.

SHOPS AND BUILDINGS

Illinois Traction System, Peoria, Ill.—Work will be begun about Oct. 1 by this company on its new depot at Ninth Street and Adams Street in Peoria. The structure will be 158 ft. x 50 ft. and will include a waiting room, ticket office and baggage room.

Tri-City Railway & Light Company, Davenport, Ia.—This company has purchased property in Davenport on which it plans to build a new union interurban station, power plant and city railway waiting room. It is not expected to begin construction before next year.

Interurban Railway & Terminal Company, Cincinnati, Ohio.—This company's carhouse at Blue Ash Avenue and Deer Park, Cincinnati, together with five passenger and two express cars, were destroyed by fire recently. The loss is estimated at $15,000.

Southern Traction Company, Dallas, Tex.—Work is now under way at Fourth Street and Washington Street in Waco upon the conversion of the terminals of this company's into a passenger and freight station for the Waco-Dallas-Corsicana interurban line, which contemplates entering Waco the later part of the summer.

POWER HOUSES AND SUBSTATIONS

Interborough Rapid Transit Company, New York, N. Y.—This company is asking for bids for three 30,000-kw turbo-generators for its Seventy-fourth Street power house in New York.

Northwestern Electric Company, Vancouver, Wash.—It is stated that this company plans to build a new substation at the corner of Albina Avenue and Railroad Street in Lower Albina.

Milwaukee Electric Railway & Light Company, Milwaukee, Wis.—This company has purchased from the Terry Steam Turbine Company the following apparatus for its Racine power plant: Two 60-hp. turbines to drive circulating pumps; two 200 gal. per minute boiler feed pump sets; two 10,000 cu. ft. stoker blower sets; one 20,000 cu. ft. stoker blower set. The company has also purchased from the Terry Company the following machines for its Kenosha plant: One 100 gal. per minute boiler feed pump set; one 1000 gal. per minute hot water pump set.

Manufactures and Supplies

ROLLING STOCK

Wisconsin Electric Railway, Oshkosh, Wis., is in the market for a number of motor cars.

Decatur Railway & Light Company, Decatur, Ill., is preparing specifications for four double-truck cars.

Terre Haute, Indianapolis & Eastern Traction Company, Indianapolis, Ind., is in the market for twenty-five city cars.

Georgia Railway & Power Company, Atlanta, Ga., has remodeled thirteen of its cars to the pay-as-you-enter type.

Gadsden, Bellevue & Lookout Mountain Railway, Gadsden, Ala., is reported as expecting to purchase several new cars.

New York State Railway, Rochester, N. Y., has ordered one long broom snow sweeper from the J. G. Brill Company.

Long Island Railroad, New York, N. Y., is considering the purchase of twenty-five steel motor cars for 1914 delivery.

Saginaw-Bay City Railway, Saginaw, Mich., has placed an order with the G. C. Kuhlman Car Company for two ten-bench open cars.

Charleston Consolidated Railway & Lighting Company, Charleston, S. C., has ordered one single-truck, semi-convertible motor car from the Cincinnati Car Company.

Halifax (N. S.) Electric Tramway, noted in the ELECTRIC RAILWAY JOURNAL of June 14, 1913, as expecting to purchase six closed cars, has ordered these cars from the Nova Scotia Car Works.

Monongahela Valley Traction Company, Fairmont, W. Va., has ordered four additional passenger and baggage cars for interurban service from the Jewett Car Company, equipped with Westinghouse type 306 multiple unit control.

Maryland Electric Railway, Annapolis, Md., noted in the ELECTRIC RAILWAY JOURNAL of July 5, 1913, as expecting to purchase a number of cars, has placed an order with the Wason Manufacturing Company for twelve interurban cars.

Cape Breton Electric Company, Sydney, N. S., noted in the ELECTRIC RAILWAY JOURNAL of July 5, 1913, as expecting to purchase a number of cars, has ordered three 31-ft. 4-in. semi-steel, double-truck cars from the Cincinnati Car Company.

San Diego (Cal.) Electric Railway, noted in the ELECTRIC RAILWAY JOURNAL of June 7, 1913, as expecting to purchase thirty-five pay-as-you-enter, center-entrance cars, has ordered these cars, through the Eccles & Smith Company, from the McGuire-Cummings Manufacturing Company.

Chicago (Ill.) Railways, which it was announced in the ELECTRIC RAILWAY JOURNAL of July 5, 1913, had purchased 100 cars from the Southern Car Company, is reported to have ordered fifty of these cars from the Southern Car Company and the remaining fifty from the American Car Company.

Springfield (Ohio) Railway, noted in the ELECTRIC RAILWAY JOURNAL of May 24, 1913, as having ordered ten closed pay-within, double-truck cars from the Cincinnati Car Company, has specified the following details for these cars:

Seating capacity.....40	Car trimmings.....Dayton
Weight (car body only), 16,250	Curtain fixtures, Nat. L. W. Co.
Bolster centers, length, 20 ft. 0 in.	Curtain material...pantasote
Length of body....28 ft. 0 in.	Destination signs....Hunter
Length over vestibule, 40 ft. 0 in.	Life guards.....H. B.
Width over sills....8 ft. 0 in.	Gongs .....Dedenda
Width over all.....8 ft. 2 in.	Hand brakes.....Peacock
Height, rail to sills, 2 ft. 8¾ in.	Heaters .....Cons.
Sill to trolley base, 8 ft. 6⅞ in.	Headlights ...Crouse-Hinds
Body .....composite	Sanders .....Ohio Brass
	Sash fixtures.....Edwards
	Seats, style.... H. B. & W.
	Seating material, mahogany slat constr.
Interior trim....mahoganny	Step treads.....Universal
Headlining .....agasote	Trolley catchers or re-
Roof, type.....turtle back	tricvers .....Keystone
Underframe .....steel	Trolley basc.....U. S.
Bumpers .....Hedley	Trucks, type.....Baldwin

Lookout Mountain Railway, Chattanooga, Tenn., which recently ordered ten combination passenger and baggage cars from the American Car Company, has specified the following details for these cars:

Seating capacity.....40	Curtain fixtures. Cur. Sup. Co.
Bolster centers, length, 17 ft. 8 in.	Curtain material ..pantasote
Length of body...28 ft. 8 in.	Destination signs..American
Length over vestibule, 41 ft. 9 in.	Gears and pinions.....West.
Width over sills..8 ft. 2½ in.	Gongs .....Brill
Width over all.....8 ft. 8 in.	Hand brakes.....American
Height, rail to sills. 2 ft. 9 in.	Headlights .....G. E.
Sill to trolley base, 9 ft. 7⅜ in.	Journal boxes.....Brill
Body .....wood	Motors, type and number, 4 West. outside hung
Interior trim.....bronze	Paint .....American
Headlining .....agasote	Sanders ...Nicholas Lintern
Roof, type.....monitor deck	Sash fixtures.....Brill
Underframe .....composite	Seats, style..Brill (winner)
Axles .....Brill	Seating material.....rattan
Bumpers .....American	Springs .....Brill
Cables .....West.	Step treads.....Universal
Car trimmings.....Brill	Trolley base.....West.
Couplers .....Ohio Brass	Trucks, type.....Brill
	Varnish .....Murphy
	Wheels .....Griffin

TRADE NOTES

J. G. Brill Company, Philadelphia, Pa., has received an order from the Monongahela Valley Traction Company, Fairmont, W. Va., for two sets of 27-MCB-1 trucks.

Clarence M. Morfit, Engineer, Baltimore, Md., is in the market for approximately 1150 ties, to be delivered f.o.b. Baltimore, Md. Specifications may be had on application.

Ohio Brass Company, Mansfield, Ohio, has received an order to equip a five-car train of the Metropolitan West Side Elevated Railway with Tomlinson automatic air-connecting couplers.

General Electric Company, Schenectady, N. Y., has received an order from the United Railways & Electric Company, Baltimore, Md., for sixty quadruple 40-50-hp. motor equipments.

Gold Car Heating & Lighting Company, New York, N. Y., has received a recent order from the New York Railways to equip 175 of its cars with heaters and also another from the Bay State Street Railway to equip 55 of its cars.

Bemis Car Truck Company, Springfield, Mass., has appointed Theodore S. Adams to travel, mostly in the New England States, in the interests of the company. Mr. Adams was previously connected with the Public Service Railway, Newark, N. J.

F. N. Boyer, formerly assistant district manager of the General Electric Company at Chicago, and before that district manager of the supply department at Chicago, has been appointed district manager of the company at St Louis to succeed George Rosenthall, deceased.

Standard Roller Bearing Company, Philadelphia, Pa., has received recent roller bearing orders from the following railways: Manila Electric Railway & Light Company, Third Avenue Railway, Milledgeville Railway, Pennsylvania Railroad and the Bangor & Aroostook Railway.

Cleveland Armature Works, Cleveland, Ohio, has found it necessary to increase its floor space by the addition of a new building which nearly doubles its capacity. This firm has been exclusively in the repair business for eighteen years and its business in this line reaches to all parts of the United States, Canada and Mexico.

Pyrene Manufacturing Company, New York, N. Y., has received recent fire extinguisher orders from the following: Interborough Rapid Transit Company, New York State Railways, Pittsburgh Railways, Pennsylvania Railroad, Harrisburg Railways, Rockford & Interurban Railway and the Otsego & Herkimer Railroad.

Associated Manufacturers, London, Eng., with headquarters in the Westminster Palace Hotel, has recently been formed. This association has grown out of the Associated Manufacturers of Tramway & Railway Material, it being found that no hard and fast line be drawn since tramways and railways were purchasers of every conceivable manufacture, whereby the limitation of title was undesirable. J. Sutherland Warner, chairman of the Warner International & Overseas Engineering Company, Ltd., is chairman of the council of this new association.

Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., has appointed H. F. Garbutt head of the line-material division, located at East Pittsburgh, to succeed C. H. Davis. Before accepting this position Mr. Garbutt had been in the sales department of the Chicago office in this particular line of work since April, 1909. Previous to that time he was connected with the Indianapolis Brass Company as a salesman, promoting the sale of its line material. Before going with this latter company Mr. Garbutt was with the Terre Haute, Indianapolis & Eastern Traction Company for a period of seven years in the overhead department.

U. S. Metal & Manufacturing Company, New York, N. Y., has recently added to its line of railway specialties the sale of the Lincoln arc welding and cutting machines, products of the Welding Materials Company. These machines will weld cracks and seams in locomotive fire boxes, flues in the sheet, engine frames, mudrings, wheel spokes and other work of similar character incidental to steam railroad material, also broken motor cases, truck frames, broken and worn armature shafts, gear cases, brake levers, worn and disintegrated frogs and crossings; steel, grey iron and malleable castings, and will cut off heads, risers, mis-rims, rails, and wreck steel structures, cut-up scrap boilers, etc.

Electric Service Supplies Company, Philadelphia, Pa., has placed on the market a new type of illuminated "Safety First" sign. It consists of a steel frame joined at the top in the shape of a hood under which is placed a weather-proof socket for an incandescent lamp. The hood is given a coat of aluminum paint on the inside and acts as a reflector as well as a protector to the lamp. Standard enameled steel signs are attached to this frame by means of six machine screws, the standard size of the sign proper being 10 in. x 12 in. It may be fitted with weather-proof condulets or bushings to protect the leading-in wires which enter the end of the hood and to insure the proper operation of the sign after a maximum of rough usage. These signs are very effectively used in power plants and along railways at any point where human life is endangered by exposed electric wires, switches, third rails, etc.

Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., has just introduced a line of direct-reading instruments for general testing and laboratory work, particularly on alternating current. The type PC volt-meters and wattmeters operate on the moving coil principle. The movement is mounted as a unit and can be removed complete after taking off the face-plate, which makes a dust-proof joint with an inner aluminum mounting plate. The meters have a laminated iron shield riveted to the aluminum mounting plate, protecting the movement both from dust and from stray magnetic fields. The weight of the moving element is in all cases low, preserving the pivot jewels from wear, and the torque is relatively high. The meters attain their highest accuracy on alternating current, and are free from temperature, frequency and wave shape errors. On direct current the meter may be subject to slight errors due to residual magnetism of the laminated iron shield, but this can be entirely eliminated by taking the average of reversed readings. A contact switch operated by a button on the front of the instrument is provided on each voltmeter. The voltmeters are entirely self-contained, all necessary resistors to obtain the calibrated scale readings being contained in the case, which is well ventilated. The wattmeters which have double current or double voltage range are provided with a switch operated by a knob on the face-plate, which makes the proper series or series-parallel connection of coils when the knob is turned to the proper position. Only two current and two voltage binding posts are, therefore, necessary. The meters are mounted in hardwood carrying cases having hinged covers that are easily removable, and flexible sole-leather handles. The scale covers an arc of 90 degrees, giving large, open divisions. The company has also placed on the market a gasoline blow torch, which embodies a number of new features. The burner is made particularly heavy so that it will retain its heat and keep the torch burning in cold or windy weather. The drip cup is made especially deep so that it will start the torch under bad weather conditions. These features, however, do not detract from the use of the torch for indoor work. Another feature of the torch is the self-cleaning burner valve. The needle at the end of the valve stem cleans the hole automatically when the valve handle is turned. The valve seat need therefore never be injured by picking at the opening to clean it. The valve seat is a separate replaceable plug. The handle of the valve is of fiber, which does not get hot nor does it need a long valve stem for cooling as does an iron handle. The pump valve works in a cylindrical guide which assures the perfect seating of the valve.

ADVERTISING LITERATURE

Veeder Manufacturing Company, Hartford, Conn., has issued a small catalog illustrating and describing the several different types of Veeder counters, and also the new setback and locked wheel counters which the company is just starting to manufacture.

Goulds Manufacturing Company, Seneca Falls, N. Y., has issued a small booklet entitled "Guaranteed Service," which illustrates and describes its different types of pumps for every kind of service. The booklet also contains several views of installations recently made.

Railway Improvement Company, New York, N. Y., has issued in very attractive form catalog No. 1, which contains a great deal of information in regard to its coasting time record and also contains a large number of reprints of orders received from railways in various parts of the United States and Canada.

Ackley Brake & Supply Company, New York, N. Y., has issued Bulletin D on the Anger improved automatic brake adjuster, for which it is sole United States agent and manufacturer. The bulletin contains several diagrams and photographs of the adjuster, together with a full description of its method of operation and advantages.

Railway Utility Company, Chicago, Ill., has issued catalog No. 100 describing its several types of ventilators and containing a number of illustrations of them installed on different types of cars, together with several sectional view, line drawings, showing the direction of air currents. The catalog also contains several test charts made by different electric railways, showing the number of cubic feet of air discharged per minute as the velocity of the car increases.

W. N. Matthews & Brother, St. Louis, Mo., have issued five new pages for their catalog No. 8. Two of these replace old pages on the Matthews type B fuse switch and their holdfast lamp guard. The others are extra pages on Matthews telepipe and teleheight, which is a new line they have recently added. The company has also issued a folding postal card in regard to its fuse switch, the fuse of which is designed to blow when wires become crossed or short circuited. The Matthews easy lamp changers and the Matthews boltless guy clamps are also described in separate circulars.

W. F. Goltra Tie Company, Cleveland, Ohio, has issued another pamphlet on tie and timber preservation entitled "Some Facts About Treating Railroad Ties," by W. F. Goltra, president of the above company. Parts I, II and III, included in the first pamphlets which were described in the Electric Railway Journal some time ago. Part IV contains a comparison of zinc chloride with creosote for preserving cross ties and Part V a history of wood preservation in Europe and America. Part VI contains a list of treating plants, showing their location, managing companies, year built, capacity, kinds of wood treated, kinds of material treated, preservatives used, processes employed, together with a map showing the forest regions and locations of timber treating plants in North America. These three pamphlets which contain a total of 200 pages may be had for $1.50 per set.