

Electric Railway Journal

Vol. XLI

NEW YORK, SATURDAY, MAY 10, 1913

No 19

PUBLISHED WEEKLY BY

McGraw Publishing Company, Inc.

JAMES H. MCGRAW, President. C. E. WHITTLESEY, Secretary and Treas.
239 West 39th Street, New York.

CHICAGO OFFICE.....1570 Old Colony Building
PHILADELPHIA OFFICE.....Real Estate Trust Building
EUROPEAN OFFICE...Hastings House, Norfolk St., Strand, London, Eng.

TERMS OF SUBSCRIPTION

For 52 weekly issues, and daily convention issues published from time to time in New York City or elsewhere: United States, Cuba and Mexico, \$2.00 per year; Canada, \$4.50 per year; all other countries, \$6.00 per year. Single copies, 10 cents. Foreign subscriptions may be sent to our European office.

Requests for changes of address should be made one week in advance, giving old as well as new address. Date on wrapper indicates the month at the end of which subscription expires.

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Entered as second-class matter at the post office at New York, N. Y.

Of this issue of the ELECTRIC RAILWAY JOURNAL, 8100 copies are printed.

GOOD ENGLISH IN RULES AND ANNOUNCEMENTS

Too much stress cannot be laid upon the desirability of clear expression in the statement of any rule which a railway company issues to its employees or in any announcement which it may make to the public. The rules especially are an instance where the clearness and conciseness of the language used are most important. They are to be obeyed literally, and their wording must almost be memorized by those who are to be governed by them. Yet it is not uncommon to find a rule so loosely expressed that its meaning is obscure, and it is still more common to find the idea embodied in a great many more words than are absolutely necessary. Another fault often found in a code of rules is that the individual rules are expressed in a variety of ways—sometimes in the imperative, as "You must not do so and so"; again in the indirect imperative, as "Motormen are not allowed to do so and so," and so on through the entire range of injunctions. If these forms were intended to convey the idea that various degrees of importance should be attached to the rules thus differently expressed, there would be some reason for the condition. But this is not usually the case. The facts, in most instances, are that the rules have been compiled at different times by different people, and as each had a predilection for some one method of expression he would write certain rules without regard to the others in the code. This, however, is a minor fault compared with ambiguity or redundancy. The best masters of English are those who can express their ideas so simply and clearly that their meaning will easily be understood, and those who are asked to read any written or printed production have the right to demand that the language employed shall be such that the meaning is obvious to those able to understand the subject discussed. In the compilation of rules the direct form of address is the simplest and most easily understood and remembered, and it should be the one followed.

FULL VALUE FROM COMMUTATING- POLE MOTORS

Ever since the introduction of the commutating-pole motor the voltage of d.c. railway systems has been creeping upward until, as in the case of the Hamburg rapid transit system, a potential of 800 volts per motor is looked upon as a matter of course. One may say that this tendency is most advantageous both going and returning, inasmuch as an increase in the line tension from 500 volts to 800 volts saves distribution copper and decreases electrolysis troubles because of the proportional reduction in amperage. The benefits due to higher voltage can be readily obtained by those who are using commutating-pole equipment exclusively, but it is an open question whether many opportunities exist for obtaining the full benefit of newer motors on systems which are operating a large proportion of non-interpole machines. It is conceivable, however, that such a change could be brought about gradually by placing all new motors on specific lines instead of using them at random. Thus they might be applied with the greatest opportunities for economy on suburban extensions which have independent feeder systems and which are not long enough to justify the greater first cost of 1200-volt equipment. The principal expense in adding from 200 to 300 volts to the line potential would be the installation of higher voltage rotary converters, for, as a rule, the line insulation on most railways has an ample margin of safety. In many cases the chief objection from the power station standpoint to double-voltage operation would lie in the necessity for the installation of two sets of busbars and the operation of one or more rotaries or d.c. generators at the higher voltage. This in turn would make it somewhat more difficult to distribute energy and rolling stock in accordance with varying requirements. Nevertheless, a study of conditions on some individual systems may show that if the peak load occurs simultaneously on all routes nothing would be risked by the operation of two sets of lines which are electrically distinct.

POWER PLANT LOCATION AND FLOODS

The number of power plants that were compelled to suspend operation in Ohio and Indiana during the recent flood was comparatively large. The facts that the floods reached a height previously unknown in many districts and that the circumstance was responsible for the damage done to power equipment and the consequent interruption in service show that reasonable precautions had been taken to prevent damage by water. The conditions against which the companies will have to protect themselves in the future, however, are those that may develop from a repetition of the extraordinary floods of 1913. After this experience to serve as a guide, the locations for future power-house construction will be selected more carefully with this danger in mind. It will probably be found ex-

pedient by some of the companies to introduce as a permanent measure of precaution a modification of some of the temporary measures of relief and protection that were adopted under the emergency conditions which existed in the spring of 1913. The slow rate at which the water rose in certain localities permitted the completion of plans for protection and the construction of temporary walls, but in most of the cities the rush of water came so suddenly that there was no time to plan or to construct such barriers. An illustration of the steps to which the floods have led is found in the announcement that a committee has been appointed to consider the practicability of the construction of a retaining wall about a section of Louisville which is devoted to industrial purposes and in which the Campbell Street power plant of the Louisville Railway is located. All feasible measures of protection should be adopted for existing structures, and more cognizance should be taken of the danger of floods in the location of new stations. Equipment that has been soaked by water can be restored to a state of operating efficiency, but the traffic that was not carried during the period of suspension of operation is lost, and its absence leaves an unfilled gap in the gross earnings of the property.

SECURING LOWER PURCHASE PRICES FOR EMPLOYEES

Great interest has been aroused by the plan of the Interborough Rapid Transit Company to sell groceries and meats to its employees at practically cost prices and also in the cost-of-living study which has been made by the electric railway companies in Philadelphia and Milwaukee with the ultimate view of aiding the employee in a similar way. To those who are acquainted with the extensive co-operative stores in England and Scotland it has always been a source of wonder that the co-operative store idea has not reached greater development in this country. In the United Kingdom in 1906, for example, there were more than 1400 such stores with nearly 2,500,000 members, over \$160,000,000 capital and sales exceeding \$310,000,000. The efforts to establish similar movements here have been less successful. One reason for this perhaps has been the greater development here of the department store. Nevertheless, in any system of competitive selling, whether by department store or otherwise, the overhead expenses must be considerable, and where any large body of consumers can be brought into co-operative action in their purchases, either because they happen to be engaged in the same line of work or for any other reason, a considerable saving should be shown. This is especially the case where the store caters to only one line of trade and so can keep the amount of stock which it has to carry at a minimum.

Besides the company store and the consumers' co-operative store, another way is available for reducing the cost of living. This method is to arrange with selected tradesmen that the members of the consumers' association shall receive specific discounts on their purchases. A promising beginning along these lines has just been made by the Philadelphia Rapid Transit Company. As announced elsewhere in this issue, contracts have already been made by that company with an important department store and a

leading coal dealer for reduced prices to employees of the company, and other businesses will be added as rapidly as their standing and concessions are approved. A conspicuous feature of the Philadelphia scheme is that the purchases will have to be made by means of a coupon ticket book which is issued only to members of the Co-operative Beneficial Association, now numbering about 7500 persons. The discount is not given by the tradesmen to the individual customer direct but to the association as a body, and the latter in turn sells the books at 8 per cent less than the actual purchasing value which is printed on the tickets. Among the merits of the cash coupon book are that the benefits can be confined to members of the co-operative association, that the buyer receives a substantial uniform discount for any kind of purchase and that the merchant is furnished with a simple way of checking all sales from this source. An earlier and highly successful example of this system of co-operative buying is furnished by the benefit association which numbers 9750 of the 12,400 employees of the Berlin (Germany) Street Railway. The weekly official organ of this association publishes a list of more than 250 establishments which give discounts of 5 per cent to 10 per cent. The businesses listed include every kind of food and clothing, candy, tobacco, druggists' supplies, lighting fixtures, fuel, hardware, liquors, house furnishings, musical instruments, optical supplies, jewelry and dental service. Even an undertaker, who offers a discount of 10 per cent, is included. Further, by special arrangement with a number of theaters, members of the association can secure tickets at half price.

Advantages of the Berlin and Philadelphia scheme are that the railway company is relieved of all the responsibility of purchases or sales except for the restaurants at carhouses, that any desired variety of stores can be listed, and that long trips by buyers are avoided by increasing the number of each kind of business establishment as desired. A discount of 5 per cent or 10 per cent may not seem a great concession, but as a matter of fact, many storekeepers, such as grocers, have to do business in accordance with the old motto of "quick sales and small profits." On the other hand, some of the advantages of the co-operative store are lost. Under such an arrangement as that at Berlin and Philadelphia the customers never know how near to cost price they are paying for their goods as they do when the real co-operative plan is followed. Moreover, the tradesmen can afford to make a discount to members of the society only because of some real or fancied benefit, such as increased patronage, and this means that similar contracts will not be made with competitors in the same shopping territory. The fact that all business is on a cash basis is, however, a consideration.

When a co-operative store is located at a carhouse, with no charges for rent, heat and light, its prices to the employee ought to be less than those of any private shopkeeper, no matter how slight his profits. It can easily be seen, however, that complications will grow with any increase in the variety of goods handled, and probably the simplest plan is to confine the supplies at first to standard groceries. In any case, the management ought to be in the hands of specialists. The proprietor of a private store always has the incentive which exists when business is

conducted for a profit, and he will naturally aim to adjust his prices so as to make the most money from his entire sales, independent of the extent of his profit on individual articles. Unless the co-operative store possesses the same skill of marketing and selling, its prices may be higher than those in the private store and it may do less to make its store attractive than its private competitor. Indeed, most of the wrecks of co-operative efforts in the past have been due to unskilful management rather than to any defect in the principle of co-operative buying and selling.

THE SAN FRANCISCO REPORT

The report of Mr. Arnold on San Francisco, an abstract of which is published in our issue of this week, is primarily an analysis of operating and physical conditions and also contains a definite recommendation for a resettlement ordinance involving gradual decapitalization of the intangible value of the street railway property. At the same time, the situation there described is one which may occur in other cities where there are limited franchises, so that it possesses much more than local interest.

In San Francisco, as in other cities, Mr. Arnold has sought to perfect a fair basis under which the city and the company could meet, settle their differences and work out a satisfactory method for co-operative development rather than to continue hostile relations in the future. The plan offered as a foundation for a resettlement ordinance is somewhat similar to the one included in the 1907 Chicago ordinances but possesses some material modifications. The most important of these is the provision for the gradual decapitalization of the intangible value which, in the case of San Francisco, as elsewhere, is a part of the total present value of the property. We believe the rapidity of the rate at which the city's share compounds in the proposed resettlement will be surprising even to many who are familiar with other bases of resettlement. According to the diagrams in which the probable earnings are charted, the rate is so high that a change of \$5,000,000 in initial intangible allowed makes a difference of only two years in the period of ultimate recapture of the property by the city. This is true also in spite of the fact that the sinking funds are not excessive and the provisions of the renewal fund are such as always to insure ready cash for necessary expenditures. We note that in his discussion on this part of the report Mr. Arnold expresses the explicit opinion that a street railway should be regarded as a continuing investment and that non-physical value cannot be avoided in the organization and construction of any property, whether private or municipal. These are conclusions on fundamental points that need a wider recognition than they have yet had, and in view of the widespread absence of public opinion upon the truth of this condition they cannot be emphasized too strongly. Still another interesting feature of the report is the recommendation of the Philadelphia plan for the compensation of labor upon the basis of a fixed percentage of the gross receipts, although the percentage recommended in this case is different from that in Philadelphia.

The situation which will have to be overcome in San Francisco before a satisfactory settlement of the trans-

portation problem can be worked out is unusually complex. That it is of such a nature is due in part to the past differences between the company and the city which have hampered the development of both. It has resulted in the adoption of clauses in the last city charter which make it practically impossible, in the opinion of both Mr. Arnold and the railway company, for the company to make extensions. It also has been followed by the actual establishment, although as yet on a small scale, of a competitive municipal railway system.

Under the political conditions which exist on the Pacific Coast the policy of the municipal operation of street railways seems at present to be in the ascendant, but by the inexorable logic of figures Mr. Arnold has shown that even under the present liberal debt limit of San Francisco a purely municipal railway line cannot be built there with sufficient rapidity to take care, at all adequately, of the needs of the city for transportation, even if all of the credit available by increased assessments should be devoted to that one object. In the meantime, the company possesses certain legal rights and cannot be dispossessed from its occupancy of the streets. Hence, unless some settlement is made, the increasing population around the Golden Gate will locate in the cities across the bay and in the southern part of the peninsula on which San Francisco is located, instead of within the city limits.

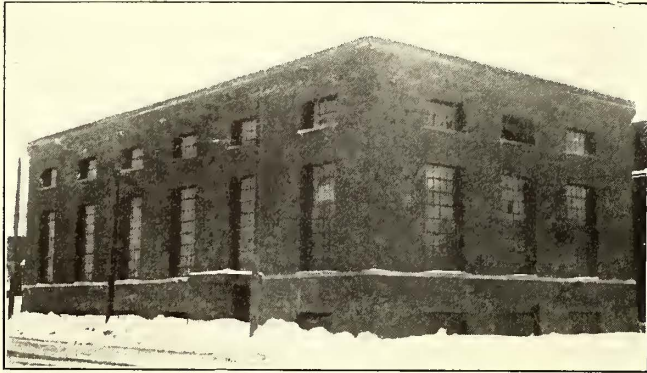
For these reasons the situation is acute for both the railway company and the city, but, in a sense, it is of greater immediate concern to the city than the company. If the proposed settlement is made, the company will have to make great sacrifices, but for the present at least it is in possession of the main arteries of travel, and it can make the most of them while the last shred of its legal rights to their possession remains. But the interests of the city are suffering severely and will continue to suffer in even greater ratio from the lack of adequate transportation facilities, and the Exposition grounds still remain practically isolated from the residential sections.

Charter Amendment 34 was defeated at the election in San Francisco last December by only a comparatively small vote, but with the new light which the citizens now have on the subject and the necessity which they must feel to settle the transportation question before the opening of the Exposition in 1915, another election might result differently. The Far West is looking forward to great industrial development after the opening of the Panama Canal because the canal will render that section of the country far more easily accessible to the labor markets in Europe than at present. But labor is not the only element in industrial development. It must be combined with capital, and a reputation in San Francisco or elsewhere on the Pacific Coast of demagogism in politics and of a spirit inimical to capital will defeat many of the benefits expected in that section of the country from the opening of the canal. All considerations, therefore, point to the desirability on the part of the city of an early settlement of this question, and we believe that in San Francisco, as in other cities, a constructive policy as regards the public utility corporations within its borders will produce results which will be far more beneficial to municipal growth than one of antagonism and competition.

New Substations in Buffalo

The Increasing Power Requirements of the International Railway Company Have Involved the Construction of Two Substations of Modern Design—A Description of the Building Design and the Arrangement of Equipment Is Given

In Buffalo an improved service has resulted in a considerable growth of traffic, and, as new cars are being added to the equipment, the power requirements have been increasing at a comparatively rapid rate. To meet this increased demand the International Railway Company has built and recently placed in commission two new substations,



Buffalo Substation—Exterior View from Broadway

one on Fillmore Street and another on Broadway. Both of these have been designed with the utmost regard for efficiency and capacity and they represent thoroughly modern developments in substation arrangement.

The substations are designed so that their capacities may be easily increased, the plan being to utilize the older types of rotary converter owned by the company for as long as is commercially profitable, after which they are to be replaced with larger machines. The buildings are, in addition, designed to permit extension at any time when this becomes necessary. The Broadway substation is the most recently constructed of the two, and, as the plants are substantially similar, the description of this station will serve to show the trend of this branch of engineering practice on the Buffalo street railway system.

BUILDING DESIGN

The Broadway substation is located on the south side of Broadway $3\frac{1}{4}$ miles from the business section of the city. It is 89 ft. 5 in. long, 48 ft. 6 in. wide and 33 ft. 8 in. high above the grade line. The walls are of shale brick faced with Orchard Park Devonshire brick, which is laid with open joints and trimmed in conformity with current style in substation architecture. The wall incloses a steel frame supporting steel roof trusses on which a concrete roof is carried. The brick wall is 17 in. thick and rests on a 26-in. concrete basement wall. On the north and south sides of the building are liberal window spaces fitted with steel frame sashes. On the south side is a large opening closed with a rolling steel door. The entrance doorway is small, is located on the ground level and is protected by an ornamental marquis.

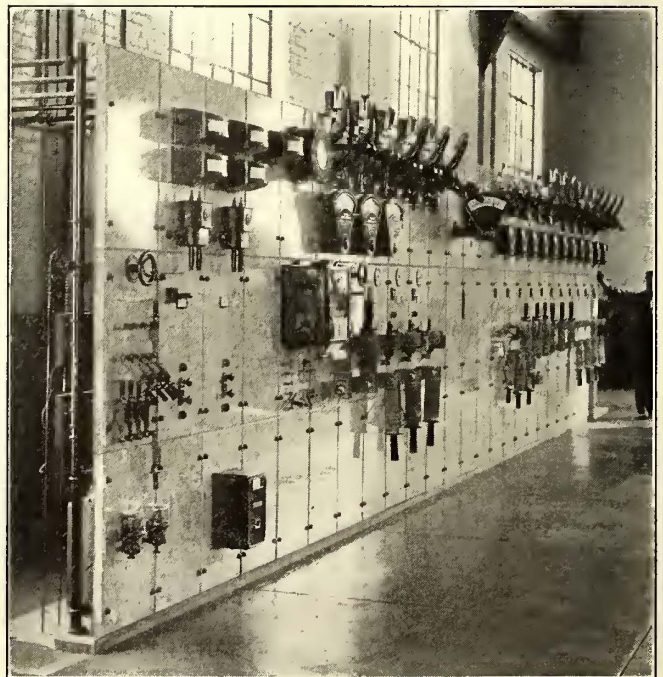
The interior of the building is divided into two stories, the main floor and the basement. On the main floor are three 400-kw, three-phase rotary converters and two 1000-kw, six-phase converters, with the necessary transformers for reducing the line voltage of 11,000 to 430. On this floor are also the high-tension busbars and switches in fireproof compartments and a complete low-tension switchboard. This floor is served by a 15-ton Whiting crane with hand-operated hoist. The cable hoist is long enough to reach to the basement floor through an opening in one corner of the building.

In the basement are the fans for supplying cooling air to the transformers and to the reactance coils for the small converters, a storage battery for the high-tension switch control and for emergency lighting, the negative busbars, an air compressor and the usual toilet and storerooms.

ARRANGEMENT OF EQUIPMENT

It will be noted from the drawings that the converters are arranged in a row along the center of the room. The northerly two are General Electric interpole six-phase machines of the latest type. They operate at 500 r.p.m. and are provided with a mechanism for raising the d-c. brushes. The remaining three converters, which are of 400-kw capacity, have seen service for a number of years, although they are still in excellent condition. They are three-phase machines, non-interpole, and they also have a speed of 500 r.p.m. These two types of rotary, operating side by side, afford an interesting contrast of design and construction. They are of almost exactly the same diameter, although the older machines occupy somewhat less floor space. Ultimately the small rotaries will be replaced by larger ones and the floor openings have been made large enough for 1000-kw machines. A part of the opening for each small rotary has been temporarily filled with a concrete slab by the simple method shown in the accompanying illustration.

Immediately back of each rotary is its transformer equipment. For each of the large machines a 1050-kva, three-phase air-cooled General Electric transformer is provided. These reduce the voltage from 11,000 to 430, and each contains 15 per cent of reactance. They require $1\frac{1}{4}$ oz. air



Buffalo Substation—Main Switchboard

pressure for ventilation. The smaller rotaries have three transformers each of a combined capacity of 450 kva. The floor has been arranged to accommodate 1050-kva transformers by temporarily blocking up part of each opening.

The booster set consists of a 300-hp, 600-volt motor driving at each end a 100-kw, 250-volt generator. While somewhat inefficient, this is at present the only available means

for giving satisfactory voltage on two long feeders supplying Depew and Lancaster.

HIGH-TENSION SWITCHING APPARATUS

The high-tension busbars are located along the west wall in compartments consisting of brick walls and horizontal partitions of litholite. The busbars are made of flat copper 2 in. x $\frac{1}{4}$ in. in section, and they are mounted on porcelain insulators one above the other. In the wall compartments are also three remote-control, motor-operated, high-tension oil switches of the General Electric H3 type, provided with mechanical locks to prevent them from closing accidentally. These switches connect the busbars with the high-tension cables. Switches of the same type for making connections to the transformers are placed in a row of brick chambers separated by a $3\frac{1}{2}$ -ft. passage from the busbar chambers. There is a set of three disconnecting switches for each cable and there is also a set for each converter. The usual busbar disconnecting switches are used in addition. The busbar and switch compartments present a very neat appearance, being constructed of Kittanning vitrified brick having a light salmon color and laid very close.

Near each transformer is a low-tension a.c. starting panel with one-third and two-thirds voltage taps. Each panel contains an a.c. ammeter, an oil-switch control switch,

oil switch only, 3000-amp machine switch, 200-amp lighting switch.

Nos. 10 to 13, blank for future converters and for battery booster.

No. 14, d.c. motor panel; contains circuit breaker, ammeter and shunt, 800-amp switch, starting switch and potential receptacle.

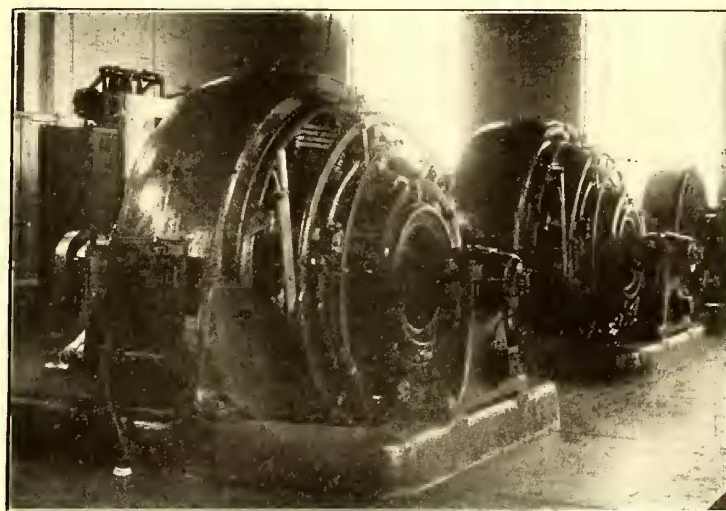
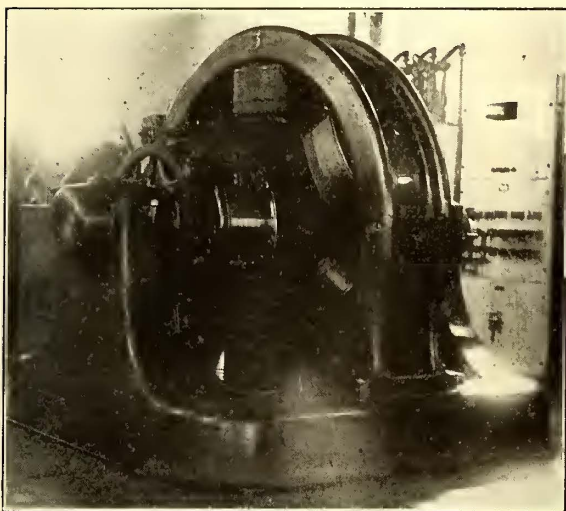
Nos. 15 and 16, line booster panels; each contains circuit breaker, ammeter and shunt, potential receptacle, single-pole, double-throw 1200-amp switch, single-pole and single-throw 1200-amp switch.

No. 17, d.c. feeder panel, 1200-amp capacity; contains circuit breaker, ammeter and shunt potential receptacle and 1200-amp switch.

Nos. 18 to 24, d.c. feeder panels, 2000-amp capacity; each contains same equipment as No. 17 except that the instruments are of larger capacity.

LIGHTING AND WIRING

The main floor is lighted with General Electric inclosed-arc lamps placed close to the ceiling and hung in KZ cut-outs. They can thus be lowered for trimming. This provision for trimming is found to be a great improvement over fixed suspension of the lamps requiring trimming from the crane, for in a one-man station trimming by the



Buffalo Substation—Views of 400-kw Rotary and 1000-kw Rotary Taken on the Same Scale to Show Their Approximately Equal Size

a triple-pole, double-throw 800-amp starting switch, a similar 2000-amp starting switch and an overload relay.

LOW-TENSION SWITCHBOARD

The low-tension switchboard comprises twenty-four panels arranged in a continuous row on one side of the station. The board is made of blue Vermont marble and is of standard General Electric Company construction. The arrangements and contents of the panels are as follows:

No. 1, utility panel; contains battery ammeter and rheostat operating mechanism for switch-control battery, ten small switches for lights, air compressor, etc., bell alarm relay and low-voltage relay controlling emergency lights from small battery.

No. 2, three-phase incoming line panel; contains ammeter, power-factor meter, control switch for oil switch, potential receptacle, overload relay and transfer switch for cutting secondaries of current transformers into meter circuit.

No. 3, same as No. 2 except that an indicating wattmeter takes the place of the power-factor meter and that a watt-hour meter is added.

Nos. 4 and 5, blank for future a.c. cables, but the former has an a.c. voltmeter mounted upon it.

Nos. 5 to 9, d.c. rotary panels; each contains circuit breaker, ammeter and shunt, rheostat-operating mechanism, potential receptacle, oil-switch control switch for opening

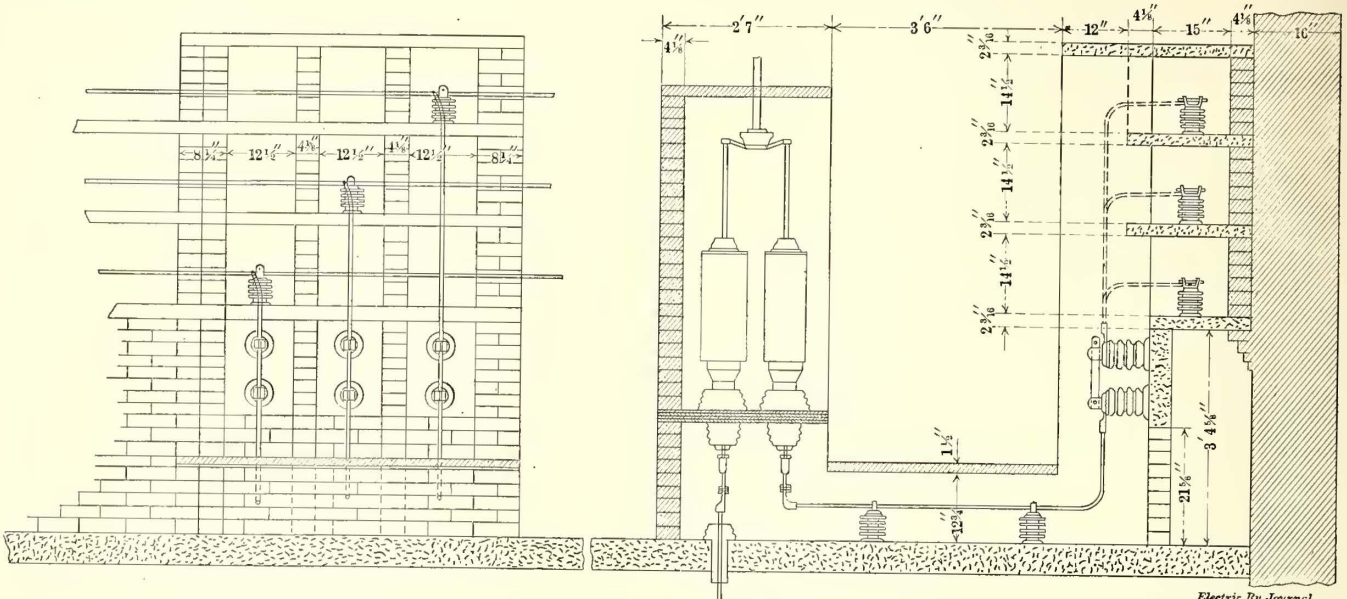
old method is likely to result in delay in replacing circuit breakers and also involves danger of accident to the operator. Ten arc lamps are used for lighting the main floor, and in addition there are two clusters of three 16-cp incandescent lamps for emergency use. The latter are automatically thrown into circuit with the storage battery when the alternating-current supply fails, switching being done with an automatic relay located on the northerly panel of the low-tension switchboard described above. The basement is lighted with incandescent lamps. All of the wiring for the control and lighting circuits, as well as for the light power circuits, is placed in iron conduit in the concrete floor, resulting in a very neat appearance.

SPECIAL FEATURES ON MAIN FLOOR

Among the special features which attract the eye of the visitor on the main floor, two deserve special mention. Near the southeast corner is a removable grating in the floor about 6 ft. x 8 ft. in size. The grating is of $1\frac{1}{2}$ -in. x $2\frac{1}{2}$ -in. mesh and made of $\frac{1}{8}$ -in. x 3-in. iron, riveted together in a $\frac{1}{2}$ -in. x 3-in. iron frame. This opening permits apparatus to be lowered into the basement and at the same time it serves as a ventilator for the main room. It connects with the fan room in the basement and as it is near the large steel door, which will be kept open in summer, it provides the basement with cool air in that season.

Another feature is an arrangement for using the crane for drawing machinery into the building. This consists of a 3-in. iron bushing placed in the floor opposite the large doorway and about 24 ft. from it. The bushing is mounted on one of the floor beams and is braced in the direction of

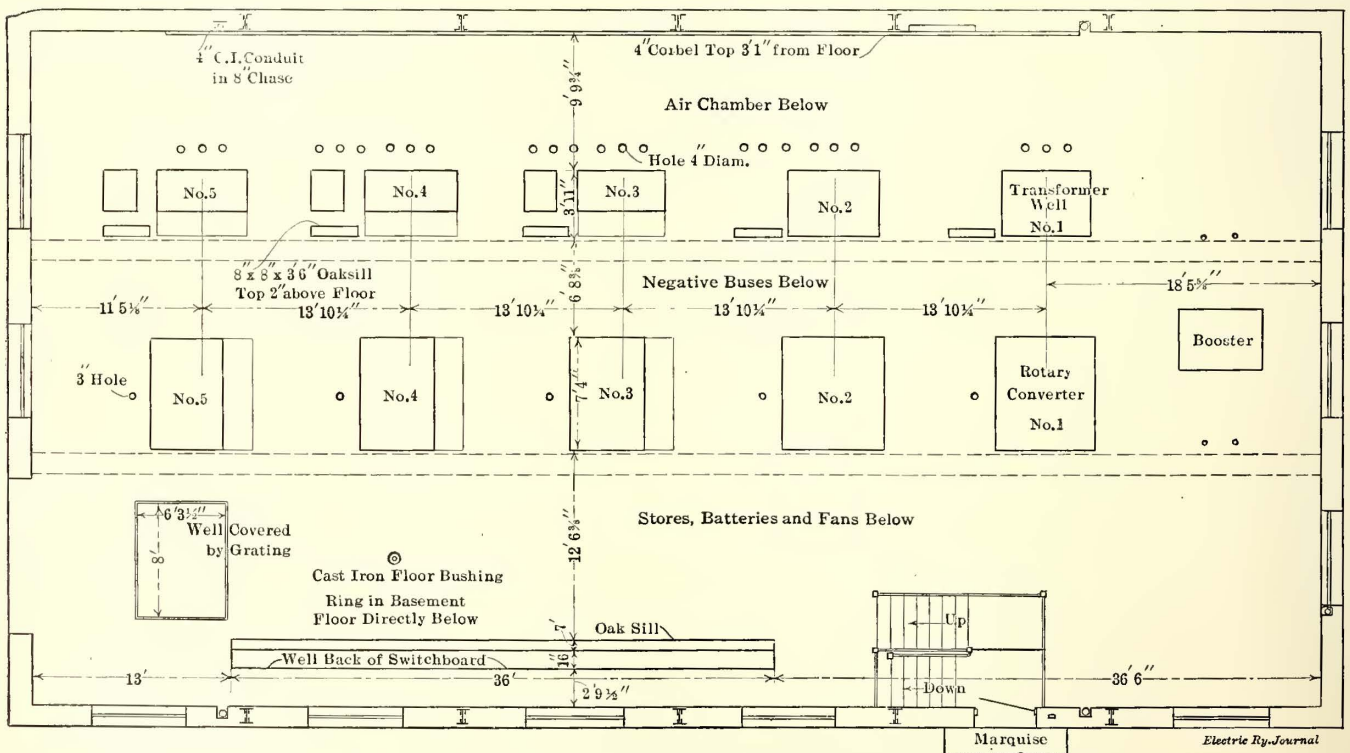
The basement is divided into three nearly equal longitudinal compartments with 16-in. concrete walls. These walls form the main supports for the rotaries and transformers on the main floor. The westerly space is the air



Buffalo Substation—Elevation and Cross-Section of High-Tension Bus Compartment at Oil Switches

the doorway with 8-in. I-beams riveted to the floor framing. Directly below this bushing in the basement floor is a heavy iron ring 12 in. in diameter linked with an I-bolt which is molded into a concrete foundation. When a heavy piece of apparatus is to be unloaded from a dray, a pulley block is

chamber into which the transformer cases open directly. In the floor are two openings which serve as air passages from the fans surrounded by 6-in. x 6-in. concrete curbs. Overhead are the high-tension cable connections with the series transformers for current measurement. In the east

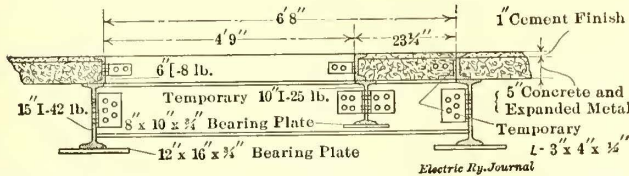


Buffalo Substation—First-Floor Plan of Broadway Substation, Showing General Arrangement of Equipment

attached to it and a chain is hooked into the basement ring, passed through the floor bushing and the pulley block on the piece to be moved and then attached to the crane hook. An enormous force is thus made available to pull a load on rollers into the building, where it can be picked up by the crane.

wall are five groups of six ducts, each to accommodate the low-tension cables from the transformers. On these low-tension cables are series transformers, one to each group. The middle compartment of the basement contains reactance coils for the small rotaries. These coils are mounted on brackets on the west wall near the low-tension ducts.

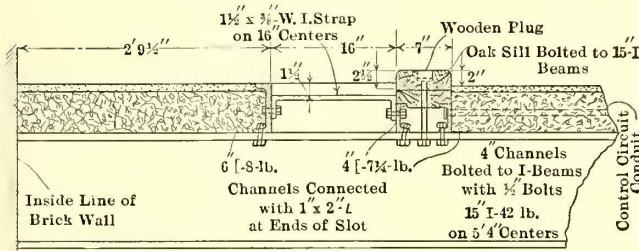
As but three ducts are needed for the cables of the small converters, two of the remaining openings are plugged and the third is connected by a tin pipe with the corresponding reactance coil case to provide cooling air. Overhead are the large negative busbars connected to the outside through eight ducts molded in the north wall and the inductive shunts for the interpoles of the new rotaries. On the east wall of the middle compartment is a row of ducts placed 7½ ft. from the floor through which the d.c. cables



Buffalo Substation—Floor Framing at 400-kw Converter Wells

are led to the low-tension switchboard. At the south end of this compartment is an air-lock passage into the air chamber. Beneath the floor are the air passages connecting the fans with the air chamber.

The east basement compartment contains a large store-room provided with lockers, a convenient toilet room, storage battery room, a fireproof compartment under the stairs and a large fan room. The storage battery room contains sixty-two type 7-D cells made by the Electric Storage Battery Company. These supply current for the control and emergency lighting circuits. The battery room is connected by a large duct with the air chamber and by another with the outside air, thus insuring excellent ventilation. In



Buffalo Substation—Section Through Switchboard Slot

the fan room are two 70-in. American Blower Company fans driven by 20-hp induction motors. In the southeast corner is a General Electric air compressor, type CP-27, used for cleaning purposes and operated from the low-tension switchboard. In the east wall are the feeder ducts connecting with the outside conduits. Near these outlets are the electrolytic lightning arresters, two in series for each feeder.

The floor of the basement is well drained, and it, as well as the main floor, is treated with "cemkote" floor paint.

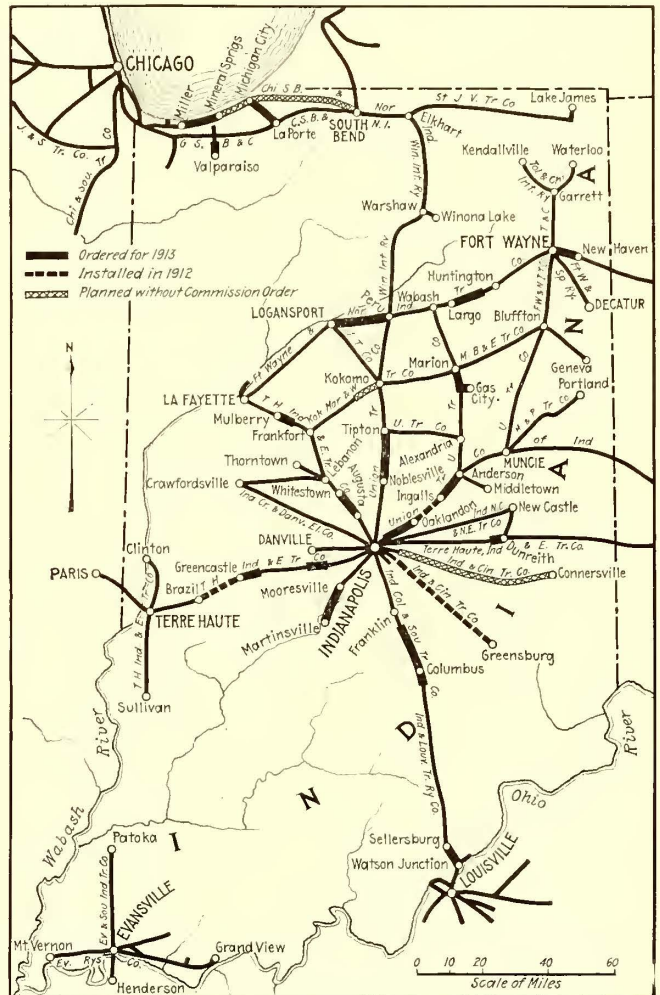
INDIANA BLOCK SIGNALS

All but one of the contracts for block signaling on electric lines in Indiana as ordered by the Railroad Commission of that State have been placed. The first instalment of these contracts was closed as reported in the ELECTRIC RAILWAY JOURNAL of March 15, 1913. This included approximately 32 miles on the Terre Haute, Indianapolis & Eastern, 33 miles on the Union Traction Company of Indiana, 5 miles on the Kokomo, Marion & Western, and two long sections aggregating 25 miles on the Fort Wayne & Northern Indiana. All of these contracts went to the General Railway Signal Company and the standard light signals manufactured by this company are to be installed on all four railways.

The remaining contracts have just been placed with the

Union Switch & Signal Company and include 11.6 miles on the Chicago, Lake Shore & South Bend Railway, as ordered by the commission, and 43 additional miles, making solid blocking between Gary and South Bend. The Chicago, South Bend & Northern Indiana Railway has also contracted for 9.6 miles, the Indianapolis & Columbus Southern Traction Company for 21.9 miles, and the Louisville & Northern Railway & Lighting Company for 3.5 miles. At present the only contract not yet closed for the block signals which were ordered by the commission is the one for the Ohio Electric Railway. This contract includes 4.7 miles between the city limits of Fort Wayne and New Haven on the Fort Wayne-Lima line.

In addition to the other contracts the Indianapolis &



Indiana Signals—Map Showing Protected Sections of Track, Existing, Ordered and Proposed

Columbus Southern Traction Company and the Louisville & Northern Railway and Lighting Company are considering the installation of block signals on the entire line between Indianapolis and Louisville. Proposals already have been requested which will include 36.8 miles on the Indianapolis, Columbus & Southern Traction Company's line and 21.5 miles on the Louisville & Northern Railway and Lighting Company's line. The Indianapolis & Cincinnati Traction Company also has under consideration the installation of signals for the 55 miles of track between Indianapolis and Connorsville. These will probably be of the Simmen type. M. H. Hovey, Madison, Wis., has been retained as consulting engineer by all the companies contracting for signal installations under the order of the Railroad Commission and he will also have supervision over the additional installations which in total include approximately 250 miles of both light and semaphore types of signals.

Final Report on San Francisco

This Report Recommends a Resettlement Plan by Which the Intangible Values of the Existing Railway Property Will Be Decapitalized and Outlines Principles Considered Desirable in City Railway Franchises—An Analysis of the Financial and Operating Records in San Francisco Is Included

The concluding report of B. J. Arnold on transportation conditions in San Francisco was presented to the Mayor and Board of Supervisors the latter part of April. It includes the preliminary reports already presented in the *ELECTRIC RAILWAY JOURNAL* and also contains recommendations for a resettlement franchise plan, operating records and other matter. The volume contains over 500 pages, fifty-seven tables and twenty-two plates.

In his general review the author points out the complicated nature of the transportation situation in San Francisco. While the climatic conditions are ideal, the rugged topography has resulted in the isolation of the local dis-

Previous reports have shown that the bonding capacity of the city is far too small to permit the construction of the necessary street railway extensions on a municipal ownership basis. The minimum needs of the immediate future are 72 miles of track, exclusive of tunnels, and the most pressing of these immediate needs are transportation facilities to the Exposition site. The present service capacity to the Exposition is barely one-third of that necessary, with only one line in any sense adequate for maximum service, and that line terminates more than a mile from the site for the Exposition. At the same time the company is embarrassed in arranging for new capital for extensions

TABLE I—SHOWING COMPARATIVE RESULTS OF THE SEVERAL RESETTLEMENT PLANS

	Plan 1. Based on Present Distribution of Income	Plan 2. Optional Use of City's Share	Plan 3. Full Share to City	Plan 4. Full Share to City	Plan 5. Labor Guaranteed Fixed Percentage of Gross Receipts	Plan 6. Based on Fixed Per- centage of Income. No Guaranteed Return to Company on Investment	Year 1911
Distribution of Residual Net Income—1914							
Labor, per cent.....	30	30	20	10	..*	..	....
Service, per cent.....	30	35	40	50	55	..	....
City, per cent.....	5		40	40	45	..	....
Company, per cent....	35	35	40	40	45	..	....
Distribution of Profits							
Labor	\$268,500	\$268,500	\$179,000	\$89,500	\$200,000*	.....	....
Service	\$268,500	\$313,250	\$358,000	\$447,500	\$492,000	.....	....
City	\$44,750		\$358,000	\$358,000	\$403,000	.....	....
Company	\$313,250	\$313,250				.....	....
Probable Distribution of Income							
Labor	\$2,913,000	\$2,913,000	\$2,823,000	\$2,734,000	\$2,844,000	\$2,844,000	
Per cent of income..	30.7	30.7	29.8	28.9	30.0	30.0	30.0
†Service	\$3,502,000	\$3,234,000	\$3,234,000	\$3,234,000	\$3,034,000	\$3,034,000	30.0
Per cent of income..	36.9	34.1	34.1	34.1	32.0	32.0	30.0
City and State.....	\$519,000	\$787,000	\$832,000	\$921,000	\$966,000	\$758,000	
Per cent of income..	5.5	8.3	8.8	9.7	10.2	8.0	5.0
Company	\$2,262,000	\$2,262,000	\$2,307,000	\$2,307,000	\$2,352,000	\$2,560,000	
Per cent of income..	23.9	23.9	24.3	24.3	24.8	27.0	30.3
Sinking fund	\$284,000	\$284,000	\$284,000	\$284,000	\$284,000	\$284,000	
Per cent of income..	3.0	3.0	3.0	3.0	3.0	3.0	4.7
Total income	\$9,480,000	\$9,480,000	\$9,480,000	\$9,480,000	\$9,480,000	\$9,480,000	

ASSUMPTIONS.—(1) Date of resettlement, Dec. 31, 1913. (2) Initial "agreed capital value" of \$35,000,000, including an initial tangible value of \$21,000,000 (representing the probable depreciated value of the physical property of the railway company). (3) Net receipts for 1914 to be 30 per cent of the gross receipts, or \$2,844,000 (remaining after deducting from gross receipts operating expenses, including maintenance, renewals, insurance, taxes, sinking fund for decapitalizing depreciation and the amortization annuity of 3 per cent of the gross receipts). (4) Company to receive a 5 per cent return on agreed capital invested under the assumption that investment increases at the rate of \$3 for each additional \$1 earned. At the end of the first year, 1914, this capital investment is \$38,983,000 and the interest return \$1,949,000. The residual net income is \$895,000, which is the difference between net receipts and the company's fixed return.

* Labor's share being a fixed percentage of income, the benefits accruing will be the difference between actual labor expenses and 30 per cent of the gross receipts. The average yearly percentage increase in labor expense for the past three years was about 2 per cent. Estimating more conservatively at 3 per cent, the share accruing to labor for the year 1914 should be about \$200,000.

† Includes reserves for renewals, depreciation, insurance and accidents.

tricts. It is only by the welding together of these sections and the adoption of a broad transportation policy that it will be possible to secure "one city, one fare, universal transfers, centralized operation, minimum investment and finally municipal ownership, if the city's present policy continues to prevail." But the city has lacked an appreciation of these problems, and the utilities have failed to keep pace with the city's rapid growth. The effects of the present situation, according to the report, are "complicated franchises, impossible charter provisions, unexercised regulative powers, uncertain stability of investment, deferred rehabilitation of property, curtailment of service and lack of confidence in present and future. In the meantime, surrounding communities are capitalizing this uncertainty, assisted by concessions in fare and time of transit denied to San Francisco's logical outlet—the Peninsula—through lack of adequate transit facilities. The obvious and only certain remedy lies now within the power of the city by grasping its opportunities before it is too late and effecting a solution not piecemeal, but based upon the broader lines of effort indicated in this report."

by the very short franchise term which it has under the present charter and the city's declared policy of municipal ownership. Briefly, Mr. Arnold recommends a resettlement franchise upon terms somewhat different from those in Chicago. By them arrangements would be made to retire all intangible values in the property during the first franchise period and to deliver the complete property with all extensions into the hands of the city at the end of the second period at practically half price. Or, the city's share, if allowed to compound, could automatically recapture the entire property unaided within perhaps thirty years. Incidentally, the interests of labor would be conserved by the provision of a benefit reserve fund insuring employees against disability and also a bonus for meritorious service.

PLAN OF FRANCHISE PROCEDURE

The plan recommended is a resubmission to popular vote of Charter Amendment 34 (see *ELECTRIC RAILWAY JOURNAL* for Dec. 7, 1912, page 1150) and the establishment of a public service commission to act in an advisory capacity to the Board of Supervisors. Such a plan, it is believed, should be welcomed by the company, because after seven-

teen years the franchises for approximately two-thirds of its mileage will expire and during that time the company can hardly earn enough to amortize its present funded debt.

ANALYSIS OF VARIOUS PROFIT-SHARING METHODS

The provisions of Charter Amendment 34 may be worked out in various ways. The report says, in part:

"In order to interpret the provisions of Charter Amendment 34 in concrete terms, a number of profit-sharing plans have been worked out in approximate figures showing the possibilities of the future. These are all based upon an indeterminate franchise of twenty years, with a possible extension to forty years if the city does not then elect to purchase. All elements of initial intangible value in the agreed purchase price are to be decapitalized by a sinking fund within the first franchise period out of the company's share in earnings, leaving only tangible property to be purchased by the city at its then depreciated value. These decapitalized values would include depreciation at date of settlement as well as all depreciation which accrues subsequent to the end of the rehabilitation period represented by the difference between the cost of producing the property new and the best condition in which it is practicable to maintain it. If still operating the property during the next twenty years, the company is to decapitalize tangible values representing fixed structures in the streets and real estate actually used and useful in operating the road, and in addition, all depreciation which takes place in all new property added after the expiration of the first twenty-year period as well as that which takes place after that date on the old property up to the date of purchase by the city. This total depreciation will be the difference between the cost of the property new and the best condition in which it is practicable to maintain it, all of which will amount to practically half of the investment. Ordinary operating upkeep of the property consisting of minor repairs is to be treated as maintenance, and all shrinkage in values through depreciation or inadequacy is to be provided for by a renewal fund, both maintenance and renewals to be met out of earnings, so that the property may thus be maintained permanently in good operating condition (75 per cent of cost new or thereabouts).

"Table I shows possible methods of distribution of net income by various profit-sharing plans, ranging from the practical 'Chicago plan' to those approaching more or less the ideal. All plans presuppose an agreed capital valuation of the property with a 5 per cent return thereon practically guaranteed to the company as a prior claim on net income; the residual net income in excess of this return to be distributed between the various participants in the profit-sharing plan proposed. For the purposes of this analysis, the operating expenses including maintenance, renewals and sinking fund for decapitalizing depreciation, are fixed at 62 per cent of the gross receipts excluding, or 67 per cent including, taxes and licenses, with 3 per cent of the gross receipts reserved for amortization during the first twenty years (based upon the smaller initial intangible value or 4 per cent upon the larger) and 3 per cent during the succeeding twenty years. This leaves 30 per cent and 29 per cent respectively available from the annual income for fixed charges, contingency fund and profit during the first period and 30 per cent for the second period, from which after deducting 5 per cent interest on the agreed capital invested in the property, there remains what is herein termed residual net income.

STATEMENT OF VARIOUS PLANS

"Plan 1 assumes the 1911 distribution of the company's income as a basis of participation in the residual net income, which results in profit-sharing between labor, company, city and service. Operating labor, including the wages of every employee receiving \$1,500 per annum or under, gets 30 per cent, the company 35 per cent, the city 5 per cent and service 30 per cent. In the share for service all

elements of the operating expenses, except operating labor as above defined, may be regarded as service rendered to the public. As the business becomes more profitable, a bonus share would thus be available for increased service. This, however, might lead to excess service which would not be warranted under existing powers of regulation in view of the more pressing demands for extensions and decapitalization. Or it might encourage the company to curtail operating expenses in order to force expenditures from this share for this purpose.

"Plan 2 'pools' the shares accruing to the city and to service respectively, in order to give the city the option of either increased service, decapitalization, extensions, or other purposes. The shares to labor and the company remain the same as in Plan 1.

"Plans 3 and 4 gradually modify the respective shares to labor, city and company in a direction affording the city greater purchasing power. However, Plans 1, 2, 3 and 4 provide a bonus for labor out of residual net income, instead of this bonus being charged to operation where labor expenses properly belong. Under present conditions these plans would result in an unwarrantable diversion of revenue from extensions and decapitalization more urgently needed.

"Plan 5, which I recommend, includes only the city and company as direct participants in residual profits, the former receiving 55 per cent and the latter 45 per cent. But provision is also made for labor sharing indirectly and probably more remuneratively than in Plans 3 and 4 by fixing the per cent of income accruing to all operating labor—in this case 30 per cent—the difference between this fixed per cent and actual wages paid to be distributed in the form of a benefit fund insuring employees against disabilities, and also in the form of a bonus and merit system. The advantage to be derived results from increasing car speeds, more efficient routing and earnings increasing faster than expenses of car operation. This incorporates in the present 'Chicago plan' the bonus principle, which has been put into effect with success in Philadelphia, and, it is believed, secures for labor a valuable form of insurance which, taken in connection with the relatively high wages paid in San Francisco, should be regarded as an ample share under present conditions.*

"Plan 6 does not involve profit-sharing, but rather a distribution of income arbitrarily fixed for the remaining franchise period (presumably subject to mutually agreed adjustment from time to time). Under the distribution assumed the city receives 8 per cent of the total income, labor 30 per cent, service (as defined in Plan 1) 32 per cent and the company 30 per cent, out of which it must provide fixed charges, the amortization and contingency reserve funds and profits. While possibly practicable, it is much less flexible than the previous ones, and does not guarantee the company any return upon its investment, however small.

ULTIMATE FINANCIAL RESULTS

"In Figs. 1, 2 and 3 the operations of these various plans are worked out graphically so as to show: (1) capital investment in property, (2) purchase price to city, (3) date of recapture of property. The initial capital values shown in these diagrams were selected for purposes of illustration only and should not be interpreted as an attempt to place a value upon the property. On the assumption that the depreciated or present value of the physical property is about \$21,000,000 and that about \$7,000,000 should be expended, within the next few years, to bring it up to its assumed 'cost to reproduce new value' of \$28,000,000, the diagrams shown on page 846 have been prepared. After re-financing United Railroads 4's to 5's the resulting present bonded debt would be \$33,650,000. Under Charter Amendment 34 all sinking fund accruals must be deducted from

*"In Philadelphia the fixing of trainmen's share alone at 22 per cent of the gross receipts, or the same as the trainmen received for the year immediately preceding the date of its adoption, has resulted not only in benefit reserve but also increased wages."

the purchase price, thus arriving at a total of \$28,000,000 as an assumed value, not including any intangible value except depreciation.

"That portion of the 'intangible value'† of the property represented by franchise value is the earning power of unexpired franchises and is usually understood to be the summation of all residual net income from the operating property accruing to the company from year to year, with interest compounded to expiration. But from this gross value would have to be deducted eventually all unfunded debt remaining at maturity not covered by salvage value, thus giving an amount the present value of which would represent the franchise value portion of the capital value as of to-day, which franchise value would be more or less affected by the right of the State to regulate rates. Conservative estimates based upon, first, a minimum, and, second, a maximum rate of probable residual net earnings indicate that this intangible value might lie between \$7,000,000 and \$12,000,000. However, if unimpaired earning power and normal expansion of the system are assumed, these values might lie between \$14,000,000 and \$20,000,000. While this condition particularly applies to a resettlement

in this diagram are: date of settlement, Dec. 31, 1913; depreciated value of property, \$21,000,000; initial intangible value, \$14,000,000, all to be amortized at the end of twenty years, including \$7,000,000 rehabilitation work which is to be capitalized and completed in three years; future investment to increase \$3 for each additional \$1 earned. The purchase price to the city at any date is shown by the dotted line, and the intangible values to be amortized are indicated by the distance (shaded) between 'purchase price and investment' (full black) curves, which values include depreciation accrued both prior to the resettlement and after the completion of rehabilitation. The city's share, if allowed to accumulate at 5 per cent, should suffice to equal the purchase price by 1947, and thus automatically recapture the entire property to the city without cost by acquiring the underlying securities covering these depreciated values, i. e., the actual value of physical property producing the service.

"The plan shown in Fig. 2 differs from that shown in Fig. 1 in that profit sharing in the residual net income exists only between city and company, the former receiving 55 per cent and the latter 45 per cent. This increase in the

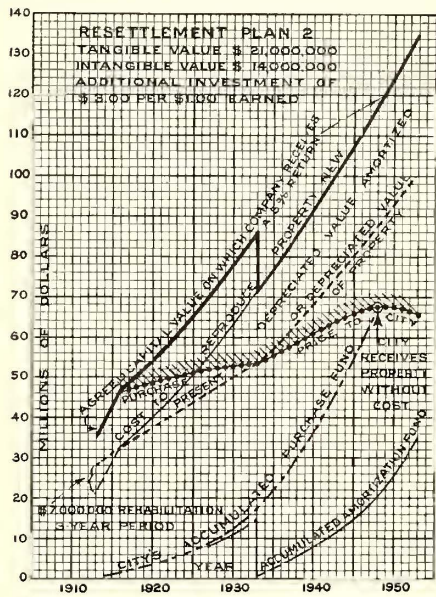


Fig. 1—San Francisco Report—Resettlement Plan No. 2

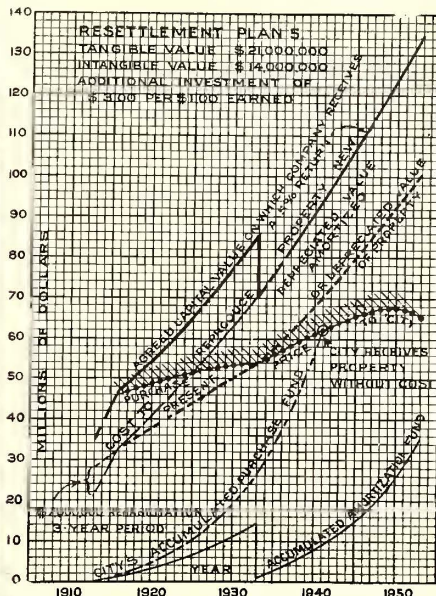


Fig. 2—San Francisco Report—Resettlement Plan No. 5

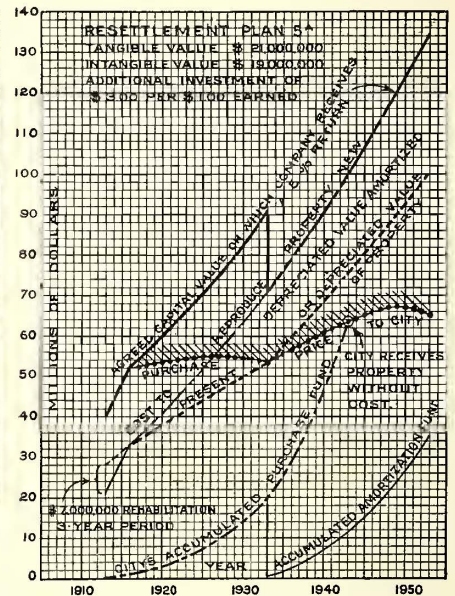


Fig. 3—San Francisco Report—Resettlement Plan No. 5A

plan, which would be most favorable for the city's recapture of the property, it would in all probability be too optimistic for the case in which no such resettlement could be effected and the company decided to continue the operation of the present system unextended, with the minimum possible expenditures for maintenance, betterments and service. In this case, the company would strive to the utmost to 'earn out' even with less total annual income, leaving only a run-down property with little salvage for the city to condemn at the expiration of the franchise. Obviously this situation would be aggravated by the extension of the municipal system.

"Fig. 1 is based on profit-sharing resettlement Plan 2, that is to say, upon a definite apportionment of net income—35 per cent to city, 30 per cent to labor, and to company 35 per cent, in addition to 5 per cent prior return on 'agreed capital value' (shown by full line). The assumptions made

†"Such intangible values other than franchise values are known as development expenses, and usually consist of preliminary technical expense, legal expenses during formation of the company not connected with construction expense, cost of consolidation and reorganizations, sometimes a reasonable promoter's profit, supersession of equipment due to the rapid advance of the art, reconstruction due to unforeseen contingencies, brokerage, discount or premiums on securities, and losses during early operation. All of these and franchise value, if any, should eventually be amortized and eliminated from that value of the property upon which the public should be finally expected to pay a reasonable rate of return, although it is fair that the company should have time to earn and pay to itself this amortization fund out of the earnings of the railway."

city's share over that of Plan 2 enables the city, if it allows its share to accumulate at 5 per cent interest, to take over the property without cost by 1941, six years earlier than in Plan 2. In both cases an annual reserve of 3 per cent of gross receipts (at 5 per cent interest) will suffice to amortize all initial intangible values allowed (except depreciation). After the first twenty years initial value is retired, and this fund starts anew for amortizing part of the physical value. A further fund is necessary for amortizing depreciation (except expenditures for rehabilitation) requiring 4 per cent of the gross receipts for twenty years and thereafter a sufficient amount to cover permanent shrinkage in value through depreciation.

"If we assume a higher initial 'capital value'—say \$40,000,000—a larger amortization fund becomes necessary to enable the company to retire the greater intangible value as required. Moreover, the purchase date will be deferred until 1943—about two years. This condition is illustrated in Fig. 3. In this plan, which is a modification of Plan 5 shown in Fig. 2, the profit sharing in the residual net income between city and company is the same as in Plan 5, Fig. 2, but the initial intangible value is increased from \$14,000,000 to \$19,000,000, which requires an amortizing annuity of 4 per cent of the gross receipts for the first twenty years in order to decapitalize this value by 1933.

Owing to this increased intangible value, the agreed 'capital value' is also increased and the residual net income decreased, so that the property reverts to the city two years later than in Plan 5, or in 1943, but four years earlier than in Plan 2. In all these plans the property is assumed to be maintained 75 per cent good throughout the second twenty-year period, i. e., with not more than 25 per cent permanent depreciation.

"It will be noted that in all cases both the amortization and purchase funds increase so rapidly during the later years that the actual amount of initial intangible value has relatively little effect on the date of recapture, whereas within the next few years following the adoption of such a plan it would be of greatest importance in case the city desired to acquire the property.

"These studies assume no necessity for progressively retiring capital represented by intangible value within the first twenty-year franchise period—that is, that all bonds purchased for the sinking fund are held to maturity. If the serial plan of retirement is adopted, this will simply result in a higher sinking fund and a later date of ultimate

ability, to extricate itself from the embarrassment of inadequate purchasing power which limits its ability to expand its traction system and the company from the curtailment of its earnings due to expiring franchises. By means of this indeterminate, profit-sharing franchise, the great essentials will be secured: (1) continuous, adequate equipment and service; (2) extensions as required; (3) ultimate municipal ownership.

"I see no danger to the city of San Francisco in such a co-operative measure if carried out through a proper administrative body, and I believe that such a measure would represent the greatest step that has yet been taken in the solution of municipal transportation problems. I therefore most urgently recommend the resubmission of the necessary charter amendment and the negotiation of a resettlement franchise.

"And, finally, I desire to state that the longer the citizens of San Francisco delay meeting this situation squarely, with sound business judgment, the more crucial will become the chaos into which the city is drifting in its utility affairs. The ten years' traction war in Chicago and its solution in the form of the resettlement ordinances of 1907 form a striking example for every municipality confronted with these municipal problems."

TABLE II—ANALYSIS OF RESETTLEMENT PLAN 5

Assume, for the purposes of illustration only, the following values for the property:
 Initial tangible value\$21,000,000
 Initial agreed capital value..... 35,000,000

Year	Operation Less Taxes	Per Cent Distribution of Income			City and State	City's Share of Residual Net
		5 Per Cent Return on (B) and 45 Per Cent of Residual Net	Company's Total Share—	Company's Net Share, 5 Per Cent Return on (B)		
1914	62.0	24.8	20.6	10.2	5.2	
1920	62.0	25.0	20.8	10.1	5.1	
1925	62.0	24.2	19.5	10.7	5.7	
1930	62.0	23.7	18.7	11.2	6.2	
1935	62.0	21.9	15.2	13.1	8.1	
1940	62.0	21.9	15.2	13.1	8.1	
1945	62.0	21.9	15.2	13.1	8.1	
1950	62.0	21.9	15.2	13.1	8.1	

Per Cent Return on Investment.

(A) Actual investment or cost to reproduce property new.
 (B) Agreed capital value.

Year	Net Receipts 30 Per Cent of Gross Receipts		Company's Total Share— 5 Per Cent Return on (B) and 45 Per Cent of Residual Net		Company's Net Share, 5 Per Cent Return on (B)		City and State		City's Share of Residual Net	
	(A)	(B)	(A)	(B)	(A)	(B)	(A)	(B)	(A)	(B)
1914	11.4	7.3	9.4	6.0	7.8	5.0	3.9	2.5	2.0	1.26
1920	9.7	7.2	8.1	6.0	6.7	5.0	3.2	2.4	1.6	1.22
1925	9.8	7.7	7.9	6.2	6.4	5.0	3.5	2.7	1.9	1.47
1930	9.8	8.0	7.8	6.4	6.1	5.0	3.7	3.0	2.0	1.67
1935	9.9	...	7.2	...	5.0	...	4.3	...	2.7	...
1940	9.9	...	7.2	...	5.0	...	4.3	...	2.7	...
1945	9.9	...	7.2	...	5.0	...	4.3	...	2.7	...
1950	9.9	...	7.2	...	5.0	...	4.3	...	2.7	...

recapture. In any such resettlement plan the city may obtain the greatest advantage by utilizing its full share in a cumulative fund for recapture. On the other hand, if the city applied its share to the building of extensions without further bond issue, it would realize only a partial return on this non-interest-bearing investment in these extensions as compared to a full return on these same extensions if financed by the city through the purchase of the company's bonds.

"If an investment ratio of \$3.50 to \$1 additional earned were established for future investment in the property, this would result in deferring the date of recapture shown in Fig. 2 by about four years—i. e., to 1945—and in Fig. 3 by about five years, or 1948.

RETURN ON INVESTMENT

"The estimated returns (Table II) indicate that the extended property would be able to earn a rate of return on the probable tangible value approximating 10 per cent in 1930, or 8 per cent on the agreed 'capital value'; that the company would receive a return of over 7 per cent on tangible value, and that the city would derive in cash return, exclusive of taxes, as high as 2 per cent on tangible value.

CONCLUSIONS

"In the foregoing I have attempted to show that only through a resettlement will the city be able, in all prob-

ability, to extricate itself from the embarrassment of inadequate purchasing power which limits its ability to expand its traction system and the company from the curtailment of its earnings due to expiring franchises. By means of this indeterminate, profit-sharing franchise, the great essentials will be secured: (1) continuous, adequate equipment and service; (2) extensions as required; (3) ultimate municipal ownership.

ANALYSIS OF FINANCIAL AND OPERATING RECORDS

After a discussion of service and routing in which the report considers methods for relieving lower Market Street and recommends methods of re-routing, the subject of rolling stock is taken up, and the report recommends a narrower car and a narrower devil-strip. The purpose of this recommendation is to permit two lines of vehicles between the car and the curb instead of one as at present. These changes could be introduced, of course, only gradually in extensions and rehabilitation work.

Considerable space is then given to an analysis of the financial and operating records of the company. The report says that in this work no attempt was made completely to audit and examine the internal details of finance, the stability of the sinking fund and the integrity of the profit and loss account, "but rather to examine the financial machinery with reference to its efficiency for perpetuating a railway property able to render adequate service and provide the general stability of the true investment." An abstract of the general summary of the author's analysis of the company's financial and operating records follows:

"The transportation business in San Francisco as a whole is unusually profitable, due to very short haul and high riding habit. It should net over 6 per cent on \$40,000,000, or 10 per cent upon a more conservative investment figure of \$25,000,000, even with an operating ratio as high as 70 per cent, i. e., including all proper charges against income as discussed and recommended herein.

"The net income in 1911 totaled 6.8 per cent on the \$40,000,000 bonded debt, while the average interest rate actually paid on \$47,454,000 first lien securities was 4.84 per cent, including dividends on \$5,000,000 first preferred stock (none has been paid on preferred and common since 1906). The property has averaged a net income of 3 per cent on a total capitalization of \$80,000,000 since the consolidation. But under present conditions this excess capitalization cannot hope to earn a return as contemplated in the reorganization plan, except to result in such poor service as to defeat the purpose of such a move.

"The present corporate organization, as a means of unifying some twenty scattered competitive properties, is justifiable from an economic standpoint in the production of maximum service at minimum expense. But with no preparation for grave contingencies such as an ever-possible strike, the developments of late years have resulted in depreciation of securities and the forced issuance of high-rate loans or the equivalent superimposing of preference securities. This capital shortage resulting from deprecia-

tion accruing prior to the fire is distinctly due to the company's failure to provide out of income of profitable years adequate reserves for this purpose in the form of cash or negotiable assets. Losses in earnings from the fire and strike aggregated nearly \$5,000,000 for the period covered by these two disasters and resulted in an annual setback of at least \$1,000,000. Of this total loss at least two-thirds is due to the strike alone. The property loss, with the exception of track and overhead in certain parts of the city, was practically covered by insurance.

"Since the consolidation of 1902 the company has expended about \$10,000,000 for 'betterments' and some additions to property (excluding bond discount), but approximately half of this has been capitalized. Future betterments should be financed out of income without increased capitalization until the property has caught up with itself in the matter of deferred renewals due to depreciation, obsolescence or inadequacy. Extensions and additions may justly be capitalized. But the only way of increasing the value and stability of the business is to build up the property out of earnings, thus gradually reducing the intangible elements.

"An average depreciation reserve of 3 per cent has been maintained since the consolidation. None was charged off between 1906 and 1909. The rate of 6 per cent of the gross earnings per annum now established (1910, 1911) may be fair for the property under normal conditions, if enough is spent upon maintenance, and should be continued on a cumulative basis. But a higher reserve will be necessary for some years—probably 8 per cent—until the property is reclaimed from its present run-down condition. A depreciation and renewals reserve should be always available as cash or quick assets and charged against income as a more or less fixed element of the operating account.

"The annual appropriation for maintenance (repairs and upkeep) has remained practically constant at about 12 per cent for ten years, except for 1906-7. Owing to increased efficiency resulting from consolidation of departments, the equipment is in better condition now than at any time since the fire, but the poor condition of the track and roadway requires additional maintenance and renewal. A total appropriation of 12 per cent represents probably the minimum for this system for the next few years, in addition to 6 per cent minimum depreciation reserve. This total of 18 per cent for these two items, I believe, is ample, but the division, if any is made, should be different, i.e., maintenance about 10 per cent and renewals about 8 per cent.

"The sinking fund on United Railroads 4's was established on about the usual basis for a long-term franchise but is correspondingly inadequate for short terms unless franchise extensions could practically be guaranteed. Under existing conditions, a sinking fund retiring nearly 50 per cent of the debt is needed—sufficient at least to retire the fixed property in the streets that would either revert to the city at maturity or be sold on a salvage basis. The United Railroads 4's sinking fund will retire only about one-third of the entire issue at maturity, assuming its investment entirely in these same bonds at market value.* The retirement by this method is exceedingly advantageous, as the present price secures about a 6 per cent interest rate to the credit of the fund. The sinking fund on the Market Street Railway 5's (1924) can retire only about one-sixth of the issue at maturity, provided there be no further increase in outstanding bonds of this series, \$10,000,000 of which are yet unissued.

"Net income over and above interest has decreased by one-half since 1902, owing to an increase in both operating expenses and fixed charges, principally the latter; likewise, the balance available over sinking fund due to increased

annuities. The so-called 'surplus' available for dividends decreased from 15.5 per cent to 4.5 per cent and was about sufficient in 1911 to carry the first preferred stock, assuming depreciation charged against earnings in the usual manner.†

"The net operating ratio, now 54.5 per cent (or 65.7 per cent including taxes and depreciation), is about the same as ten years ago, although it had decreased to 45.7 per cent in 1906. It now again shows a tendency toward decrease. With the increased maintenance and car service necessary, an operating ratio of 70 per cent may very probably have to be considered as a future standard, if any substantial share in the earnings is to come to the city through a re-settlement. Thus, with 18 per cent maintenance and depreciation and the balance (difference between 65.7 per cent and 70 per cent, or 4.3 per cent) available for the city's share and a possible bonus to employees, the business for 1911 would have paid 6.3 per cent return to the company on its outstanding bonded debt of \$40,000,000.

"The cost of power in San Francisco is high, partly on account of the power consumed on steep grades, but also by reason of a high-priced contract for power forced upon the company after the fire and strike. However, the company is now purchasing its supply at a rate probably as reasonable as it could produce it for in its own power house and is using this power efficiently under the prevailing conditions.

"Taxes in per cent of gross have been reduced materially since 1902 and also since 1910 by reason of the corporation tax law which went into effect at that time. While the total proportion of taxes is considerably less than Eastern companies are called upon to bear, the city itself receives less than 1 per cent directly. It thus appears that a more substantial city's share in the transportation business of San Francisco, whether taken in the form of revenue, increased service or otherwise, is not unreasonable.

"The relative platform expense, in per cent of gross earnings, is comparatively low at the present time, 17.85 per cent, and is decreasing, due to increased speed and density of travel. This has been accomplished with a cost per car hour considerably higher than in any of the Eastern cities and exceeded only in one instance on the Coast. While this indicates effective construction of time schedules for trainmen, it is also true that the service at the present time is probably at a minimum, and with the increase in car mileage now required, the platform expense will have to be increased unless a corresponding saving from re-routing can be effected. The average wage has been increasing yearly since 1908 and is now the same as before the fire, 26.9 cents per hour.

"The time schedule for trainmen has been worked out for an average operating day of ten hours. In spite of the short-time demands of the rush hours, only 5.6 per cent of the men are paid for less than nine hours, and 22.4 per cent work over eleven hours. There is no minimum wage. It is apparent that any material reduction of the hours of labor, fixing of maximum time limit, or of a full day's pay for short-time service would necessarily result in a large increase in platform expense. Thus the present charter wage scale if adopted by or if forced upon the company would probably increase this expense by one-half, which is practically out of the question with a fixed 5-cent fare.

"The accident account expense from injuries and damages is extremely low—under 3½ per cent, as compared with 5 to 8 per cent in Eastern cities. This undoubtedly reflects

†Theoretically, it is not proper to consider this sinking fund annuity as surplus available for dividends until the funded debt retireable by these annuities is actually canceled and the liability removed. Although every dollar of annuity eventually releases a credit equity of \$1 in the form of capital asset, the net result of the operation of the sinking fund is simply to transfer gradually an equivalent equity in the property from the bondholders to the stockholders. And until this transfer is consummated dividends cannot properly be declared on surplus created from sinking fund except as scrip or stock dividends that may be realized at maturity. Until the original liabilities are retired the equivalent equity does not appear and never represents cash assets. The borrowing of money to pay such equivalent dividends is questionable policy under present conditions."

*However, the deed of trust does not specifically state that investments be made at market price when below par. And it is understood provisions in other of the underlying sinking funds are also loosely drawn."

to a certain degree the excellent climatic conditions from a railway operating standpoint as well as good maintenance and operation.

"A condition greatly favoring the company is the comparatively small seasonal variation in travel as compared with Eastern cities. This, in addition to the uniform climate, relieves the company of the capital burden of carrying additional summer equipment for use during only a part of the year. Obviously, this condition should make it possible for the company to render correspondingly better service.

"The average revenue fare or unit of income has remained practically constant at 4.97 cents. Some dilution arises from school tickets, passes and free transportation to certain municipal employees. The average income per total passenger is reduced by transfers to 3.47 cents, but this fact has no material bearing upon the earning capacity of a system holding a practical monopoly, for the reason that every fare is retained in full wherever it may originate in the system. Nearly half of the revenue passengers avail themselves of the transfer privileges, which are very liberal, in fact could be very properly curtailed in some respects without discommoding honest patrons, in order to prevent 'loop riding.'"

SUPPLEMENTARY DISCUSSION OF RECORDS

In the detailed discussion of the financial records the report discusses the true earning capacity of the property and urges the necessity of considering depreciation as an actual cash reserve out of income. This means, the report explains, that unless corresponding credits were properly available for the stockholders from sources other than actual income, these excess dividend declarations could not have been founded upon true earning capacity of the operating property.

The report then commends the condition of the car maintenance, but considers the track and roadway maintenance as abnormally low although increased from \$630 per mile of track in 1903 to \$1,100 per mile in 1911. It believes that the appropriation for track and roadway will have to be increased to at least 5 per cent of the gross earnings, which in 1911 would have amounted to \$1,500 a mile, or 1.6 cents per car mile; that the way and structures depreciation should amount to 6 per cent of the gross earnings, or about

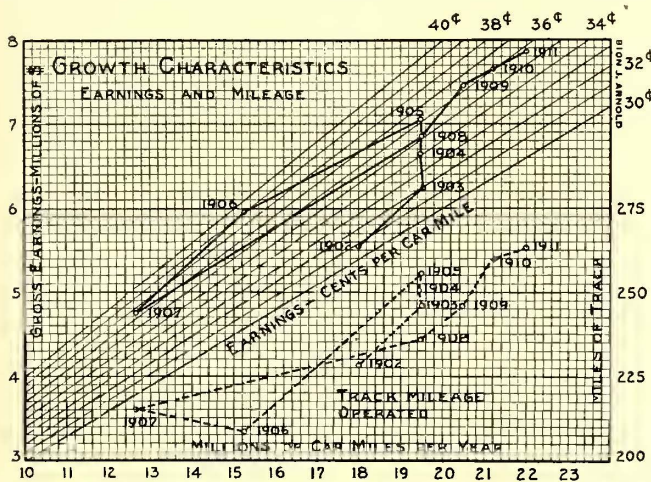


Fig. 4—San Francisco Report—Growth Characteristics

\$1,800 per mile of track, and that the total cost of maintenance should be 12½ per cent of the gross earnings until the property is built up.

Platform wages have continuously decreased from 23 per cent in 1901 to 17.85 per cent in 1911, although an increase in the average wage per man has occurred since 1908. The average wage is now the same as before the fire, 26.9 cents per hour, with a maximum of 33 cents after eight years' service.

The high earnings of the property of \$30,000 per mile of single track is attributed partly to the fact that the system has not been extended to keep pace with the population and partly to the exceptionally high riding habit in San Francisco, which results in 1911 in earnings of over \$18 per capita for the United Railroads alone, or, including all systems, about \$20 per capita.

Fig. 4 shows the growth characteristics of the earnings and mileage. In this diagram one point indicates for each

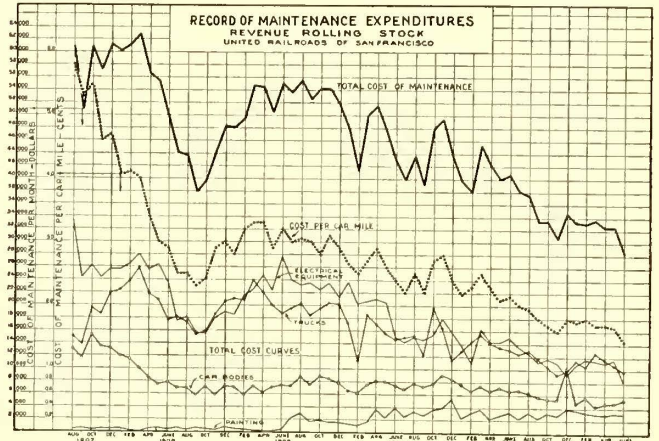


Fig. 5—San Francisco Report—Car Maintenance Costs

year the earnings, car mileage and also earnings per car mile (the latter being shown by the diagonal reference lines). The direct rise from 1903-5 shows that the earnings increased while the car mileage remained practically the same. From 1908 on, earnings and car mileage have increased proportionately—i.e., practically following the diagonal of 36 cents per car mile. Both should increase proportionately, unless a radical change in size of equipment should take place. In each of the two respective periods noted—1903-5 and 1908-11—practically the same character of equipment was operated. Similarly, track mileage has shown erratic growth as compared with car mileage operated.

CONDITION OF PHYSICAL PROPERTY

A chapter is devoted to this subject. Referring to the maintenance record, the report says that while there has been a decrease in car maintenance amounting to 40 per cent in two years there has been an increase of 10 per cent in mileage, making an equivalent saving of more than 50 per cent. This has not been done at the expense of the rolling stock, which is in good condition. Armature removals per car mile have decreased 12 per cent, and their cost has decreased 30 per cent. The car miles per pull-in have increased 75 per cent. On the other hand, the track needs extensive repairs. Fig. 5 shows a record of car maintenance expenditures from August, 1907, to date.

ANALYSIS OF THE ESSENTIALS OF A FRANCHISE

The report says that Charter Amendment 34, "as an enabling act, contemplated that individual franchises should conform to a general franchise ordinance drawn under its provisions. Following is an abstract of some of the essential requirements which, in Mr. Arnold's judgment, should be incorporated in such ordinances. The general premises assumed in the recommendations are: ultimate municipal ownership but unified operation with a uniform fare and universal transfers; gradual acquisition and ultimate recapture of complete property assisted by decapitalization; underlying property considered as a continuing investment; municipal control of service, equipment, operation and audit; profit-sharing plan with compulsory extensions proportionate to earnings.

NEW OR ORIGINAL FRANCHISES

In new or original franchises in San Francisco the report lays down the following as essentials:

"1. Indeterminate form of franchise with continuing

option for recapture by city by assuming underlying debts not exceeding depreciated value of physical property at date of purchase; surrender of present determinate franchises obligates the city to regrant on the indeterminate plan under agreed conditions specified therein.

"2. City bonds to be acceptable to company for part or entire payment, secured by the general credit of the city or by the earnings on the property.

"3. Adherence to the present length of franchise term—twenty-five years; extension to a maximum total period of forty years permissible in the event franchise is not recalled by the city purchasing or finding a purchaser for the property.

"4. Utility bonds covering underlying debt to be permitted to mature between these two periods under guaranteed assumption of underlying debt by the city at any prior purchase.*

"5. Corporation fully to decapitalize out of earnings during its franchise term all elements of intangible value, depreciated or otherwise permanently extinguished, and a proportion (increasing with the length of the term) of the tangible value.

"6. Recapture proceedings to include an arbitrated valuation of property, or else an agreed value; the chief arbitrator in case of disagreement to be selected by the State Railroad Commission, or finally by the Supreme Court.

"7. Purchase price at any time to include 'present value' of property and plant (including such intangible elements as interest during construction, early losses, brokerage or bond discount and a graduated purchase bonus) minus values retired by sinking fund or accruals thereto; indeterminate franchises disregard franchise value, good will, going value, etc.

"8. If city exercises its option to purchase during franchise term, company to receive a bonus decreasing from a maximum of 20 per cent above the cost of producing the property new as governed by the terms of the franchise by equal yearly steps to zero at expiration, less the amount accumulated in the amortization fund to date of purchase, at which date the city will also receive, without cost, the amount then accumulated in the renewal fund, care being taken by the city at the time of granting the ordinance to see that suitable maintenance and renewal funds are established sufficient to maintain and keep the property in first-class condition; the initial bonus to be increased to 25 per cent and similarly decreased if the property is re-sold or leased to private owners or operators.

"9. Sinking funds to be in the hands of a qualified trustee and invested by him in company bonds at market price when below par (when above par, subject to call at stated premiums) or in other safe investments.

"10. Extensions, their necessity and reasonableness, to be determined and certified to by the commission when the operation of such extensions would fall within the limit of a reasonable return on the entire investment.

"11. Rental value of extensions built by the city to be determined by the commission, such extensions to be maintained by the operator.

"12. Appraised value of equipment provided by the company (cars, overhead and underground transmission) to be assumed by the city as part of an extension acquired, provided that it be adequate for the service and in good operating condition.

"13. Short extension and connecting franchises to be granted upon certification by the commission without referendum.

"14. All extension franchises to expire simultaneously with connecting franchises; conditions and obligations of

extension franchises to conform in general with those of connecting lines, except where specifically exempted.

"15. Validity of franchise grants to be contingent upon the completion of construction work contemplated thereunder within three years (or less in some cases) and with continuous operation thereafter under conditions specified.

"16. Modification of obsolete conditions and unreasonable obligations imposed in original grants, or exemptions from percentage franchise taxes or other conditions in the case of non-paying extensions, to be permitted when necessary at the discretion of the commission.

"17. Income from extensions to be assumed as that proportion of the total earnings of the route connecting therewith which the car mileage over the extension bears to the total car mileage of such connecting route; this mileage to be determined from official schedules filed with the commission. Operating expenses to be averaged over the entire mileage of the system.

"18. Fixed conditions, such as income distribution, except the divisions to city, company and labor as fixed in the ordinance, reserves, type of motive power, routing, headway, and other variables, to be readjusted from time to time with the consent of the supervisors upon proper verification of the necessity therefor by the commission.

19. Distribution of income to be applied in the following order: (1) direct operating expenses* and taxes; (2) reserve for renewals to cover permanent shrinkage due to normal wear, depreciation, obsolescence, inadequacy, etc.; (3) reasonable interest return on investment (or in the case of resettlement franchises, a basic return on 'agreed capital value'); (4) amortization fund for decapitalization of intangible and tangible investment; (5) contingent reserve fund for providing for lean years and other emergencies;† (6) balance or residual net to be shared by company and possibly by city, with some provision for employees' bonus, pension and disability fund.

"20. In order to avoid delays and brokerage, and upon authorization by the commission, cash reserve funds for renewals or amortization (but not accident fund) may be used temporarily to meet unexpected, unavoidable or extraordinary demands for money necessary to place the railway property in operating condition as it existed prior to any accident caused by earthquake, fire or other acts of God, and provided further that the commission shall at the time such loans are made see that ample security is provided for the safe return to the amortization fund of all the money so borrowed from said fund, and to the renewal fund the amount expended out of said fund in excess of the actual accrued depreciation (to the date of the accident) of the property destroyed. The difference between the original cost of the property destroyed and the accrued depreciation (to the date of the accident) plus salvage shall be taken from the contingent reserve fund (5) defined in the next preceding paragraph of this chapter, and in case said fund (5) is not sufficient to meet the loss, the difference between said loss and the amount in said fund (5) shall be taken from amortization fund (4) described in the same paragraph.

"21. No franchise or property acquired thereunder to be sold, leased or otherwise disposed of without the city's consent and recommendation by the commission.

"22. Forfeiture of franchise to be the penalty for substantial failure or refusal to comply with conditions therein not due to causes beyond the company's control, this penalty to involve recapture of both franchise and property by the city without cost, subject to court decision.

*Including maintenance and insurance but excluding taxes and depreciation."

†"This fund should be accumulated monthly by appropriating a comparatively small percentage of the gross receipts, and when it reaches a certain maximum amount as agreed in the franchise, all additions to it thereafter above this amount can then be used at the discretion of the board of control for any or all of the following purposes: (a) to improve service, (b) to reduce capitalization, (c) to reduce fares, or (d) to be divided between city and company upon an agreed basis."

*"Bonded investment might be limited to not over 75 per cent of the reproduction value of the property new, balance to be made up by issues of preferred stock, carrying a sufficiently high return rate to bring the price near par; subsequent issues to cover possible extensions to be financed on the same basis or else the difference between bonds and total cost to be made up out of earnings from time to time."

"23. On final expiration of franchise, all fixed property in the streets then to revert to the city except additions made by order of the commission during the last five years and except unamortized renewals and betterments during this period; these to be purchased by the city at an agreed or arbitrated value.

"24. City to have power of entry and supervision of audit of all company's property and books, the commission to conduct such supervision of finances, operation, service and equipment as it deems necessary for the protection of both public and investors.

"25. Profit-sharing with the city to be voluntary with company, in lieu of which a proportionate return to the city is to be secured through franchise taxes on gross receipts, the franchise to be awarded to the highest bidder.

"26. Right-of-way to be maintained in such condition as not to damage abutting pavement; franchise obligations in this regard to be construed in such a manner that the right-of-way paving may be in at least as good condition as the street paving; in default of which the city may order repairs at the expense of the grantee, after reasonable notification.

"27. Company to be relieved of special obligations constituting a drain upon income not properly a direct charge thereto, such as street lighting, free transportation, etc.

"28. Company to be assured protection against avoidable obstruction of its rights-of-way through adequate enforcement of traffic-regulating ordinances.

"29. Impounding of reserve funds, established for and accruing to the benefit of the city in the decapitalization of property, to be provided against in the event of receivership proceedings.

"30. Wages and conditions of labor to be adjusted from time to time through the mediation of the commission as arbitrator or automatically through the disbursement of the employees' benefit fund.

"31. Exemption clause to be incorporated permitting resettlement of existing franchises under specific conditions subject to the approval of the commission and the voters."

RESETTLEMENT FRANCHISES

For resettlement franchises the author makes some supplemental recommendations based upon the theory that in its present municipal railway system the city will follow a policy of co-operative development rather than competition, with the object of ultimate incorporation of the municipal railway into a unified system through purchase or lapse of existing franchises.

In regard to the present company, its recognized capital investment for resettlement purposes is to be the appraised depreciated value of operative property at the date of appraisal plus full value of betterments and additions made between date of appraisal and date of settlement (if these dates are within one year of each other, but if more, depreciation on said betterments and extensions to be deducted) and including such initial intangible values as reasonably represent the then (date of settlement) present value of franchise earning power, considering the property operated to expiration under reasonable conditions of up-keep, service and return on investment. The purchase price to the city at any time is to be the value thus obtained, less the reserve fund accruals, plus the percentage as described in paragraph 8 on the previous page under "New or Original Franchises."

It is also proposed that the company shall decapitalize out of earnings all initial agreed intangible values, plus permanent shrinkage in value due to depreciation, during the first franchise period of twenty years. Thereafter it is to decapitalize depreciation and all value represented by fixed structures in the streets and real estate used in the operation of the road, provided, however, that the company shall have the right to purchase said real estate, at the value which is fixed in the appraisal upon which the ordinance was based.

GENERAL DISCUSSION OF FRANCHISE PROVISIONS

The report warns the city that apparently it has no power to compel the present company to make extensions. Therefore, if adequate service is maintained the United Railroads may continue to operate to the end of its franchise term without making any extensions. In fact, under the present onerous conditions of the present charter provisions it is practically debarred from making any extensions.

LIMITED FRANCHISE TERM

In discussing this subject the report says that: "Although a franchise term limited to twenty or twenty-five years is desirable from some points of view, it must be recognized that there are definite limitations to the company's ability to retire its invested capital within such short periods. The necessary investment will be at least \$3, and possibly over \$4, per dollar of annual income. Therefore, with the fare fixed and a minimum operating ratio, the per cent of income that may be diverted to sinking fund is limited. To retire \$100 in twenty-five years requires an annuity of \$2.74 when earning 3 per cent and \$2.10 when earning 5 per cent, compounded. Therefore a reserve representing from 6 to 11 per cent of the income would be necessary to retire the capital alone, neglecting entirely the reserve of 6 or 8 per cent necessary for depreciation and 10 or 12 per cent for maintenance. For complete retirement in sixteen years (that is, by 1929) from 13 to 20 per cent of the income would have to be reserved. These figures represent the practical limitations that prevent the investment of capital in short-time franchises unless some provision be made for the city to assume at the termination of the franchise the underlying funded debt representing actual property in the streets, or in lieu thereof automatically to extend the franchise term for a sufficient period to permit of the property paying for itself with a reasonable sinking fund. It would then be possible, within a comparatively short franchise term, for a railway company to decapitalize all that portion of its investment representing intangible value or property extinguished through depreciation or inadequacy.

DECAPITALIZATION

"The city charter permits municipal bond issues running for seventy-five years with sinking-fund payments deferred for eighteen years, thus leaving fifty-seven years for actual decapitalization. And even with a revenue-producing investment such as water works, it is the practice to decapitalize by long-term bonds.

"A street railway should be regarded as a continuing investment, as distinct from a property operated to extinction such as an investment based on coal-mining rights. And any plan of operating to extinction a permanent utility, revenue-producing, as with a short-term franchise, is preposterous from an economic standpoint, especially under the limitations of a 5-cent fare. For it is evident that any utility, similar to the United Railroads property, once established must continue operation irrespective of ownership.

"This fact has been recognized in Charter Amendment 34, wherein it becomes the first duty of a private utility to decapitalize out of earnings within twenty years such original intangible values as bond discounts, interest during construction, early losses, promoters' profits and all permanent shrinkage in values due to wear and obsolescence, leaving a residual 'present value' representing probably 75 per cent of the reproduction value new. After the cycle of life of the longest lived part of the property has been reached, this condition may then be maintained permanently by proper expenditures for repairs, renewals, and extensions, and will suffice for a high-grade operative growing property."

PROVISIONS FOR LABOR

The provisions for admitting labor into the profit-sharing plan contemplated in Charter Amendment 34 "recognize the fact that the present unrest and enormous economic losses from strikes may be mitigated or entirely removed by establishing a bonus for labor in the form of a benefit fund for sickness, accident, death, old age or other disabilities, and

also for a bonus to be distributed among the employees for faithful and meritorious service, as determined by a merit system of discipline. Such a plan is now in operation in Philadelphia, by which labor is practically guaranteed a minimum wage during lean years and participates in the profits of good years in addition to an insurance fund against disability. This plan has been improved upon herein by including not only trainmen but all employees receiving a wage of \$1,500 per annum or under.

"With a flexible fare it would of course be possible to pay any rate of wages within reason, but with a fixed fare the limitations of the income and necessary expenditures place an absolute limitation upon wages as well as upon all other expenditures necessary to produce a unit of service.

"The present charter fixes the condition of municipal employment, irrespective of the conditions of service, at a minimum wage of \$3 for an eight-hour working day and overtime at an advanced rate of 50 per cent. But for private companies an additional burden is imposed by limit-

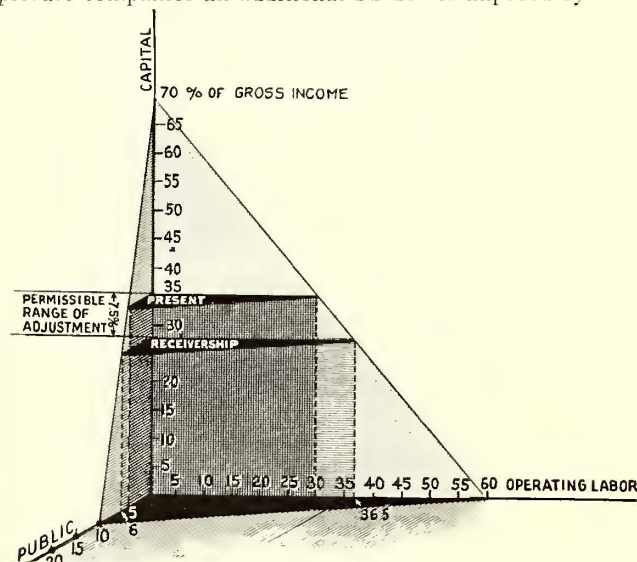


Fig. 6—San Francisco Report—Graph Showing Proportional Return to City, Company and Labor

ing the maximum day's work to ten hours' total elapsed time. Under the above-named conditions of riding habit, this wage scale becomes unquestionably prohibitive and has been so recognized in Amendment 34 on the ground that the riding habit of the people cannot be reorganized by any kind of legislation.

DISTRIBUTION OF RETURN

"The present situation may best be appreciated from the diagram of income distribution, Fig. 6, showing the possibilities of varying the return to the company, labor and city respectively. During the calendar year 1911 income was distributed thus:

	Per Cent
Company received in fixed charges.....	35
Labor received in wages	30
City and State received in taxes	5
Public received in service (other operating expenses).....	30
Total	100

Deducting 5 per cent from the company's share for sinking fund, equal parts of the income were shared by labor, company and public; or, including taxes, the public received the largest share in actual return from operation of the property.

From the income distribution graph, Fig. 6,* the effect

*The graph, Fig. 6, may be more easily understood if the reader will consider the left-hand side of the tetrahedron illustrated to be folded back so as to be in the same plane as the right-hand side. The diagram then becomes a plane triangle, whose base equals its height. In any triangle possessing this relation the sum of the base and height of any rectangle inscribed within the triangle is equal to the height of the triangle; hence the sum of the base and height of any inscribed rectangle is equal to the sum of the base and height of any other inscribed rectangle.—[Eds.]

of reducing the company's return by increasing proportionately those of labor and public will be clear, together with the permissible range of increase before the company is thrown into a receivership. This range is comparatively small, $7\frac{1}{2}$ per cent, which corresponds to a reduction of only about 2 per cent in return upon actual investment. This graph simply illustrates the fixed elements of a profit-sharing plan, which to be effective must be based upon a fair distribution.

VIEWPOINTS OF PRIVATE OPERATORS

Mr. Arnold adds: "From my studies on this subject in San Francisco and other cities, I believe the following conditions should be acceptable by enlightened railway executives in a resettlement plan such as proposed herein:

"1. Decapitalization of intangible values (including the depreciated value represented by the difference between the cost of the property new and the best condition in which it can be maintained) out of earnings during a twenty-five-year franchise term and within forty years, at least so much of the property as is represented by fixed structures in the public streets as well as the depreciated value above noted; city, if it purchases, to assume the underlying funded debt (not exceeding the value of the physical property); corporation to accept city bonds in part or total payment therefor.

"2. Equalization of franchise term for both extensions and trunk lines; future extensions to be initiated by the company or city as required by district development so far as permitted by the net earnings necessary for recovering the investment during the franchise term; company to continue operation under an indeterminate franchise until bonds mature if city does not elect to purchase the property before.

"3. Ordinary minor franchises for extensions to be passed upon by the Public Utilities Commission in order to save expense and delays; trunk-line franchises only to be submitted to referendum; possible dividing line to be drawn whereby all franchises involving construction expenditures in excess of \$75,000 or \$100,000 should be voted upon.

"4. Higher money rates and consequent return on investment becomes necessary if the city follows a policy of destructive competition; a regulated monopoly is preferable, whether or not ultimate municipal ownership is contemplated.

"5. Profit-sharing plan acceptable, except one involving property interests of employees which would give legal title to interest in property without corresponding financial responsibility; discipline is imperative, and an employees' bonus fund based upon the merit system (including an insurance fund for disabilities and contingencies) would be more satisfactory.

"6. The ideal municipal ownership plan favored; city to own the property and lease to the highest bidder, who operates, maintains and renews it out of earnings; unearned increments in physical value thus accrue to the city in the form of higher rental values.

"7. In case no commission is created, the city may very properly have direct representation in the directorate of the operating companies, to the extent of one-third of the voting power, in order to protect its share in the residual income of the property under a profit-sharing plan."

An announcement made recently to the effect that the Pittsburgh, Cincinnati, Chicago & St. Louis Railway will cease the operation of "dinky" trains between Louisville, Ky., and Jeffersonville, Ind., retaining only its service to New Albany, indicates that the traffic is practically in the control of the Louisville & Southern Indiana Traction Company and the Louisville & Northern Railway & Lighting Company, which operate electric railways between the three cities. It is conceded that the electric railways have practically driven the steam road, originally the only means of communication, out of the business as a suburban carrier.

TABULATING STATISTICS AND ACCOUNTS BY MACHINERY

The Portland Railway, Light & Power Company, Portland, Ore., has adopted the Hollerith tabulating machine to a large number of uses in tabulating electric railway and light accounts and statistics. This machine was originally devised for use in tabulating statistics for the Census Bureau, and its general principles in connection with that work

woman after a little training. The company used 70,000 of these cards a month in all of its departments, yet the entire force required in the recording and tabulating department is only about half a dozen clerks. Without the machines it would require a force of about seventy-five clerks to obtain the information now derived by this system.

THE USES OF THE CARDS

A glance at the heads of the columns on these cards will readily disclose some of the uses to which they can be

Mechanical Tabulation—Card Used for Recording Data of Shop Supplies

Mechanical Tabulation—Card Used for Recording Data of Shop Labor

have received some publicity. Briefly, when applied by the Census Bureau, the record of each individual was stamped in a card by a series of punch-holes. These cards were then put into sorting and tabulating machines which would count the cards and give the totals for each kind of punch-hole on the cards or for any combination of them.

put, but the full significance and value of the plan can be grasped only by following out a few of the groupings possible. Thus by setting the sorting machine to sort the cards by car numbers the aggregate shop cost in labor and material during any given time for each car can be determined automatically and quickly. Or if the cost of any particular kind of work, like winding field coils, is desired, that can also be obtained by running the cards through the machine again and setting it to catch and record that particular kind of work. Set in still another way the number of hours spent by any individual employee upon any particular class of work or upon all kinds of work can be obtained. Again, the company finds the system very useful in checking its pay-rolls by departments, and it also gets thereby a daily check by totals of the different shop orders. Indeed, it would be difficult to place a limit on the possibilities of this system of tabulation.

For some time the Portland Railway, Light & Power Company has been using this system of cards in its electric lighting and power accounts, and by this means it has been able easily and rapidly to determine at any time the total number of its different classes of customers, the rates paid by them, the service taken by them, etc. Recently, however, the company has also been using the same system to tabulate its electric railway statistics and accounts, and it has experienced equally satisfactory results.

APPLICATION OF ACCIDENT STATISTICS

Another application of the system is to the tabulation of accident statistics. The same general method is followed as with the shop accounts; that is to say, a Hollerith card is punched out to correspond to each accident report. A fac-simile of this accident card is not reproduced in this article because it is similar to the two cards already de-

One application of the system has been to the shop accounts. For this purpose two cards are employed, one for the labor account, the other for the supplies or material account. Both cards are shown by engravings. To illustrate their use better, the corresponding "requisition for material" and "shop time card" are also reproduced. These two latter forms are filled out in the usual way, the headings of the different columns on each being self-explanatory. At the end of the day these forms are sent to the tabulating department, where the information on each is transferred to a Hollerith card, which has columns for the date, department, car, code number (or class of car), kind of work

Mechanical Tabulation—Requisition for Material

Mechanical Tabulation—Shop Time Card

(also shown by a code number), account order, etc. In the case of the labor card, a code number has also been adopted for each employee. This appears on the labor card. The company does not need to use the entire space on either of these Hollerith cards for records, so that the two last columns of figures on the supplies card and the eight last columns of figures on the labor card have no significance.

The work of transferring these records to the cards is slight and can be done very rapidly by a bright young

scribed except in the headings for the columns. These headings are: accident number, month, division, class, line, type of car, fender, responsibility, service, location, settlement, expense. These cards, like the others illustrated, are capable of being sorted by the machine in any way desired. Thus the machine will show promptly the cost during any particular month or during twelve months for boarding accidents with each type of car used or for collisions with pedestrians with any particular type of fender. As yet the company has

not used the system so long in its railway work as in its lighting and power departments, but so far as the system has been applied to railway statistics it has been found very convenient and economical.

HEARING ON ILLINOIS BILL LIMITING HOURS OF LABOR

A bill limiting the hours of work of trainmen on street and interurban roads to ten hours within twelve consecutive hours has been introduced in the Illinois Legislature. If enacted, the measure will take effect July 1, 1913. Representatives of fifty-two electric railway companies in the State of Illinois attended a hearing on the bill before the House committee on labor at Springfield, Ill., on April 30. The principal argument against it was made by L. A. Busby, president of the Chicago City Railway, who showed that it conflicted with the terms of the accepted existing contract in Chicago and, if enacted into law, would have a serious effect.

Mr. Busby said that the proposed legislation directly affected every citizen of Illinois, investments aggregating several hundreds of millions of dollars and upward of 30,000 employees. Speaking directly for the companies which he represented—the Chicago City Railway, the Calumet & South Chicago Railway and the Chicago & Interurban Traction Company—he directed the attention of the committee to the fact that the investment represented exceeded \$60,000,000 and that it affected more than 5000 employees and a population of over 2,500,000.

Mr. Busby then outlined the history of the recent arbitration in Chicago as regards wages, saying that the question as originally submitted to the board included working hours, but the board found this subject and that of wages to be so closely allied that it suggested that the parties should first agree upon the hours of service and the board would then consider wages. This plan was adopted, and the agreement reached was in substance as follows: Twenty-seven and one-half per cent of all runs should be straight time; 52½ per cent of all swing runs should be completed within fifteen consecutive hours; the remaining 20 per cent of swing runs should be completed within sixteen consecutive hours. The company was to have one year within which to readjust its schedule. With the working hours so fixed, the board proceeded to determine the wage scale, and the award was announced on March 29, 1913, resulting in an increase of about 2 cents per hour, or a cash increase in wages during the period of the contract of approximately \$1,400,000.

Mr. Busby pointed out that this agreement by its express terms is in force and effective from August 1, 1912, to June 1, 1915, and is therefore in force at the present time, applying to all surface lines in the city of Chicago. Notwithstanding this, the Amalgamated Association had now gone to the Legislature and renewed its original demands in a more drastic form than ever, asking that the service be limited to ten hours and that this service be performed within twelve consecutive hours.

Mr. Busby then said that in Chicago the rush service in the morning began at 5.30 a. m. and lasted until 8 a. m., while the evening rush hours were from 4.30 p. m. until 7 p. m. During these hours it was necessary to have every available man and every car in service. It was impossible to cover the morning and evening rush-hour periods within twelve consecutive hours. The inevitable result of the act, if passed, under the existing contract requiring the payment of a minimum of nine hours, would be that the Chicago City Railway would probably have to employ 25 per cent more men than it actually needed and that the schedules would necessarily be so arranged that practically one-third of the men would be receiving nine hours' pay for four or five hours' work. Mr. Busby then called upon the representatives of the Amalgamated Association to explain how in good faith, after signing the contract, such a re-

quest could be brought before the Legislature without an express provision in the act that all existing contracts should be fully protected. Mr. Busby in conclusion offered to open the books of his company to the committee, if it desired to investigate the effect financially of the act upon the company, and to give any other information which the committee might deem necessary in reaching an equitable solution of this question.

A sub-committee was appointed which has the matter under consideration and will hold further hearings.

MEETING ON MAY 5

A hearing on the hours of labor bill was held on May 5 by the sub-committee.

L. A. Busby, president Chicago City Railway, said that he did not wish to complete his argument against the bill until a table that was in course of preparation could be finished. This table would show the number of accidents as compared with the number of hours of work of trainmen during a period of a number of years, demonstrating that accidents to passengers were not increased by the number of hours that trainmen were on duty.

W. W. Gurley, general counsel Chicago Railways Company, then made an extended argument against the bill. He said that the situation existing in Chicago was not of the making of the companies. The conditions were imposed upon them. Operations were conducted under the ordinances of 1907, which constituted the laws the companies must observe, and so they had no discretion as to their duties or obligations. The first duty was to transport passengers when they wanted to be transported and not when the companies wanted to carry them. Statistics showed that in the rush hours the Chicago Railways Company had 53 per cent of the entire twenty-four-hour traffic. The hours in which this proportion of the traffic was handled were from 6 to 9 a. m. and from 4:30 to 7 p. m. This interval of thirteen hours, with the work of getting the cars ready for operation and of getting them in after the expiration of this period, together with a considerable amount of traffic before 6 a. m. and after 7 p. m., constituted the normal working day of the railway company. The statisticians of the company said that it was impossible to consider practical efficient operation on less than a spread of sixteen hours, and this was embodied in the last agreement with the men. Those facts were inexorable. If a company was to observe the conditions of the proposed law, the only possible way would be to employ an enormous additional number of men. Statistics showed that it would require 24 per cent more men. This meant an increase in the wage scale of the Chicago Railways Company of \$750,000 a year. That spelled bankruptcy for the company, and Mr. Gurley thought that any serious pushing of the bill was not in the interest of the men. If it could be demonstrated that a company without inflated capitalization could not live under the law, then there must be something wrong with the law.

Mr. Gurley then explained the arrangement by which the capital stock of the company, nominal in amount, is deposited with a trustee and made the basis of issue of four series of participating certificates. The payments on series one were two years in arrears, and series two, three and four had never received any dividend payment. The sums the company had expended for rehabilitation were so large that had their extent ever been realized in advance no banker on earth would have been willing to finance the property. Over \$46,000,000 had been expended on rehabilitation and acquisitions of property in a period of five years, and still only 90 per cent of the work of rehabilitation was completed. It was thought in the beginning that an expenditure of \$12,000,000 to \$20,000,000 would be sufficient. The ordinance required the reservation of funds for renewals and damages, and it was necessary to comply with these provisions. The average daily working time per man was 9.45 hours under the present schedule. The company had been using every endeavor to make the conditions as

tolerable as the facts permitted. None of the conditions, however, was intolerable; and while the work of the trainmen was hard, no body of men in Chicago were more robust.

Williston Fish, general manager Chicago Railways Company, pointed out advantages enjoyed by the employees in Chicago as compared with those in other cities and emphasized the importance of the matter to the public as well as to the company and the employees. In Chicago there had been an increase from 188 rides per capita in 1892 to 315 in 1913. There was a normal increase every year of from five to ten rides per capita in a large city. The people, therefore, were vitally interested, and nothing should be done to lessen the effectiveness of the transportation facilities a company was able to provide. The Chicago Railways Company was operated as cheaply as a road of its kind could be operated. The maintenance expenditures had been kept at a low point, but they would be larger in later years. In the year ended Jan. 31, 1913, 23.48 per cent of all the income received by the company, or 23.96 per cent of the passenger receipts, had been paid to trainmen. In connection with his talk Mr. Fish mentioned the 5-cent fare which he said the companies had been retaining, although they had been giving more to the public right along in larger and better cars, better tracks and transfers, while the employees had received higher wages.

B. I. Budd, president Chicago Elevated Railways, showed charts indicating the rapid development and decline of the peak load on that system. Another chart, also presented, showed the number of cars in service during each hour of the twenty-four hours of the day. This diagram also showed the number of men in service, because the company had one man to a car. If the proposed law went into effect and the runs were changed as a consequence, Mr. Budd said that the results would be to the detriment of the operating conditions and the service rendered the public. Men would be deprived of an opportunity to do work that they desired to do in connection with picnics, excursions and special service of that character.

M. J. Feron, general superintendent of transportation Chicago Elevated Railways, stated that many of his men preferred swing runs, as they had gardens or wanted for other reasons to have time during the middle of the day. He also showed that the problem was to find work for the extra men so as to hold them for the rush-hour service.

E. C. Faber, vice-president and general manager Aurora, Elgin & Chicago Railroad, said that the rush-hour service on the third-rail division of that company was somewhat similar to that of the Chicago elevated and surface companies. At present twenty-one extra men were employed on the third-rail division, but under the proposed law it would be necessary to employ 110 extra men in order to give the same service. On the Fox River division thirty-two extra men were required now, while it would be necessary to employ 160 extra men to comply with the proposed law. Mr. Faber also stated that the company had a great many extra runs on Saturday, Sunday and holidays, and it was necessary frequently to use all of the regular men for one or two hours extra in order to accommodate the traffic at such times. The operation of the law would make it necessary for the company to employ 270 extra men, and it would be impossible to secure them for the wages that could be allowed, so that the public would suffer because of inadequate service.

J. R. Blackhall, general manager Chicago & Joliet Electric Railway, said that if the bill was passed the extra men employed by that company could not live on the wages they would receive. The company could not afford to pay men for a nine-hour day and get three hours' work from them. The company had extra traffic on Sundays and holidays, and it would be impossible to maintain a force sufficient to handle the excursions on those days in addition to the regular business. During the arguments on the subject of

the bill no suggestions had been made to show how the companies could make provision for the increased wages without an increase of burden. The Chicago & Joliet Electric Railway was operated at a loss and had been operated continuously under these conditions for years. In the early days of street railways the companies gave very little for a 5-cent fare, but for the ride that they did give then they received a full 5-cent fare, while now they gave more and better service and did not receive a full 5-cent fare because of the transfer privileges. The average fare now on the Chicago & Joliet Electric Railway was 3.8 cents.

F. W. Bull, of counsel for the Chicago & Milwaukee Electric Railroad, also argued against the bill.

The sub-committee will hold further hearings on the bill.

PLAN FOR CO-OPERATIVE BUYING IN PHILADELPHIA

Bulletin No. 15 just published by the Philadelphia Rapid Transit Company contains an outline of the steps the road is taking in establishing co-operative buying for the benefit of its trainmen.

The organization having most to do with co-operative work in the Philadelphia Rapid Transit Company is the Co-operative Beneficial Association, formed as of Nov. 1, 1912, a body of employees comprising a membership of about 7500. Membership in the association is entirely optional with the employee and is open to all males between the ages of eighteen and forty-five years after they have been six months in the service. The cost amounts to 50 cents initiation fee and 25 cents per month dues; the company contributes an amount equal to this and in addition pays all the expenses of the association.

Since the formation of this body the question of co-operative buying has been one much discussed, and finally on April 22 the report of an investigating sub-committee was unanimously approved by the co-operative committee, which is composed of representatives from the association and from the management. As a result of this, contracts have now been closed by the Co-operative Beneficial Association with Strawbridge & Clothier, one of the largest department stores of Philadelphia, and with the George B. Newton Coal Company, one of the largest coal dealers, whereby these firms will give to all members of the association a special discount on all purchases.

The contracts call for a special discount on the net selling price of all goods purchased. In the case of the department store the discount will apply to special sales as well as goods sold in the regular way so that members will in every case receive the full benefit of the contract.

The members may select their purchases before announcing that they intend to use the co-operative buying plan, thus insuring that the price and quality of the goods will be the same as those offered regular cash customers.

The contract with the coal dealer calls for the highest grade of coal, each ton to be full weight, 2240 lb. This firm will deliver the coal without extra charge to any part of Philadelphia, Willow Grove or Folsom at the lowest retail price prevailing at the time the coal is purchased. The association members can, by the use of this co-operative buying plan, make a substantial saving on every ton of coal over the price they have formerly paid.

To make the details of buying under this plan as simple as possible, the Co-operative Beneficial Association will sell to members cash coupons at reduced prices from the face or purchasing value. Books of cash coupons will be issued in the following denominations:

Purchasing Value	Cost to Members	Saving
\$2.50	\$2.30	\$0.20
5.00	4.60	0.40
10.00	9.20	0.80

The coupons will be arranged in the books in one long strip, each coupon representing 1 cent. When purchases

are made the face value of coupons equivalent to the amount of the purchase will be detached and accepted by the seller in payment of the goods. Under this plan purchases of any amount can be made by the owner of the book or members of his family.

The coupons will be numbered both forward and backward in the book, thus making it a simple matter to figure the correct amount to be surrendered for the purchase.

These books of cash coupons will be on sale at all depots and at the office of the Co-operative Beneficial Association. The cost of unused coupons will be returned to the purchaser, if he so desires, on application at the office of the association.

The merchants receiving these cash coupons in payment for goods supplied will forward them to the Co-operative Beneficial Association, accompanied by monthly bills for the amounts represented by the face value of the coupons, less the fixed discount as per the contract with the individual firm.

The fact that the contracts thus far have been made with representative firms is quite indicative of distinct progress in the direction of securing to the men the benefits of co-operative buying. Several applications from other merchants desiring to come in on this plan have been received, and it is expected that dealers in groceries, meats and other necessities of life will be added to the list as rapidly as their applications can be favorably acted upon.

The contracts mentioned above were made with the Co-operative Beneficial Association, the Philadelphia Rapid Transit Company guaranteeing the bills for goods supplied under this arrangement. The money received from the sale of cash coupons will be placed in the bank to the credit of the association and will be checked out as the monthly bills of the firms, accompanied by the cash coupons, are rendered.

The printing of the books of cash coupons is now being undertaken, and an announcement is soon expected as to the exact date when they will be placed on sale and the co-operative buying plan made effective.

SUBWAY PASSENGER REFERENDUM AT BOSTON

In connection with an investigation of the desirability of changing the terminus of the Boylston Street subway from Park Street to Post Office Square, the Boston Transit Commission invited patrons of the Boston Elevated Railway Company using Boylston Street surface cars on May 1 to vote their preferences as a guide to its recommendations, following an order of the Massachusetts Senate requiring the commission to report upon the cost and desirability of the proposed change. By the route at present authorized the subway will have a station near the corner of Boylston and Tremont Streets, connecting there by transfer with the present Tremont Street subway. From Boylston to Park Street its tracks will follow the line of the latter.

A new terminal station is provided for at Park Street, with enlarged accommodation and provision for connection by transfer, if necessary, with through cars running in the Tremont Street subway to Scollay Square and the North Station, and also with the Cambridge tunnel and its extension under Winter and Summer Streets, connecting with the Washington Street tunnel, the South Station, the Atlantic Avenue elevated line and the lines to South Boston.

The route suggested as an alternative continues under Boylston to Washington Street, passing under the present Tremont Street subway and the Washington Street tunnel, with connections with both, and continues further under Essex, Chauncy, Arch and Milk Streets, with a terminal loop under the Boston Post Office. This route would have a station at Summer Street with connections with the Dor-

chester tunnel, but would delay the opening of the service about eighteen months.

Notices outlining the foregoing points in favor of each route were provided on May 1 on all inbound cars west of Copley Square, and upon their arrival at Exeter Street, all cars entering the downtown district were boarded by uniformed employees who distributed preferential ballots with perforated subdivisions indicating the choice of route



Boston Referendum—Supplying a Conductor with Subway Ballots

aboard each car, the number of ballots distributed being based upon the approximate number of passengers on each car at this point.

Immediately after the arrival of the cars at the Boylston and Park Street subway stations ballot collectors in uniform on the platforms and stairways gathered the slips from the alighting passengers. The voting was continued on May 3 and May 5, and will be announced by the commission next week in its report as a substantial expression of public opinion relative to the choice of routes. The

HAND ONE OF THESE LEAVING THE CAR IN	TO COLLECTOR WHEN THE SUBWAY. ★ ★ ★
I prefer a Subway to Park Street	I prefer a Subway to Post Office Sq.

Boston Referendum—Form of Ballot on Choice of Subway Route

Park Street terminal is in the heart of the shopping district and the Post Office Square terminal would be about in the center of the financial district.

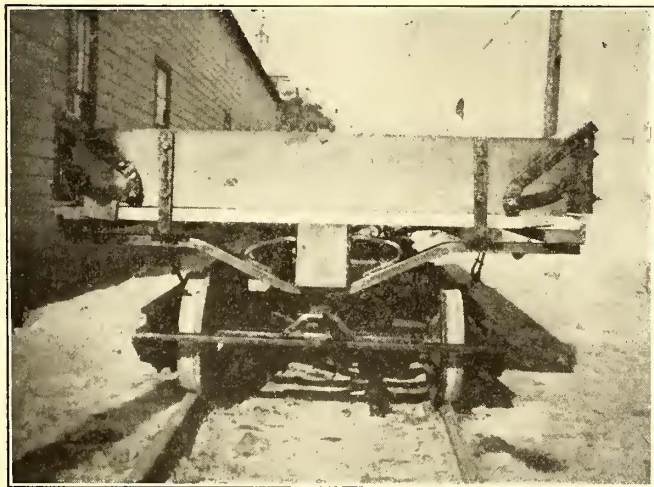
In the carhouse of the Sacramento Electric, Gas & Railway Company a "live-wire box" is posted just inside the door. The wording on the front of the box is as follows: "Please put in this box any information that will tend to produce Pacific Service; also any prospects that will lead to the obtaining of new business or the sale of appliances."

NOTES ON THE SANTA BARBARA & SUBURBAN ELECTRIC RAILWAY

The Santa Barbara & Southern Railway, with headquarters at Santa Barbara, Cal., is the successor of the Santa Barbara Consolidated Railroad. It is owned by the Southern California Edison Company of Los Angeles. Owing to the expiration of the franchises of the original company a new franchise was granted to the present company early in 1912. This franchise required that the gage should be changed from 3 ft. 6 in. to 4 ft. 8½ in.; that the rails should be not less than 60 lb. in weight and 6 in. in height; that the ties should be laid on 6 in. of broken stone; that the stone should extend 3 in. above the ties; that 6 in. of hydraulic cement concrete should be used above the sand and that the top dressing should be of 3 in. asphalt. Since reconstruction was commenced the City Council has permitted the thickness of the top dressing to be reduced to 1½ in. of asphaltum, and this is placed on 7 in. of concrete, which makes the distance from the top of the rail to the bottom of the substructure 18 in. The old track consisted of various types of T-rail ranging from 40 lb. to 60 lb. The new rail is of Pennsylvania Steel Company's high T-section No. 242 and was delivered in Santa Barbara in 60-ft. lengths at a cost of \$54.40 per ton.

The management found that no ballast and construction cars fitted for carrying on the track construction were obtainable on the Pacific Coast, but fortunately the desired kinds of scrap iron and steel were easily secured from the city dump as there appears to be no market in this territory for such material. The company built the necessary flat cars and trucks, using old rails for the latter, and had the wheels cast in a local foundry. These construction cars hauled all material over the old narrow-gage tracks, which had been placed to one side and which were also retained for passenger service until the new road could be completed.

The construction cars were fitted with 20-in. diameter wheels to minimize the height of lift from the excavation to the floor. It will be noted that the flat cars for handling



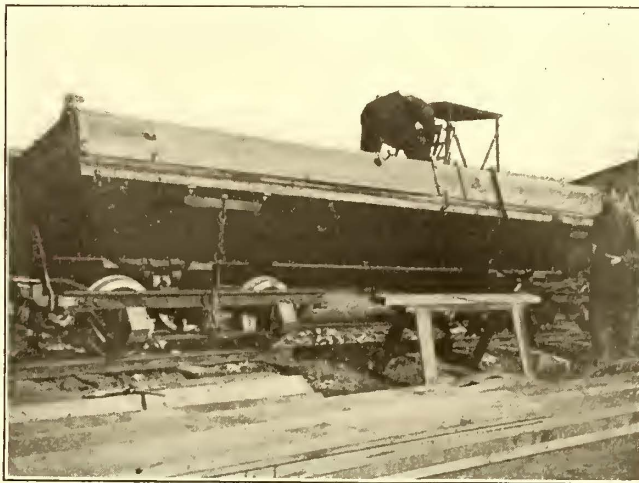
Santa Barbara Reconstruction—Home-Made Dump Car with Single Center Sill

stone were made with a center sill which was pivoted on the king-pin center plate. Chains were attached to the truck frame to hold the body horizontal. Preliminary to dumping the load the chains on one side were unhooked, the material being dumped on the opposite side. This method of handling the stone permitted a saving of approximately 35 cents per cu. yd., as compared with shoveling.

For concrete, the company used a sandstone from the nearest available quarry which is in Acton near Los An-

geles. The concrete cost about \$6 a cubic yard in place. A bituminous clay brick was used on both sides of the rail and is set in the green concrete directly behind the mixer. As it was immediately surfaced and grouted, the brick became an integral part of the concrete work. The concrete mixture was one part Portland cement, three parts sand and five parts broken stone.

The total amount of reconstruction and new construction was about 10 miles. The laborers were Mexicans, who when experienced performed about two-thirds as much la-



Santa Barbara Reconstruction—View of Home-Made Dump Car with Body Tilted

bor per diem as a well-trained Italian track laborer in the East. These men received \$2.25 for a nine-hour day. Despite many difficulties the work progressed at about 10 per cent less than the estimated cost of \$249,000 for reconstruction, including the overhead line. The cost of the car-house was estimated at \$20,000. The work of reconstruction has been carried out under the direction of J. C. Brackenridge, formerly chief engineer Brooklyn Rapid Transit Company.

The company has ordered for delivery about June 1 from The J. G. Brill Company five center-entrance cars, 41 ft. over all, 8 ft. 6 in. wide. They are of the semi-convertible type, seat forty people and weigh 39,000 lb. The motors are of the latest Westinghouse design for stepless cars, affording a maximum motor clearance of 2¾ in. between the motor and the head of the rail when a 26-in. wheel is used.

THE SKIP-STOP IDEA IN DENVER

The Denver City Tramway Company has adopted the skip-stop plan on Colfax Avenue for its express cars to Aurora and Fairmont. This is said to be the first time in which suburban cars using city tracks have stopped to receive and discharge passengers at designated points only.

The company operates a fifteen-minute schedule to each suburban city, and the cars run over the city tracks for a distance of 1¾ miles, or about twenty-eight blocks. Previously these cars stopped at every corner if passengers desired to board or alight from them, and the plan for fewer stops was agitated by the commuters who live in these suburban cities. The company said it would agree to the plan if the commuters could demonstrate to the City Council that it was desirable. This was done at several hearings. At the same time the commuters requested that a similar "express" service with designated stops be put in force in the suburban towns through which the cars ran. The company agreed to do this and at its suggestion a committee composed of prominent representatives of the residents of the suburban districts selected different stopping

points outside of the city limits which the company established. All stopping points are now designated by a red sign on the pole and marked "express." There are seven of these stops in the twenty-eight blocks which the interurban cars run between Broadway and the city limits, or one to every four blocks, the blocks averaging about 333 ft. in length. This express service is conducted only between 7 a. m. and 8 p. m. After that the suburban cars will stop at any corner to admit or discharge passengers. The time of the run to the suburban terminals has been cut down from one hour and fifteen minutes to one hour by this change.

The company also operates a local service on Colfax Avenue, the cars running only as far as the city limits, but the faster time made by the express cars has attracted to them a considerable number of local passengers, not only from the local line on Colfax Avenue, but from the local lines on parallel streets. This has led to a demand by both local and through passengers for the adoption of a skip-stop idea for the local cars also. The latter run on a three-minute headway during the greater part of the day. The company expressed a willingness to accede to this demand if it should appear general and should be approved by the city authorities. After a hearing the Board of Aldermen passed an ordinance authorizing the establishment of local stops at every other corner. The company is therefore planning to take a vote upon the desirability of the plan from the passengers on the line and will conduct such a vote in the near future. If the plan proposed is adopted, the local cars will stop at every other corner on the outgoing trip and at the alternate corners during the incoming trip.

MEETING OF THE COMMITTEE ON RULES

The consolidated committee on rules of the American Electric Railway Transportation & Traffic Association, which now combines the work of the former committees on city and on interurban rules, met in New York on Tuesday, May 6. At the meeting were present F. A. Boutelle, chairman; W. R. W. Griffin, general manager Tri-State Railway & Electric Company, vice-chairman; L. H. Palmer, New York; Edward Dana, superintendent of transportation Boston Elevated Railway Company, and B. J. Jones, general manager Ohio Electric Railway Company.

At the opening of the meeting Mr. Palmer reported, as chairman of the sub-committee appointed for the purpose of considering the expansion of the rules for prepayment cars so that they would include within their scope the recently developed cars of special design such as the near-side and center-entrance types. It was the opinion of the sub-committee that the development of new rules for each new type of car would necessitate a great and possibly increasing number of special sections for the standard code which in large part would be repetition of rules already existing. The sub-committee contended that the purpose of the standard rules would be better carried out by making the rules in the standard code general enough to cover all cases and avoiding the use of special sections altogether.

Upon the receipt of the approval on this procedure by the committee as a whole, the sub-committee on city rules presented its report in detail, which consisted in proposed changes in the latter part of the standard code commencing with the operating rules for conductors. This revision was taken up seriatim, each rule being discussed by the committee together with the changes suggested by the sub-committee. The outcome was that, by means of eighteen changes in nine rules, including some minor changes in diction for the purpose of standardizing the form of expression, the entire section devoted to special rules for prepayment cars, amounting to four pages of the standard rule book, was eliminated. The changes made a net reduction

of eleven rules, thus providing a very appreciable means for effecting condensation of the standard code.

At the conclusion of this discussion the report of the sub-committee was approved, and the members, Messrs. Dana, Kummerlein and Palmer, were requested to continue their work along similar lines.

The first business of the afternoon session was a general discussion on ways and means for obtaining co-operation in the application of the standard code by the various sectional electric railway associations. It was finally decided, however, that in view of the possible changes required by the proposed plan of eliminating special rules from the standard code, it would be desirable to postpone till next year any effort which might be made toward this end.

A sub-committee was appointed to take up the work of harmonizing city and interurban rules and to report on any discrepancies in the two codes which might exist. The formal meeting then adjourned, the sub-committee on city rules stating that it would be able to complete its report for submission by mail to the whole committee on July 1. The sub-committee consisting of Messrs. Boutelle and Griffin which was appointed to consider the possibility of effecting a substantial agreement between the standard interurban code and the rules of the American Railway Association then took this matter in hand, the other members of the committee entering into the discussions. No formal report, however, was made by this sub-committee at this time.

A joint meeting of sub-committees from the rules committee and from the committee on signals was held in New York on Monday at which Messrs. Boutelle and Palmer, of the rules committee, and J. J. Doyle, general manager Washington, Baltimore & Annapolis Electric Railroad, and J. M. Waldron, signal engineer Interborough Rapid Transit Company, of the signal committee, were present. The combined sub-committees at this meeting made an investigation of the rules of various electric railways and steam railroads covering the operation of block signals in general. In addition to developing a list of standard definitions the sub-committees arranged to prepare a compilation of rules now in force from which to make a selection for use by the American Electric Railway Association and which will be presented for the approval of the association at the convention in October.

MEETING OF THE SUBJECTS COMMITTEE

The subjects committee of the American Electric Railway Association met in New York on Tuesday, May 6. At the meeting were present James D. Mortimer, president Milwaukee Electric Railway & Light Company, chairman; E. C. Foster, president Manchester Traction Light & Power Company; Calvert Townley, president Lackawanna & Wyoming Valley Rapid Transit Company; Martin Schreiber, engineer maintenance of way Public Service Corporation. At this meeting the committee took under consideration the matter of developing a program for the convention sessions of the American Association.

The committee made a tentative decision to arrange for the presentation of a number of papers on various subjects of interest in the electric railway field which were to be presented by prominent authorities in the different branches of the industry. In addition it was decided to arrange to have a series of written discussions upon these papers. Among the subjects which will be taken up it is expected that the following will be treated: Valuation; Relations of Carriers to the Developments of Territory Which They Serve; Relief of City Congestion; Electric Railway Securities from the Investor's Viewpoint; The Present Tendency of Public Utility Laws and Regulations; Profit Sharing with Employees.

COMMUNICATION

"ACCOUNTING VERSUS STATISTICS"

AMERICAN ELECTRIC RAILWAY ACCOUNTANTS' ASSOCIATION
BOSTON, MASS., May 6, 1913.

To the Editors:

I note in your issue of May 3 an article by Milan V. Ayres, "Accounting Versus Statistics," in which he holds the American Electric Railway Accountants' Association in part responsible for what he calls "cunningly concealed pitfalls" in the standard classification of accounts. I do not wish to enter into any controversy upon this subject but feel it only right to call attention to the following facts:

The classification of operating expenses, as well as all other matters relative to electric railway accounting, is now being considered by a committee composed of certain members of the examining board of the Interstate Commerce Commission and the committee on a standard classification of accounts of the American Electric Railway Accountants' Association; the advisability of including under the head of "power" the maintenance of power plant buildings and the maintenance of power plant equipment is being seriously considered, and there seems every likelihood that this method will be adopted.

In regard to the power produced, after one knows the amount expended for power, is it not also necessary, in an exact comparison, to learn what the equipment of the companies consists of, whether it is of large or small units, whether of reciprocating engines or turbines, whether it produces alternating or direct current, whether it is a steam plant or a water-power plant?

The present classification is designed so that at a glance a person may know whether power is generated or purchased, and certainly a person cannot properly compare the power cost of a company which purchases power with one which produces power without knowing what elements were considered when the contract was made for the power purchased. This would be equally true in a comparison between two companies each of which purchases power. It is absolutely absurd to compare any items of accounts, and equally absurd to compare any statistics, without knowing the conditions.

Take as an illustration the question of maintenance of track; would anyone think of making a comparison of the expenses per car mile of one company with another without knowing what kind of track construction each company had, whether the tracks were in paved or unpaved streets or in private reservations, upon the surface or upon an elevated structure or in a subway or tunnel, the weight of rail, treated or untreated ties, driven or screwed spikes, gravel or concrete base, bolted or welded joints, amount of special work, etc., weight of cars used and miles run by the cars? Could any system of accounts be devised that would give all this information through charges made to operating expenses?

Mr. Ayres states that the cash expense for maintenance is a matter of fact and that the account should show what the actual expenditure was in a given period. If a depreciation reserve has been set up during a period of years to cover the extraordinary wear and tear of equipment and it becomes necessary to replace the equipment, is it not perfectly right to charge up the cost of this replacement against the sum set up for this specific purpose? And if this is done, how may it be charged to the maintenance account at the time the equipment is acquired, and if not so charged, how can it appear in the maintenance expenses for that year?

The Accountants' Association, in the article, is erroneously criticised about depreciation. Attention is called to Account 26, depreciation of way and structures, and Account 42, depreciation of equipment, in the classification

adopted by the American Electric Railway Accountants' Association. Each of these accounts has no text but has the following note:

"Note: This account is provided in case such an account should be prescribed by any of the state commissions, and in such case there should be excluded charges for renewals from all the accounts affected by the introduction of this account. Such expenditures for renewals will then be charged direct to an appropriate replacement account, maintained by the prescribed charges to this account."

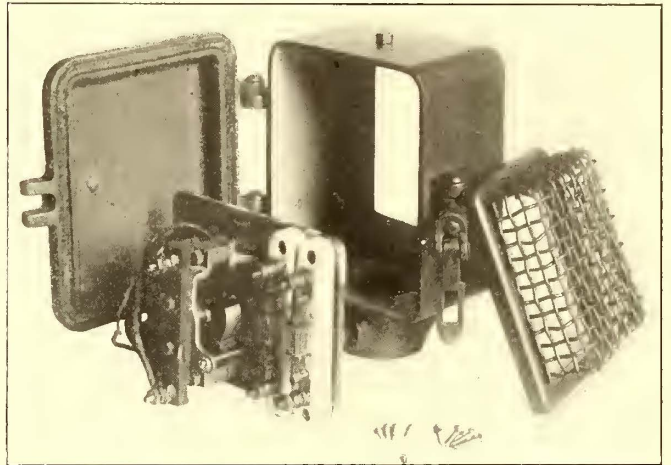
The association never has gone on record as approving of any depreciation account and has only provided titles that may be used where a company is compelled to set up such an account by the authorized state authorities.

H. L. WILSON,

Chairman of Committee on a Standard Classification of Accounts.

A THREE-POSITION SWITCH INDICATOR

The latest type of switch indicator to be developed by the Union Switch & Signal Company for indicating whether a train has entered the block within which the switch is located provides for three positions of the miniature semaphore blade with which it is equipped. The instrument, which is shown in the accompanying illustration, is oper-



Three-Position Switch Indicator

ated by a "Z"-shaped armature which makes a partial rotation in a magnetic field and thus moves the semaphore blade to the position determined by the condition of the control circuit.

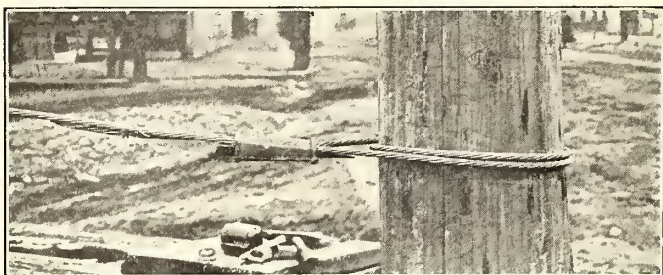
Both armature and field cores are made of laminated iron. The case has been so designated that there is room above the mechanism for two lightning arresters and the bottom has been arranged for mounting the indicator on a post near the switch stand. The front may be equipped with a plain glass, wire glass or plain glass with a wire shield, the wire being cast into the frame which holds the glass in place. This frame, together with the mechanism, is secured to the case by screws which can be removed only from the inside of the case.

The door carries a projecting pocket on its lower edge which incloses the head of a set screw fastening the case to its support, and this makes it impossible to loosen the set screw and remove the instrument without first opening the door. The mechanism can be equipped with two front and two back non-independent contacts when desired.

The blade and miniature spectacle can be furnished in any standard design to suit conditions, and any degree of stroke can be had in the upper or lower, right-hand or left-hand quadrant. The mechanism is usually furnished to operate on 110 volts, 25 or 60 cycles, but can be wound for any voltage up to 220.

EXPERIENCES WITH BOLTLESS GUY CLAMPS

During the summer of 1912 the Peoria Railway Company built a number of extensions to existing lines and in a number of instances the construction had to be completed within a specified time. One of the problems most difficult of solution was that of organizing overhead line gangs to accomplish the work as scheduled, and in order to do it

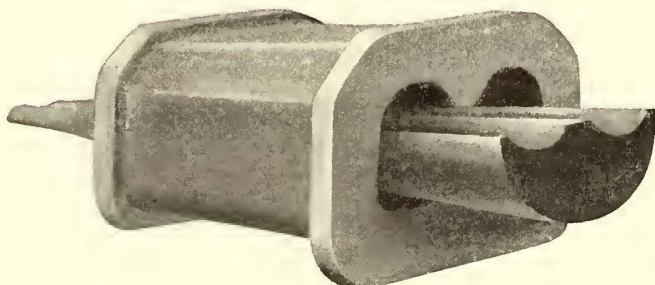


Boltless Guy Clamp in Place on Cable

with the regular repair forces within the scheduled time and in a permanent manner the overhead department purchased a supply of boltless guy clamps. At the completion of the work it was found that the use of these clamps had greatly facilitated the work, and as a result of this experience boltless clamps have been adopted as standard for overhead lines in Peoria. As fast as repairs or renewals are required they are being placed on the lines.

Primarily the boltless guy clamp was designed to eliminate the cumbersome, time-consuming process of attaching guy and span wires to poles and anchors. Since it has been in actual service numerous other advantages have been found which alone made its use worth while. The Matthews boltless guy clamp, which was the type used, is manufactured in two sizes, the "Giant," for guy strand 5/16 in. and 7/16 in. in size, and the "Baby," for use on 1/4-in. and 5/16-in. strand. In principle the clamp is simple. It consists of a wedge grooved on one side and smooth on the other, which fits into a tapered sleeve with internal grooves on one side. These grooves on the wedge and sleeve when mated form for the strands a pair of channels which are gradually reduced in section as the wedge enters the sleeve.

To apply the clamp the span or guy strand is run through the sleeve, thence around the pole or through the eye of the anchor and back through the sleeve. The wedge is then inserted in the sleeve, and as it is driven tight it wedges the wire securely, the two sections of strand filling the grooves. The double groove in the sleeve and wedge permits clamp-



Boltless Guy Clamp—View Showing Double Slots and Wedge

ing without deforming the strand, and as the tension in the strand comes as much from the section in direct line with the guy as from the one forming the stub end, the clamp can be set in either direction according to convenience in driving the wedge. The time required to apply the clamp after the slack has been taken up in the strand is almost negligible, most of it being consumed in attaching a

short section of wire from the strand and giving this a few turns around the guy to make the connection neat in appearance.

Another advantage which developed through actual service on the Peoria Railway Company's lines is the ease with which sags may be taken up in new line while the poles are assuming a permanent set. This is accomplished by applying a "come-along" and small block and fall between the span wire and the pole and after the slack is taken up the wedge is removed, thus allowing the slack to pass through the sleeve. The wedge is then reinserted and driven tight.

OXY-ACETYLENE TORCH FOR CUTTING AWAY WRECKAGE

The labor-saving possibilities of the oxy-acetylene torch were strikingly demonstrated recently in Indianapolis when the Prest-O-Lite Company, maker of the well-known automobile lighting system, contracted to cut away steel wreckage from two of the bridges which were damaged in the recent disastrous flood at that city. The accompanying illustration shows the torch in operation at the Washington



Cutting Away Floor Beams of Wrecked Bridge with Oxy-Acetylene Flame

Street bridge of which photographs were published in the *ELECTRIC RAILWAY JOURNAL* for April 5, 1913, showing the flood at its height.

By this means the entire work of cutting away the twisted mass of wreckage took only a little over three days and materially hastened the work of reconstruction. The procedure involved first heating the heavy girders and then directing a stream of pure oxygen against the hot metal. This caused the steel to burn quickly and fiercely, the average time consumed in cutting a girder being a little over five minutes. The portability of the equipment proved a great aid in the speedy removal of the steel wreckage.

The latest report of the Hungarian Ministry of Public Works shows that at the end of the year 1910 the street railways of Hungary had a total trackage of 206 miles, of which 158 miles were electrically operated. The electric lines had seven locomotives and 1012 motor cars. Fourteen of the twenty-seven systems were electrically operated with both steam and electricity. The five lines of Budapest alone, totaling 87 miles, carried 161,178,383 passengers. All of the companies, except one, were able to meet their fixed charges.

News of Electric Railways

Progress of Franchise Negotiations in Kansas City

The negotiations looking to the extension of the franchise of the Metropolitan Street Railway, Kansas City, Mo., have been suspended in order to afford the officers of the company and the receivers of the property an opportunity to confer in the East with financial interests in regard to the prospects for financing the property under the tentative terms which have been discussed by Mayor Jost and the receivers and officers of the company at the conferences which have been held in Kansas City. Mayor Jost is reported to have said recently:

"The latest conferences we have been holding on the franchise proposal have been fruitless. We have simply been discussing all over again the things we threshed out at the opening meetings at the City Hall. I have been attending these meetings the last few days in the expectation that I was to receive an answer to the terms I submitted as the basis on which I would undertake to work out with the receivers the details of a franchise. As I understand it, the receivers are to go back to the bankers with my restatement of my proposal and let me know whether or not they can refinance the property on the basic terms for a new grant that I have outlined. Any time they call me I will be ready to make more clear, if that is possible, the terms proposed."

The Mayor's terms as now stated are that the city will guarantee 6 per cent for the life of the grant on a valuation of \$28,750,000 with the added capital necessary each year for extensions to meet the needs of increasing population, all surplus above that to go to an amortization fund to retire the obligations and leave the property free to the city at the end of thirty years. If the city should elect to take over the plant at the agreed valuation before the stockholders have had any return on the additional money put into the company, the added investment shall be taken care of in the purchase price.

Lee, Higginson & Company issued a circular to the holders of the consolidated mortgage bonds of the Metropolitan Street Railway, calling attention to the fact that the interest on these bonds would be paid on May 1. It was stated that since the appointment of the receivers the earnings of the company had shown no falling off, the interest on all obligations had been promptly met and the receivers reported that they had expended large sums from the surplus earnings in improvements on the property over and above the ordinary maintenance charges. The consolidated mortgage 5 per cent bonds matured May 1, 1913, but were declared due and payable by the protective committee last June because of the appointment of the receivers.

Strike in Roanoke

A strike was declared on the morning of May 1, 1913, by the union motormen and conductors of the Roanoke Railway & Electric Company, Roanoke, Va. The trouble dates back to an altercation on April 6 in one of the Roanoke cars between an employee off duty and the motorman of the car. The matter was carried by the company to court, but the evidence was so contradictory that the case was dismissed. It appeared from the evidence, which was corroborated by K. A. Hawley, assistant superintendent of construction for the Appalachian Power Company, Bluefield, Va., who was the only adult passenger on the car at the time of the dispute, that the man off duty used profane language on the car. As this was a violation of the rules of the company he was suspended, but the motorman was not disciplined.

The suspended employee was a member of the union, which claimed discrimination and asked that the question of suspension be arbitrated. A board of three members was first proposed, and then the Central Trades and Labor Council offered to submit the case to W. H. Lewis, general superintendent of motive power of the Norfolk & Western Railway. J. W. Hancock, general manager of the Roanoke Railway & Electric Company, said the fact that the man who

had been disciplined was a union man had not entered into the case. The question involved was simply one of discipline and since the company was required by the courts to maintain order on its lines in the case of both passengers and employees, he considered that the company could not submit to arbitration a matter for which it was alone responsible.

Several conferences were held between the officers of the company and committees from the union, and on May 1 the members of the union were called out to enforce their demands. The company kept all its cars in operation during the day. It notified the strikers that the new men being engaged were employed permanently and that all former employees on strike not reporting within two days would be regarded as out of the service. Neither traffic nor business has been interfered with to any extent, and the situation at the end of the sixth day was practically unchanged. The Common Council of the city has appointed a committee to confer with the officials of the company with the object of bringing about a speedy settlement of the strike.

Mr. Mellen on the New Haven's Electric Railway Purchases

Charles S. Mellen, president of the New York, New Haven & Hartford Railroad, testified on May 2, 1913, in the Interstate Commerce Commission investigation which is being conducted before Commissioner Prouty at Boston. In discussing the affairs of the New York, Westchester & Boston Railway at the request of Attorney Choate, his personal counsel, Mr. Mellen said in part:

"I have never been enthusiastic or at all optimistic as to the New York, Westchester & Boston Railway being a good investment in the present or immediate future, but people in whom I have greatest confidence thought it was wise and desirable. I yielded to their judgment. The reason for the purchase was that it was going to be extremely valuable in the future. My hesitation was because of the burden that I felt the New Haven was hardly justified in assuming against the time when the road could become a paying investment. It is one of the finest physical pieces of railroad in this country. Its operation at present indicates that it is barely earning its operating expenses. The New Haven is carrying the burden of lost interest upon the total investment. I believe that situation is going to improve constantly. The New York, Westchester & Boston Railway was opened too soon in one respect. It was built to connect with the subways in New York. The question in my mind is whether the enormous cost of that construction was justified in advance of the business to be done. It should be earning full operating expenses by June 1, and I think from that date it will be able to show a slight profit above expenses. With the completion of the subways in New York the earnings of the New York, Westchester & Boston Railway are going to be very much larger, but I have no expectation that in the immediate future the road will be able to show earnings on its full cost."

In explaining the purchase of the electric railways in Rhode Island by the New York, New Haven & Hartford, Mr. Mellen said:

"When we bought the Rhode Island Securities Company we made the best trade we could. We estimated the results from operation for a series of years. We could not see how it was possible for it to pay the interest upon the securities issued in payment. We had to go over that transaction for a long time and finally the security holders put up a guarantee fund of \$1,200,000 in cash, which they estimated would meet the deficit until the time when the property became self-sustaining and able to pay 4 per cent upon the purchase price. Immediately after the purchase we were ushered into the panic of 1907-08, and the \$1,200,000 which it was estimated would meet the deficit for something like six years was absorbed in eighteen months. The Rhode Island Company will probably return to the New Haven 3 per cent upon its total cost. I am assured by Vice-president Storrs, in charge of the electric

railway system, that if there is no material change in business conditions for the year ending June 30, 1914, he will be able to declare a dividend to New Haven from all electric railways owned by New Haven—Berkshire, New York & Stamford, Westchester Street Railway, Connecticut Company and Rhode Island Company—the full 4 per cent upon their full cost and expense to the company up to the present time.”

Asked to explain the situation with regard to the Connecticut Company, Mr. Mellen said:

“I am confident it will earn and pay the full 4 per cent upon its cost to date. The New Haven owns every share of its stock.”

Mr. Mellen explained the difference in character of the electric railways and said that he had always regarded the electric railways as important adjuncts of the steam railroad system. They collect and distribute the business at the steam railroad stations and at the freight houses. They were bought on the basis of their income from passenger revenue and were developing a large freight revenue.

Referring to the electric railways in the Berkshires Mr. Mellen said:

“The Berkshire is a purely country trolley. It earns a deficit each year. This condition will be changed when connections with other lines, now planned, are made. Between \$2,000,000 and \$3,000,000 has been invested in the Berkshire, which is not yet earning a return.”

Proposed Extension to Geary Street Municipal Railway

The public utilities committee of the Board of Supervisors of San Francisco, Cal., has filed a report with the board recommending that an election be called to authorize an issue of \$3,500,000 of bonds to construct extensions to the municipal railway. City Attorney Long said that if the necessary ordinance providing for the bond election was passed without delay it would be possible to hold the election within sixty days. Chairman Vogelsang of the public utilities committee announced that such an ordinance would be introduced immediately. The extensions favored are those embraced in Combination 3 of City Engineer O'Shaughnessy's report, made to the Supervisors recently. Discussing the prospects for completing before the exposition the extensions which have been proposed to the Geary Street Municipal Railway, San Francisco, Cal., Thomas W. Ransom, in charge of street railway planning in the city engineer's office, said recently:

“If special funds—a matter of \$15,000—are available instantly for the city engineer's office, so that plans and specifications may be prepared now, and if the people vote the \$3,500,000 of bonds needed to construct and equip the street railroads ordered by the Supervisors, not one moment's time will be lost in carrying out the scheme. The exposition lines have been carefully planned, not as emergency factors, but as integral parts of the city's permanent municipal railway system.

“Four months will be required to prepare plans and specifications, so that contracts can be entered into for the construction of cars and carhouses and for the delivery of the material necessary for the construction of the roadbed, trolley feeders and overhead work.

“The Van Ness Avenue line will be commenced first; then the Potrero Avenue extension of the Van Ness Avenue line, and the remaining lines, as fast as material arrives.

“It is estimated that the Van Ness Avenue line can be completed within twelve months after contracts for the delivery of material are entered into, and the remaining lines, with the exception of the Church Street line, in sixteen months. This will make the time required for the construction of the Van Ness Avenue line sixteen months after the date upon which the preparation of plans and specifications is commenced, and, for the other lines, twenty months.

“These estimates are based upon the assumption that whatever tunnels may be decided upon will be completed at dates sufficiently early not to delay the construction of street railways through them; that no unnecessary delays will be permitted in the prosecution of the work; that the policy of the city in reference to the extent and type of construction will be decided upon before the preparation of plans and specifications is commenced, and, once decided upon, will be followed without change.”

New York Rapid Transit Companies Protest Against Income Tax Provisions

James Quackenbush and Ralph Norton, representing the Interborough Rapid Transit Company, New York, N. Y., and George D. Yeomans, representing the Brooklyn (N. Y.) Rapid Transit Company, have been in Washington endeavoring to secure amendments to the pending income tax law. The income tax section of the Underwood tariff bill proposes to levy a 1 per cent tax on the net income of corporations. In order to prevent extraordinary allowances for fixed charges on capital, permission is given in estimating the income tax to deduct only the interest paid on the amount of indebtedness which does not exceed the paid-up capital stock. Bonds issued in excess of the paid-up capital are to be subject to the provisions of the bill. Both the Interborough Rapid Transit Company and the Brooklyn Rapid Transit Company are to have an unusual quantity of bonds outstanding, in view of new subway construction. The Interborough company has \$35,000,000 of capital stock and is to issue \$170,000,000 of bonds, while a subsidiary of the Brooklyn company will have only \$2,000,000 stock, against \$100,000,000 of bonds. Under these conditions the two companies will be liable respectively for \$67,500 and \$49,000 more tax than if they could deduct from gross income all the interest on bonds. New York City also will be affected by such a method of taxation of the companies, for all taxes assessed against the new lines in connection with or incident to operation are deducted from gross earnings before the half and half division takes place with the city, and the city would thereby lose half of the annual tax. Counsel for the companies suggested the following amendment:

“In case of corporations, joint stock companies or associations the purpose and amount of a portion of the whole of whose indebtedness has been approved by a board or commission or commissioner vested with the power by any State to make such approval, deduction shall be allowed for interest accrued and paid within the year on the amount of indebtedness so approved.”

Provisions of the Cincinnati Settlement Act

The terms of the Snyder bill, passed by the Legislature of Ohio and providing for the exchange of franchises for indeterminate permits, have been explained in part as follows by Alfred Bettman, city solicitor of Cincinnati, who has taken an active part in the negotiations between the city and the Cincinnati Traction Company:

“The Snyder indeterminate permit bill drawn up by the Cincinnati city administration, as originally introduced, covered all forms of public utilities except telephones and railroads and telegraphs. In this shape it was passed by both houses. Owing to some question about one section of the bill it was agreed that the bill should be thrown into conference and to take interurban railways out of the bill because they are not, properly speaking, local public utilities. The General Assembly expressed its willingness to pass a bill relating solely to Cincinnati, so at the last minute the first section of the Snyder bill was amended so as to apply only to street railroads under the Rogers law. My impression is that the measure is constitutional and that it will make it possible to carry out the proposed street railway settlement in Cincinnati. The bill cannot go into effect until ninety days after the Governor signs it.

“The bill as passed authorizes the surrender of any franchise granted under the Rogers law and the substitution of an indeterminate permit, that is, a permit to operate a street railroad, subject to control of capitalization, fares, service and everything else by the municipality, through a local public utilities department, until the city purchases the street railroad at an agreed price, or at a price fixed by a court or the State Public Utilities Commission. Fares must be revised at the least every five years, and the privilege of purchase by the city may not be suspended for more than five years. Any ordinance of Council granting the permit and fixing the purchase price and fares or any other terms cannot go into effect until submitted to the electors of the city at a special or general election held not less than thirty days after the passage of the ordinance. As the law, under the initiative and referendum clause of the constitution,

cannot go into effect for ninety days, that makes 120 days as the minimum possible time for submission of the ordinance to the people, assuming no delays or difficulties."

Storage Battery Cars to Replace Horses in New York

The hearing before the Public Service Commission for the First District of New York in regard to the application of the New York Railways to change the motive power from horses to storage battery on the Metropolitan crosstown line will be continued on May 12. At the hearing on May 5 all evidence was submitted, and it is expected that the approval of the commission will be granted as soon as counsel for the commission can check up the list of property owners' consents to the substitution of motive power. George Keegan, general superintendent of transportation of the New York Railways, said that the company desires to run storage battery center-entrance prepayment cars similar in design to the stepless car No. 5000 now operated on Broadway. The new cars will be of the single-truck type, 30 ft. in length, with a capacity of thirty-one persons. Particular attention was paid to the design of wheels guards to be used and Mr. Keegan said that the problem was being most carefully studied. The substitution of the new cars will necessitate minor changes at switches and curves.

The Belt Line Railway Corporation has received permission from the Public Service Commission for the First District to change its motive power on certain lines covered by its franchise from horse power to electricity contained in storage batteries. This company owns the Fifty-ninth Street crosstown line and the East and West belt lines in Manhattan, formerly the property of the Central Park, North & East River Railroad. The Fifty-ninth Street line is already electrified and operated by underground trolley. The company now proposes to use storage battery cars on the East and West belt lines.

Material Required for Japanese Line

According to United States Consul General Thomas Sammons, Yokohama, Japan, a large number of electric cars for use on the new double-track imperial Japanese government line between Yokohama and Tokyo will be required during the coming year. The construction of power houses and grading for the line was begun in February, 1911, and part of the undertaking will be completed in May or June, 1914. Communications regarding equipment for the line, commonly termed the "Keihin" line, may be addressed in English to the Imperial Japanese Railway Bureau, Tokyo, Japan.

Two depots are to be established for the new electric line, one at Osaki, between Shinagawa and O'mori near Tokyo, and the other at Takashimacho, between Kanagawa and Yokohama. With the completion of the station at Takashimacho, Hiranuma, the depot, being a part of the Yokohama service, will not be continued as a passenger station, but it will be used for freight only. Shimbashi station, Tokyo, will be continued for freight service only, and Tokyo passengers will take electric cars at any depots where it may be convenient to them. Thus the traffic between Tokyo and Yokohama will be carried on almost wholly by electric cars, while trains driven by steam locomotives for the Tokaido line will depart from Shinagawa, at Tokyo, the terminal station for the steam lines. These trains will operate through the Takashimacho station at Yokohama. The new station in front of the Imperial Palace at Tokyo is to be finished before the coronation ceremonies, about November, 1914. The government electric lines in Tokyo by that time will be operated through the center of Tokyo from Shinagawa to Uyenou.

Cleveland Arbitrators Meet to Choose Third Member

C. N. Duffy and A. B. DuPont, chosen to arbitrate the disputed points between the Cleveland (Ohio) Railway and the city, met on May 2, 1913, to discuss the selection of a third member. Several plans were suggested by both men for making the selection, but none of them was adopted. The third man must be selected within a few days or the

duty of choosing will fall to Federal Judge Day under the terms of the franchise.

The refusal of the Cleveland Railway to extend the 3-cent fare to Newburg and Lindale, villages which have been annexed since the Taylor franchise was granted, has caused the city officials to decide to attempt to so amend the grant as to force the company to extend the low fare to all places that may be taken into the city in the future.

Changes in Personnel of Chicago Railways Company

A number of changes have been made in the transportation department of the Chicago (Ill.) Railways Company. Benjamin Phillips, heretofore assistant superintendent of transportation, has been made superintendent of transportation. Mr. Phillips has been in the employ of the company a number of years and was made assistant superintendent of transportation last year.

Charles Hamilton has been made assistant superintendent of transportation. Mr. Hamilton has been in the employ of the company a great many years and his last position was that of station superintendent.

F. P. Edinger, heretofore station superintendent at the limits station, has been appointed assistant superintendent of transportation.

Division inspectors have been appointed in charge of the three respective divisions of the company as follows: J. P. Hollmeyer becomes division inspector of the North division; W. B. Whitney becomes division inspector of the Northwest division; T. Eigelsbach is made division inspector of the West division.

P. D. Mollohan, formerly an inspector, has been appointed station superintendent at the limits station.

E. G. Wentzel has been made acting superintendent at the Armitage station.

Plan for Electrification Between Keokuk and Des Moines.

—Officials of the Chicago, Rock Island & Pacific Railway have been approached by promoters of an interurban project, who desire to electrify the line of the company between Keokuk and Des Moines, Ia. This line extends from the main line at Des Moines in a southeasterly direction to Keokuk, and is a single-track road now operated by steam.

Reorganization of New Jersey Commission.—Capt. Ralph W. E. Donges has been appointed a member of the Board of Public Utility Commissioners of New Jersey to succeed Robert Williams. Mr. Donges has also been elected president of the board. The other two members of the board are Thomas J. Hillery and Prof. Winthrop M. Daniels. Alfred N. Barber, Trenton, and Frank H. Sommer, Newark, have been reappointed to the commission as secretary and counsel respectively.

Strike in Asheville Settled.—The strike of the motormen and conductors in the employ of the Asheville Power & Light Company, Asheville, N. C., has been settled. The strike was declared on April 26 and the men remained out for six days. The principal demand was for a considerable increase in wages. For the first day or two of the strike very few cars were run, but from then on the schedule was gradually increased until on May 2 the full complement of cars was again in service. The strike was settled by the company granting a small increase in wages to the men.

Joint Track Agreement in San Francisco.—The voters of San Francisco, Cal., have ratified the compromise agreement regarding the joint use of the tracks on lower Market street by the Geary Street Municipal Railway and the United Railroads. Thornwell Mullally, assistant to the president of the United Railroads, is reported to have said that the company will proceed at once in conjunction with the city to secure a dismissal of the suit now pending on appeal in the Supreme Court, as would have been done immediately after agreement was originally made, had not the referendum been invoked. The terms of the agreement have been referred to previously in the ELECTRIC RAILWAY JOURNAL.

Extension from Rushville, Ind., to Cincinnati, Ohio.—Elections have been held on the question of a subsidy to meet the expense of right-of-way for the proposed extension of the Indianapolis & Cincinnati Traction Company from

Rushville, Ind., to Cincinnati, Ohio. At the election held in Franklin County, Ohio, on April 8, 1913, the total vote was 1026 in favor of the proposition with 146 opposed. At the election held in Rush County, Ind., on March 12 the vote showed the following result: In favor, 1325; opposed, 356. Part of the right-of-way required by the company for this extension has been donated, and the balance will be provided by the subsidy to be furnished for this purpose by the counties benefited by the new railway facilities.

Bill Passed to Exempt Unions from Prosecution Under Sherman Law.—Three days' debate in the Senate ended on May 7, 1913, with the passage of the sundry civil bill, embodying provisions exempting labor unions from prosecution under the Sherman anti-trust act. The measure will have to return to the House for the consideration of an immaterial amendment, and will then be sent to the President. The measure, except for the one amendment, is identical with the one vetoed by President Taft because of its "vicious class legislation." Reference to the telegram of protest against this bill sent by the American Electric Railway Manufacturers' Association to President Wilson and the Senate was made in the *ELECTRIC RAILWAY JOURNAL* of May 3, 1913, page 802.

Circular About M. M. and M. C. B. Convention.—The Railway Supply Manufacturers' Association has issued an advance circular in regard to the general arrangements to be followed in the exhibit at the Master Mechanics and Master Car Builders' convention, which is to be held in Atlantic City June 11 to 18 on Young's Million Dollar Pier. The exhibit space will be ready for exhibitors from May 24 to June 7, depending on the location, and exhibitors must have exhibits complete not later than the night of June 10. Other details in regard to the exhibits are explained in the circular. The Pennsylvania Railroad will run a special train for the convention from Chicago to Atlantic City. It will leave Chicago at 3 p. m. on June 9 and will arrive at Atlantic City at 2 p. m. on June 10.

Expert for Buffalo in Connection with Terminal Electrification Proposal.—Acting upon the recommendation of Mayor Louis P. Fuhrmann, the Board of Aldermen of Buffalo, N. Y., on May 6, 1913, authorized the employment of an expert by the commissioner of public works to assist and advise the Common Council in the effort now being made to have the steam railroads which operate into Buffalo electrify their lines within the city limits. In a special message to the Council, Mayor Fuhrmann said: "I respectfully recommend that your honorable body authorize the commissioner of public works to secure forthwith the services of an engineering expert specially qualified to advise you concerning the railroad situation in this city and the practicability of electrical operation of all railroad lines within the limits of the municipality."

Trade Press Convention.—H. M. Swetland, president of the Federation of Trade Press Associations in the United States, has announced that the eighth annual convention will be held at the Hotel Astor, New York, on Sept. 18, 19 and 20, 1913. The federation includes the New York Trade Press Association, the New England Trade Press Association, the Chicago Trade Press Association, the St. Louis-Southwestern Trade Press Association, the Philadelphia Trade Press Association and a number of unaffiliated publications, the total membership being 236, representing over seventy-five different trades, industries and professions. Two sessions will be held daily. There will be editorial, circulation, advertising and publishing symposiums, under competent leaders. Many of the leading editors, business managers, buyers and sellers of advertising and authorities on modern merchandising methods will take part.

Omnibus Line Proposed for New York.—The Electric Coach Company, New York, N. Y., which was organized recently by George W. Loft, H. L. Joyce, George Mackay, Charles Berg, Harry B. James, president of the Brooklyn & Manhattan Ferry Company, and others, is preparing to apply to the Board of Estimate of New York City and the Public Service Commission of the First District for permission to operate omnibus lines in New York at a fare of 5 cents. According to Mr. Loft, the company will probably order 1000 electric omnibuses if the rights which it desires are granted by the city. Under a bill passed by the Legis-

lature which has just adjourned the Board of Estimate is authorized to grant franchises for limited terms for stage lines, and to lay out routes for these lines just as it does for a subway or other transit routes. The bill under which the Board of Estimate received authority to make grants to stage lines was passed by the Assembly under an emergency message from Governor Sulzer and both he and Mayor Gaynor are expected to approve the bill. The coaches which the company proposes to operate will seat eighteen passengers, and two of the vehicles are now under construction in Philadelphia. The office of the Electric Coach Company is at 30 Church Street, New York.

LEGISLATION AFFECTING ELECTRIC RAILWAYS

ILLINOIS

The Senate has passed the Waage bill limiting fares on elevated lines in Chicago to 5 cents. This does not affect suburban steam lines. The Senate has passed the Ettelson bill which re-enacted the old Muller law authorizing cities to own street railways. There were technical irregularities in the old act. The Hurburgh anti-pass law prohibiting the issuance of free transportation to any individual except those excepted by the federal law has been passed by the Senate. Senator Waage has introduced Senate bill No. 538, authorizing the public ownership of utilities. This measure is the same as House bill No. 506. Several bills have been introduced re-enacting the 2-cent-fare law now in effect in Illinois. Senate bill No. 496, by Canaday, and House bill No. 738, by Dickman, provide that interurban trains shall carry one motorman and one conductor who shall have no duties but operating the train. A penalty of from \$100 to \$1,000 is provided for violation. House bill No. 656 protects telephone lines from induction by electric transmission lines. No other electric lines may be placed within 6 ft. of a telephone line. A minimum fine of \$50 is provided. Six months' time is given after the law is effective to make necessary changes.

Action on the Glackin public utilities bill, drafted by Mayor Carter Harrison of Chicago, was forestalled on April 30 by Senator Daly, Peoria, Ill., who raised the question of no quorum. Senator Glackin, who was presiding over the committee meeting, announced that the matter would have to go over. At the meeting of the committee on public utilities on April 30, Mayor Harrison announced his intention of drafting an amendment to the Glackin bill in accordance with the action taken previously by the City Council at Chicago. The Glackin bill, which was prepared in the office of Corporation Counsel Sexton of Chicago, under the direction of the Mayor, would create a State commission appointed by the Governor with authority over interurban utilities and a separate commission appointed by the Mayor with authority over the public service corporations which operate in Chicago. The amendment proposed by the Mayor would eliminate the Chicago commission and provide instead for the creation of a special body to investigate subjects at issue in Chicago and report to the City Council, which would have final power to regulate the utilities and rates in that city.

NEW YORK

The Legislature of New York adjourned on May 3 at 11 p. m. A total of 4073 bills was introduced in both houses during the sessions. This exceeds the record of 1912 by 42 per cent and the record of 1911 by 10 per cent. Of the bills introduced at the session 442 were enacted into law. Up to the time of adjournment only fifteen of the measures placed before the Governor had been vetoed. Two hundred and twenty-five measures were before the Governor for signature at that time. The most important action just before adjournment was the adoption in the Assembly of the Foley workmen's compensation bill. This measure is now before the Governor for signature. A division has been created in the department of conservation which is to undertake the development and distribution under State auspices of electric power generated from waters belonging to the State. The bills providing for the incorporation of the New York Stock Exchange and other exchanges and limiting the interest on call loans to 15 per cent were not enacted. The Goldberg blue-sky bill also was lost. The Governor withdrew the bill to double

the present tax on the transfer of stocks. The bill was passed broadening the responsibility of the Public Service Commissions by placing express companies and stage coach lines under their supervision. The Legislature enacted under an emergency message from Governor Sulzer the bill to extend the powers of the Board of Estimate of New York with regard to the right to issue franchises for bus lines, and the measure is now before the Governor and Mayor Gaynor.

OKLAHOMA

To define more clearly the powers of the Corporation Commission of Oklahoma, a bill prepared under the authorship of the secretary of the commission has been passed by the Legislature and signed by the Governor. This special statute gives the corporation commission "general supervision over all public utilities, with power to fix and establish rates and to prescribe rules, requirements and regulations affecting their services, operation and management and the conduct of their business." Although municipal plants of all kinds are explicitly excluded from coming under the provisions of the new law, the commission has with respect to privately owned utilities "full visitatorial and inquisitorial power to examine such utilities and keep informed as to their general condition, their capitalization, rates, plants, equipments, apparatus and other property owned, leased, controlled or operated, the value of same, the management, conduct, operation, practices and service," with respect to the adequacy, security and accommodation afforded by their service as well as their compliance with the provisions of the act. The commission is also to have powers to specify accounting methods and to institute examinations, meter tests, etc. On the last day of the session an amendment was offered bringing municipal plants under the jurisdiction of the commission, but this failed by one vote.

PENNSYLVANIA

Present indications are that the General Assembly will not reach final adjournment before June 15, and perhaps not before July 1, as a majority of the important progressive measures bearing the indorsement of the Republican State Convention still repose in Senate committees. The House of Representatives has passed the Philadelphia subway enabling act by a vote of 171 to 1, and the bill has been returned to the Senate for concurrence in amendments made in the House. These amendments fix a time limit in which work on a contract must be commenced after a franchise has been granted, and also provide that Councils of Philadelphia shall have supervision over the letting of sub-contracts.

The Senate bill extending for five years the time in which railroads and railways incorporated since 1903 may begin construction work has been placed on the postponed calendar in the House and is likely to remain there, it being considered a special privilege measure.

The House has passed three revenue-raising measures recommended by the State Tax Commission, one providing that the 4-mill tax now collected from owners of bonds and other obligations of corporations shall be collected direct from the corporations. Only a small part of this tax is now being collected under the present law. A bill repealing a law exempting savings funds from the 5-mill tax collectible from corporations was sent back to the ways and means committee of the House.

The third-class city commission government bill, which has passed the Senate, has been reported favorably to the House, with several minor amendments, one eliminating the clause making it optional whether a city of this class shall adopt this form of government. The measure carries the initiative and referendum features and would give third-class cities, similar to Harrisburg, more power over public service corporations.

It was expected that the public utilities bill would be reported from committee to the House during the week ended May 10.

The House has passed the bill providing for a constitutional amendment giving the initiative and referendum to the people. A similar bill providing for the recall was defeated by a vote of 107 to 78. The Governor has approved the semi-monthly pay bill, which affects electric and steam railways.

WISCONSIN

The bill introduced in January by Assemblyman Johnson relating to appeals to the state highway commission from the refusal of town boards to consent to the construction of electric lines on highways has been received from the Senate, concurred in and has been sent to the Governor for approval. The Assembly bill relating to the distribution of the street railway tax has been passed by the Assembly. Assembly Bill 232, to prevent the overcrowding of street cars, which was received from the committee on corporations of the Senate after being passed by the House, has been laid over by the Senate. A bill to amend the statutes relating to the acquiring of public utility properties by municipalities, making clearer the persons who are to be compensated by the municipalities, has been received from the Senate, concurred in and has been enrolled. Senate Bill 149, amending the statutes relating to appeals from decisions of the Railroad Commission, making the Dane County Circuit Court the initial court of appeal, has been received by the Assembly from the transportation committee and recommended for passage, after being passed by the Senate. Another Senate bill to amend the statutes relating to franchises of street railways has been recommended for non-concurrence in the House. A bill making changes in the time of purchase of street railways by municipalities is still in the House, where it does not seem likely to be concurred in.

PROGRAMS OF ASSOCIATION MEETINGS

Association of Railway Electrical Engineers.

The annual convention of the Association of Railway Electrical Engineers will be held at the Hotel La Salle, Chicago, Ill., Oct. 18 to 21, 1913, inclusive. The principal manufacturers of steam railroad electrical supplies will exhibit in the ballroom of the Hotel La Salle.

Central Electric Railway Association

Some of the plans for the next meeting of the Central Electric Railway Association have been completed. The hotel and arrangement committee is making arrangements for a trip by steamer to a lake port. This trip will extend through the Detroit River and St. Clair Flats and as far north as it is possible for the steamer to go and still make the return trip during the two days of the meeting. The business sessions in connection with the meeting will be held on the boat. It is announced that one of the best steamers on the Great Lakes will be chartered for this trip and that everything will be done that the committee can arrange to make the meeting enjoyable. The boat will start on Wednesday, June 25, and the meeting will be held commencing Thursday, June 26. Full information regarding the plans will be sent to the members of the association shortly.

American Society of Mechanical Engineers

The spring meeting of the American Society of Mechanical Engineers will be held at Baltimore, May 20 to 23, 1913. The headquarters of the society will be held at the Hotel Belvedere, where all of the official sessions and some of the social features will be held. Members and guests will be registered on May 20, and on the evening of that day there will be a reunion and informal reception. The business session will be opened at 9.30 a. m. on May 21. The program calls for the report on May 21 of the special committees on the myriawatt, involute gears, standardization of catalogs, code of ethics and national museum. During the sessions there will be a demonstration of the high-pressure fire service of Baltimore at the City Hall and an inspection of the pumping station. The session on the morning of May 22 will be devoted to the subject of fire protection. The program will be concluded with an excursion to Annapolis on May 23. After a reception at the State House by Governor Goldsborough the party will proceed to the Assembly Chamber, where Admiral H. I. Cone, engineer-in-chief of the bureau of steam engineering, U. S. N., will deliver an address upon the United States Experimental Station at Annapolis.

Financial and Corporate

ANNUAL REPORT

Illinois Traction Company

Stock and Money Markets

MAY 7, 1913.

The market to-day on the New York Stock Exchange opened low, but recovered later. The best prices of the day were obtained near the close. Both Union Pacific and Southern Pacific at the opening fell to a new low figure for the present decline, but developed a better tendency later with a little buying. New York Central sold off to a new low record for the year. Interborough-Metropolitan sold off easily, showing a decline of 1/4 points in a few minutes. Rates in the money market to-day were: Call, 2 3/4 @ 3 per cent; sixty days, 3 1/2 @ 3 3/4 per cent; ninety days and four months, 3 3/4 @ 4 per cent; five and six months, 4 @ 4 1/2 per cent; nine and ten months, 4 3/4 @ 5 per cent.

Trading in the Philadelphia market was light to-day, but the tone was stronger.

Commonwealth Edison and Chicago Railways series 2's were very weak on the Chicago stock exchange to-day.

Irregularity characterized the stock market in Boston during the greater part of the session to-day.

The transactions on the Baltimore exchange were well scattered to-day, but the volume of trading was light.

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

	April 30	May 7
American Brake Shoe & Foundry (common).....	95	92
American Brake Shoe & Foundry (preferred).....	132	130
American Cities Company (common).....	37 3/4	37 1/2
American Cities Company (preferred).....	*70 1/2	70 1/8
American Light & Traction Company (common).....	355	380
American Light & Traction Company (preferred).....	105	106
American Railways Company.....	38	37 3/4
Aurora, Elgin & Chicago Railroad (common).....	42	42
Aurora, Elgin & Chicago Railroad (preferred).....	84 1/2	84
Boston Elevated Railway.....	93	89 1/2
Boston Suburban Electric Companies (common).....	7 1/2	7 1/2
Boston Suburban Electric Companies (preferred).....	a66	a66
Boston & Worcester Electric Companies (common)....	a8	a8
Boston & Worcester Electric Companies (preferred)...	43	43
Brooklyn Rapid Transit Company.....	87 3/4	89 3/4
Capital Traction Company, Washington.....	122 1/4	120 3/4
Chicago City Railways.....	*150	..
Chicago Elevated Railways (common).....	*25	..
Chicago Elevated Railways (preferred).....	*85	..
Chicago Railways, pteptg., ctf. 1.....	*91	..
Chicago Railways, pteptg., ctf. 2.....	*21 3/4	..
Chicago Railways, pteptg., ctf. 3.....	*7 1/2	..
Chicago Railways, pteptg., ctf. 4.....	*3 1/2	..
Cincinnati Street Railway.....	112 1/2	115
Cleveland Railway.....	103	103 1/4
Cleveland, Southwestern & Columbus Ry. (common)...	*5 1/2	5 1/2
Cleveland, Southwestern & Columbus Ry. (preferred)...	*30	28 1/4
Columbus Railway & Light Company.....	18	18
Columbus Railway (common).....	69 1/2	69 1/2
Columbus Railway (preferred).....	82 1/2	82 1/2
Denver & Northwestern Railway.....	*109	109
Detroit United Railway.....	a76	72
General Electric Company.....	137 1/2	138 1/2
Georgia Railway & Electric Company (common).....	119 1/2	119
Georgia Railway & Electric Company (preferred).....	83	83 3/4
Interborough Metropolitan Company (common).....	14 1/2	14 1/2
Interborough Metropolitan Company (preferred).....	48 3/8	50 1/2
International Traction Company (common).....	*35	40
International Traction Company (preferred).....	*95	95
Kansas City Railway & Light Company (common)....	*15	..
Kansas City Railway & Light Company (preferred)....	*30	..
Lake Shore Electric Railway (common).....	*6 1/2	9
Lake Shore Electric Railway (1st preferred).....	*91	91
Lake Shore Electric Railway (2d preferred).....	*25 1/2	25
Manhattan Railway.....	127	127
Massachusetts Electric Companies (common).....	16 1/2	16
Massachusetts Electric Companies (preferred).....	74 1/2	72 1/2
Milwaukee Electric Railway & Light Co. (preferred)...	*100	100
Norfolk Railway & Light Company.....	*25 3/4	26 1/2
North American Company.....	75	75
Northern Ohio Light & Traction Company (common)...	80	80
Northern Ohio Light & Traction Company (preferred)...	105	105
Philadelphia Company, Pittsburgh (common).....	43 1/2	44
Philadelphia Company, Pittsburgh (preferred).....	39	39 1/2
Philadelphia Rapid Transit Company.....	24	23 3/8
Portland Railway, Light & Power Company.....	*67	67 1/2
Public Service Corporation.....	114	114
Third Avenue Railway, New York.....	33 1/2	a34 1/4
Toledo Railways & Light Company.....	a12	12
Twin City Rapid Transit Co., Minneapolis (common)...	103	103 1/2
Union Traction Company of Indiana (common).....	*4 1/2	7 1/2
Union Traction Company of Indiana (1st preferred)...	*81	82
Union Traction Company of Indiana (2d preferred)...	*34	32
United Rys. & Electric Company (Baltimore).....	26 1/4	27
United Rys. Inv. Company (common).....	24	23
United Rys. Inv. Company (preferred).....	44	46
Virginia Railway & Power Company (common).....	50	50
Virginia Railway & Power Company (preferred).....	90	90
Washington Ry. & Electric Company (common).....	91	91 1/2
Washington Ry. & Electric Company (preferred).....	91	91 3/4
West End Street Railway, Boston (common).....	75	74
West End Street Railway, Boston (preferred).....	95	90
Westinghouse Elec. & Mfg. Company.....	61	61
Westinghouse Elec. & Mfg. Company (1st preferred)...	117 1/2	105

*Last sale. aAsked.

The earnings of the Illinois Traction Company, Peoria, Ill., for the year ended Dec. 31, 1912, compared with those for the preceding year, are as follows:

Earnings:	1911	1912
Interurban lines	\$2,864,793	\$2,964,955
City lines	1,950,880	2,030,994
Gas	383,325	428,977
Electric	1,473,937	1,689,477
Heat	197,738	219,170
Miscellaneous	31,548	82,074
Total gross earnings	\$6,902,221	\$7,415,647
Total operating expenses and taxes.....	4,133,641	4,353,214
Net from operating	\$2,768,580	\$3,062,433

There was deducted from the net revenue for 1912 as shown above \$1,975,968 for interest on bonds, etc., which left \$1,086,464 available for dividends. After a deduction of 6 per cent dividends on the preferred stock, a net surplus of \$741,917 was left for the year.

During the year there was expended for maintenance and renewals the sum of \$1,168,670, which was 15.7 per cent of the gross receipts, as against \$1,012,864, which was 14.7 per cent of the gross receipts of the preceding year. During the year there was also expended for improvements on the properties controlled by the company \$1,106,420.

In a letter to the shareholders of the company signed by W. B. McKinley, president, and H. E. Chubbuck, vice-president executive, the following information was submitted by the board of directors:

"During the year the company has shown most satisfactory progress. The increase in the gross and net earnings and surplus are very gratifying. The results of the system for the year show an increase over the preceding year in gross revenue from operation of \$513,426, or 7.43 per cent; an increase over the preceding year in net earnings from operation of \$293,853, or 10.61 per cent; an increase over the preceding year in net surplus of \$176,834, or 31.29 per cent.

"The net surplus of the system for the year after paying 6 per cent dividends on the company's preferred stock was \$741,917, equivalent to 7.43 per cent upon the common stock of the company, as against 5.66 per cent for the preceding year. The surplus account therefore stood at Dec. 31, 1912, as follows:

Balance brought forward from 1911.....	\$1,988,233
Net surplus for 1912.....	741,917
	<hr/>
Appropriated for depreciation (in addition to \$832,885 charged to operating account for maintenance, betterments and renewals).....	\$335,785
Bond discount of controlled companies.....	43,482
Balance carried forward for 1912.....	\$2,350,883

"The sleeping car service between Peoria, Springfield and St. Louis has shown a steady improvement and the receipts have increased 33 per cent over the previous year.

"The management has given much consideration during the year to the question of solving freight traffic problems, broadening the carload business and increasing terminal facilities by connection with steam railroads. A contract was entered into with the Wabash Railroad for a physical connection and general interchange at Decatur. This gives us a working arrangement now with all the steam roads in our territory that can be of benefit to us, except the Pennsylvania and New York Central lines. There should be a gradual increase in the freight traffic during 1913. During the year fifty box cars, seventy-five coal cars, five refrigerator cars and twenty-five cinder cars were purchased, made necessary by the increased freight business. Additional elevators have been built to be served by our lines and connections made with other industries, such as coal mines, brick yards, warehouses, etc.

"The protection in the operation of the trains afforded by the automatic electric block signals, and the feeling of safety imbued in the minds of the traveling public by these signals, have proved further the wisdom of their installation. The trackage between St. Louis and the cities of Granite City, Madison and Venice, including the St. Louis bridge, has been protected by the installation of a signal system early this year.

"A contract was made for the installation of a 5000-kw turbine unit at Venice, which additional capacity will be required to take care of the heavy power business to be secured in that territory.

"The several small properties acquired by the company this year comprise the Carlinville Utilities Company, serving gas and electricity to Carlinville, county seat of Macoupin County; the Georgetown Electric Company, serving electricity to Georgetown, Indianola, Vermilion Grove, Ridge Farm, Sidell and Chrisman, to be connected with the Danville plant by a transmission line; the electric plants at El Paso, Gridley and Chenoa, to be served by transmission line from Bloomington, and the Morton Light, Heat & Power Company, serving electricity to Morton and Tremont.

"The Illinois Traction System is furnishing forty-eight cities and villages with electric light and power.

"Late in the year a site was purchased at Peoria, near the business center of the city, on which next year will be erected a seven-story terminal and office building. At Champaign also a site, advantageously located, was acquired on which will be erected next year a three-story building for the Champaign offices of the company. The new freight house and office building at Springfield, remodeled for the company under a long-term lease, was occupied in the early summer by the operating officials at Springfield.

"The operating engineering department, a newly created department for the purpose of bringing about operating economies, has secured the results anticipated and will be continued on an enlarged basis.

"The relations between the management and the employees continue to be favorable and there have been no labor difficulties during the year. Contracts entered into between the employees and the company have been carefully observed both by the employees and the company, and the labor situation is very harmonious."

Accountants' Report on Railway Earnings in Toledo

There was a large increase in the gross receipts of the railway department of the Toledo Railways & Light Company, Toledo, Ohio, but the net earnings of the railway department of the company were \$225,000 less in 1912 than in 1911, according to a report for the year filed with Mayor Whitlock by Nau, Rusk & Swearingen, expert accountants of Cleveland. The report shows also that 6,453,282 more revenue passengers were carried in 1912 than in 1911 and this increase is said to exceed the anticipated increase due to the natural growth of the city for ten years. The new low-fare arrangement is believed to be responsible for a large per cent of the increase. In 1912 43,653,159 pay passengers were carried while in 1911 the total was 37,199,877. The net earnings for 1912 were reduced greatly according to the report by the large increase in the operating expenses during the year. Operation cost the company more than \$1,000,000, while the expense for operation in 1912 was \$810,000. Net earnings per car mile have been reduced from 10.58 cents in 1909 to 5.70 cents in 1912.

A comparison of the gross earnings and operating expenses for the years 1909 to 1912 inclusive shows a reduction of \$300,000 in the net savings of the company between the year 1909 and the year 1912. The gross earnings, however, were about \$200,000 more in 1912 than in 1909. The tables for the four years are as follows:

1909—Gross earnings, \$1,692,042; operating expenses, \$685,120; maintenance, \$237,214; net earnings, \$733,698. Net earnings per car mile, 10.58 cents.

1910—Gross earnings, \$1,819,506; operating expenses, \$767,095; maintenance, \$399,141; net earnings, \$653,270. Net earnings per car mile, 9 cents.

1911—Gross earnings, \$1,920,698; operating expenses, \$810,216; maintenance, \$449,281; net earnings, \$661,200. Net earnings per car mile, 8.83 cents.

1912—Gross earnings, \$1,895,317; operating expenses, \$1,008,247; maintenance, \$454,933; net earnings, \$432,136. Net earnings per car mile, 5.70 cents.

The gross earnings include revenue received from passengers, suburban cars, rent on property owned by the company, advertising and miscellaneous sources.

The accountants were retained by the city that results

of the low-fare arrangement which has prevailed during the year might be determined. A partial report, covering nine months on the fare schedule of 3 cents during the rush hours and six tickets for a quarter at all other times, was submitted some time ago by the experts. They were instructed to continue their investigation and make a report on the whole year's operations. The report presents only facts and figures. No conclusion as to rates of fare for profitable operation of the lines is given. An extended reference was made in the ELECTRIC RAILWAY JOURNAL of Feb. 8, 1913, page 263, to the report of Nau, Rusk & Swearingen on earnings in Toledo for the nine months during which the reduced fare was in effect.

Details of Merger of Ohio and Michigan Properties

The details have been made public in regard to the acquisition of the property of the Union Railway Gas & Electric Company, Rockford, Ill., the Michigan Railways Company and the Springfield (Ohio) Light Company by the Commonwealth Power, Railway & Light Company, Saginaw, Mich., which was noted in the ELECTRIC RAILWAY JOURNAL of May 3, 1913, page 830.

According to the banker's circular dated April 26, 1913, under a contract executed on April 15, the Commonwealth Power, Railway & Light Company agrees to deliver \$7,500,000 five-year 6 per cent convertible bonds, \$10,000,000 of preferred stock and \$9,000,000 of common stock (\$3,500,000 at this time, \$2,500,000 on May 1, 1915, and \$3,000,000 on May 1, 1916) in acquisition of (a) \$7,125,000 cash, (b) \$5,250,000 of preferred stock and \$6,000,000 of common stock of the Union Railway, Gas & Electric Company, (c) \$500,000 of preferred stock and \$500,000 of common stock of the Springfield Light Company, and (d) \$10,000,000 of common stock of the Michigan Railways Company.

The outstanding capitalization of the Commonwealth Power, Railway & Light Company after the issue of the new securities mentioned above will be: five-year 6 per cent convertible bonds, \$7,500,000; 6 per cent preferred stock, \$16,000,000; common stock issued and outstanding, \$15,500,000; common stock to be issued May 1, 1915, \$2,500,000, and common stock to be issued May 1, 1916, \$3,000,000.

The terms proposed for the exchange of securities follow:

	Offered in Exchange	
	New Preferred	New Common
Commonwealth, preferred.....	100%—\$6,000,000	10%—\$600,000
Commonwealth, common.....	.....	100%—12,000,000
Union, preferred.....	100%—5,250,000	10%—525,000
Union, common.....	.....	100%—6,000,000
Springfield, preferred.....	100%—500,000	.....
Springfield, common.....	.....	100%—500,000
Michigan, common.....	.....	20%—2,000,000

	Or Optionally	
	New Preferred	New Common
Commonwealth, preferred.....	.....	.....
Commonwealth, common.....	25%—\$3,000,000	75%—\$9,000,000
Union preferred.....	.....	.....
Union, common.....	25%—1,500,000	75%—4,500,000
Springfield, preferred.....	.....	.....
Springfield, common.....	.....	.....
Michigan, common.....	.....	.....

(Deliverable May 1, 1915)

Stocks are to be deposited under this plan on or before May 14, 1913. Stockholders of the Commonwealth company so depositing are entitled to subscribe at 95 and interest to the five-year 6 per cent convertible bonds to an amount not exceeding the even \$100 next above 30 per cent of the par value of stock so deposited, and stockholders of the Union company to an amount not exceeding the even \$100 above 20 per cent of the par value of the stock so deposited; and they will receive full allotment under such subscriptions.

The cash paid into the treasury under the contract in the amount of \$7,125,000 will be disposed of as follows: \$2,000,000 for retiring the note issue of the company maturing on June 10, 1913, and \$3,600,000 for acquiring \$2,100,000 of preferred stock and approximately \$1,500,000 of notes of the Michigan Railways Company, leaving a remainder of \$1,525,000 available for the purposes of the company.

The regular yearly requirements for improvements, betterments and extensions to the Commonwealth, Union and Springfield properties can be provided by the sale of bonds and preferred stocks of the underlying companies. In order to provide for the completing of the interurban lines from Grand Rapids to Kalamazoo, from Allegan to Battle Creek, and another hydroelectric plant on the Manistee River, it is

proposed to sell a short-term note issue secured by the railway and the Manistee properties until such time as the new properties are in full operation, when a bond issue can be sold to better advantage than during construction.

Stability of Public Utilities

Henry L. Doherty & Company, New York, N. Y., issued a circular on April 23 to indicate the stability of public utility securities. It contains charts based on the operation of the gas and electric companies in most of the large cities in the United States, all of the steam railroads in the country and the large industrial companies whose securities are listed on the New York Stock Exchange and whose figures were available as far back as 1902. One chart shows the increases in outstanding securities of the three classes of companies during the period of ten years from 1902 to 1911 covered by the study. Another chart shows the relative increases and decreases in the net earnings of the same properties. This chart is similar to that published by Doherty & Company in December, 1911, but the figures have been extended since then to include the operations for the year 1912. Another chart shows the net earnings for the same group of companies per \$100 of outstanding securities year by year, together with the average for the ten years.

The increase in outstanding securities of gas and electric companies from 1902 to 1911 was 110 per cent; it was about 54 per cent in the case of the steam railroads and about 17 per cent for the industrial properties. The net earnings of the gas and electric properties during this period increased about 100 per cent as compared with an increase of about 40 per cent for the steam railroads and a decrease of about 10 per cent for the industrials. The net earnings of gas and electric properties per \$100 of outstanding securities decreased from \$9 in 1902 to about \$8.50 in 1911, and showed an average per year for this period of \$8.45. The industrial companies decreased from about \$8.75 in 1902 to about \$7 in 1911 and their average for the period was \$7.79 per year. The steam railroads decreased from more than 4 per cent to 4 per cent and showed an average of \$1.25 per year for the period. The largest fluctuations in net earnings from year to year and in net earnings per \$100 of outstanding securities were shown by the industrial properties.

A chart is also reproduced which was first published by Doherty & Company on Feb. 20, 1913, as an indication of the relative security of the different groups of properties. The average annual amount of securities in receivers' hands per \$100 of outstanding securities for the various classes of properties during the period of thirty years from 1882 to 1911, inclusive, was as follows: Gas and electric companies, 37 cents; national banks, \$1.93, of which 32 cents represented insolvent institutions and \$1.61 banks that went into voluntary liquidation; railroads, \$1.84; industrials, \$2.07.

Another chart published in the circular combines the average net earnings per \$100 of outstanding securities and the average results of receiverships of properties.

Proposed Merger of Chicago Surface Lines

The abrupt halt in the proceedings looking toward the merging of the surface and elevated systems of the city of Chicago was noted in the *ELECTRIC RAILWAY JOURNAL* for May 3, 1913. Negotiations for the merging of the two surface lines, without the elevated system, have been opened again. On May 1 Henry A. Blair and Ira M. Cobe, representing the Chicago Railways and the Chicago City Railway, respectively, were in conference concerning the merger of the surface lines.

Brantford (Ont.) Street Railway.—The action of the city of Brantford against the Brantford Street Railway to recover tax arrears amounting to \$47,000 will be tried soon, and it is expected that the franchise under which the company now operates will be canceled. A proposition to take over the property will probably be submitted to ratepayers of Brantford before the end of the year.

Brooklyn (N. Y.) Rapid Transit Company.—Since June 30, 1912, the holders of \$2,130,000 of the first refunding 4 per cent convertible bonds of the Brooklyn Rapid Transit Com-

pany have exercised their right to exchange the bonds for stock. Previous to June 30, 1912, only one bond for \$1,000 had been converted. The time for conversion expires on July 1, 1914. The total issue of convertible bonds authorized is \$150,000,000. About \$38,000,000 of the bonds are outstanding, the balance being pledged as collateral, in the treasury or reserved to retire bonds of constituent companies.

Cleveland & Eastern Traction Company, Cleveland, Ohio.—The Cleveland & Eastern Traction Company has applied to the Public Service Commission of Ohio for authority to issue \$54,000 of first mortgage bonds, together with \$32,400 of preferred and \$27,000 of common stock for improvements. It is the desire of the company to sell the bonds at 80 per cent, the bonds being accompanied by 60 per cent of preferred and 50 per cent of common stock.

Hartford & Springfield Street Railway, Warehouse Point, Conn.—This month the Hartford & Springfield Street Railway has omitted to declare the dividend usually paid on the \$285,000 of 6 per cent non-cumulative preferred stock. In 1912 a 2 per cent dividend was paid semi-annually.

Indianapolis & Cincinnati Traction Company, Indianapolis, Ind.—The Indianapolis & Cincinnati Traction Company has acquired control of the Cincinnati & Westwood Railroad, a 5½-mile narrow-gauge road extending from Westwood, on the boundary line of Cincinnati, to Brighton, within the corporate limits of the city. The purchase is made in the hope that the plan of Mayor Hunt to allow the interurban road to reach the heart of Cincinnati will go through. The Indianapolis & Cincinnati Traction Company's line extends from Indianapolis to Rushville and Connersville, 55 miles. It is stated that the company has secured nine-tenths of the right-of-way from Connersville to Harrison, on the Indiana-Ohio line, and about one-half of the right-of-way from Harrison to Miami, which is half-way to Westwood. The distance from Harrison to Rushville is about 64 miles.

Interborough Rapid Transit Company, New York, N. Y.—T. P. Shonts, president of the Interborough Rapid Transit Company, said on April 25, 1913, in discussing the raising of funds to fulfil the conditions of the subway contracts: "The Interborough Rapid Transit Company has delivered to Morgan & Company bonds covering the \$15,000,000 which is this year's requirements for subway construction purposes in accordance with the agreement with the city. It also has the money on deposit to take up the \$15,000,000 of notes which become due on May 1. The 5 per cent bonds of the Interborough Rapid Transit Company are subject to retirement on Nov. 1, and will be retired on or before that date, in accordance with the provisions of the mortgage. Inasmuch as the contract with the city was not signed until March 19, 1913, whereas it had been expected that the contract would be signed in the fall of 1912, the company arranged with the bankers in the interest of the company to change the annual requirement from the fiscal year to the calendar year. There has not been any delay or postponement in the Interborough company's financial plans. These financial plans cover not only financial requirements of the company for construction and equipment purposes, so far as the contract between the city and the company is concerned relative to subway matters, but also cover the requirements for construction and equipment purposes for the improvement of the elevated lines of the Manhattan Railway." The directors of the Interborough Rapid Transit Company declared an extra dividend of 2 per cent on April 30, 1913, payable out of the earnings from the elevated and subway lines. As the Interborough-Metropolitan Company owns about \$34,000,000 out of the Interborough's \$35,000,000 of stock, practically all of the extra payment, or about \$680,000, will go to the holding company.

Joplin & Pittsburg Railway, Pittsburg, Kan.—The Public Service Commission of Missouri has approved the application of the Joplin & Pittsburg Railway for permission to issue \$1,050,000 of 6 per cent refunding bonds.

Kansas City Railway & Light Company, Kansas City, Mo.—A member of the committee representing the first lien refunding 5 per cent gold bonds of the Kansas City Railways & Light Company, maturing on May 15, 1913, says that the deposits up to May 1 with the New York

Trust Company as depositary were very large. The time for deposits, however, is to be extended a certain number of days to be announced later in order to give others the privilege of turning in their holdings.

Lackawanna & Wyoming Valley Rapid Transit Company, Scranton, Pa.—Pursuant to a foreclosure decree by the United States District Court involving a mortgage and deed of trust made by the Lackawanna & Wyoming Valley Rapid Transit Company to the Standard Trust Company, New York, on May 1, 1903, there will be sold at public auction at the county court house in New York County at noon on May 29, 1913, bonds and stocks including the following: \$2,512,000 principal amount 5 per cent fifty-year collateral trust gold bonds of the Lackawanna & Wyoming Valley Rapid Transit Company; \$2,050,000 face value mortgage bonds and \$748,750 capital stock of the Scranton & Northeastern Railroad; \$1,250,000 mortgage bonds and \$248,750 stock of the Central Valley Railroad; \$1,600,000 mortgage bonds and \$598,750 stock of the Lackawanna & Wyoming Valley Railroad; \$750,000 mortgage bonds and \$250,000 stock of the Wilkes-Barre Railroad; \$850,000 mortgage bonds of the Lackawanna Tunnel Company, and other securities.

Lake View Traction Company, Memphis, Tenn.—The property of the Lake View Traction Company has been conveyed to the Memphis Street Railway in accordance with the terms of purchase reported in the ELECTRIC RAILWAY JOURNAL of March 29, 1913, page 604.

Massachusetts Consolidated Railways, Greenfield, Mass.—The following notice was issued under date of May 7, 1913, by D. P. Abercrombie, Jr., secretary and treasurer: "By vote of the trustees and of the shareholders of Massachusetts Northern Railways, and in accordance with the provisions of the agreement and declaration of trust, dated Nov. 16, 1911, the name by which the said trustees, in their collective capacity, are designated and under which they act has been changed to Massachusetts Consolidated Railways. Commencing with this date all the business of this association will be transacted under the name of Massachusetts Consolidated Railways."

Northern Massachusetts Street Railway, Athol, Mass.—The following notice was issued under date of May 1, 1913, by D. P. Abercrombie, Jr., clerk and treasurer: "By vote of the stockholders of the Athol & Orange Street Railway Company, and by the authority of the Board of Railroad Commissioners granted on April 15, 1913, the name of the company has been changed to Northern Massachusetts Street Railway Company, and the said change of name has now become effective by the issuance of a certificate to that effect by the Secretary of the Commonwealth, dated April 30, 1913. Commencing with this date all the business of the company will be transacted under the name of Northern Massachusetts Street Railway Company."

Ohio Electric Railway, Cincinnati, Ohio.—The Public Service Commission of Ohio has authorized the Ohio Electric Railway to issue 5 per cent second mortgage bonds to the amount of \$3,500,000, to be sold for not less than 80. The proceeds derived from the sale of these bonds are to be used to rehabilitate the property damaged by the floods of March and April, 1913, construct additions and improvements and discharge certain indebtedness incurred by the company. The company is to call in shares of the common stock or certificates representing such shares of the aggregate value of \$5,000,000, and cancel them. In case this reduction of outstanding capital stock is not made, the authority for the \$3,500,000 bond issue is to be revoked by the commission.

Pekin & Petersburg Interurban Railway, Pekin, Ill.—A suit in foreclosure has been instituted by M. D. Conaghan, trustee, and Adam Saal, holder of a majority of the first mortgage and debenture bonds of the Pekin & Petersburg Interurban Railway, against that company, J. E. Melick, both as president of the company and as an individual; Mrs. J. E. Melick, who claims ownership of part of the charging station; James E. Edds, owner of property on which the charging station is located, and the city of Pekin. A petition has also been filed for an injunction to restrain Mr. Melick from disposing of or transferring first mortgage bonds to the amount of \$8,000 which he is believed to possess.

Toledo Railways & Light Company, Toledo, Ohio.—The hearing in the injunction suit of the Toledo Traction, Light & Power Company against Barton Smith and others was resumed before Judge Killits of the federal district court at Toledo, Ohio, on May 1. Mr. Smith appeared before the court on May 1. On May 3 W. E. Hutton, Cincinnati, former director of the Toledo Railways & Light Company and a member of the stockholders' reorganization committee, testified. Albion E. Lang, former president of the Toledo Railways & Light Company, questioned on May 3 in regard to the sale of the property of the Toledo Traction Company to the Toledo Railways & Light Company, referred Mr. Smith to the records for the information. The presentation of an affidavit from W. W. Miller completed the session on May 3.

Dividends Declared

- Cape Breton Electric Company, Ltd., Sydney, N. S., \$3, preferred; \$3, common.
- Connecticut Railway & Lighting Company, Bridgeport, Conn., quarterly, 1 per cent, common and preferred.
- Cumberland County Power & Light Company, Portland, Maine, quarterly, 1½ per cent, preferred.
- Detroit (Mich.) United Railway, quarterly 1½ per cent.
- Lincoln (Neb.) Traction Company, quarterly, 1½ per cent, preferred.
- Ohio Traction Company, Cincinnati, Ohio, quarterly, 1¼ per cent, preferred.
- Portland Railway, Light & Power Company, Portland, Ore., quarterly, 1¼ per cent.
- Tampa (Fla.) Electric Company, quarterly, 2½ per cent.
- Union Street Railway, New Bedford, Mass., quarterly, 2 per cent.

ELECTRIC RAILWAY MONTHLY EARNINGS

JACKSONVILLE (FLA.) TRACTION COMPANY							
Period			Gross Earnings	Operating Expenses	Net Earnings	Fixed Charges	Net Surplus
1 mo.	Feb.	'13	\$49,555	*\$33,670	\$15,885	\$10,819	\$5,067
1 "	"	'12	45,912	*31,130	14,782	9,463	5,319
12 "	"	'13	566,126	*382,671	183,455	122,106	61,349
12 "	"	'12	563,600	*350,301	213,299	103,766	109,533
JOPLIN & PITTSBURG RAILWAY, PITTSBURG, KAN.							
1 mo.	Mar.	'13	\$46,370	*\$26,922	\$19,448	\$12,542	\$6,906
1 "	"	'12	40,583	*25,403	15,180	12,923	2,257
12 "	"	'13	417,330	*242,306	175,124	112,875	62,249
12 "	"	'12	370,939	*215,785	155,154	116,236	38,918
LEWISTON, AUGUSTA & WATERVILLE STREET RAILWAY, LEWISTON, MAINE							
1 mo.	Feb.	'13	\$41,349	*\$30,778	\$10,571	\$14,485	†\$3,914
1 "	"	'12	37,213	*31,354	5,859	14,443	†8,584
12 "	"	'13	631,259	*388,870	242,589	173,146	69,443
12 "	"	'12	590,820	*367,832	222,988	168,909	54,079
NASHVILLE RAILWAY & LIGHT COMPANY, NASHVILLE, TENN.							
1 mo.	Feb.	'13	\$171,322	*\$103,580	\$67,742	\$37,088	\$30,654
1 "	"	'12	159,939	*98,685	61,254	34,813	26,441
12 "	"	'13	2,106,238	*1,205,393	900,845	439,359	461,486
12 "	"	'12	1,976,672	*1,140,826	835,846	407,336	428,510
NEW ORLEANS RAILWAY & LIGHT COMPANY, NEW ORLEANS, LA.							
1 mo.	Feb.	'13	\$583,007	*\$298,852	\$284,156	\$191,332	\$92,824
1 "	"	'12	561,705	283,377	278,328	182,515	95,813
3 "	"	'13	1,777,637	897,354	880,283	573,055	307,228
3 "	"	'12	1,736,710	864,367	866,343	548,566	317,778
NORTHERN OHIO TRACTION & LIGHT COMPANY, AKRON, OHIO							
1 mo.	Feb.	'13	\$222,570	*\$138,129	\$84,441	\$45,197	\$39,244
1 "	"	'12	198,209	*119,556	78,654	43,821	34,833
2 "	"	'13	460,036	*280,379	179,657	89,868	89,789
2 "	"	'12	407,598	*242,091	165,507	87,646	77,861
NORTHERN TEXAS COMPANY, FORT WORTH, TEX.							
1 mo.	Feb.	'13	\$142,784	*\$84,318	\$58,466	\$24,646	\$33,820
1 "	"	'12	113,488	*67,839	45,649	20,846	24,804
12 "	"	'13	1,862,411	*981,299	881,112	273,865	607,247
12 "	"	'12	1,617,961	*890,878	727,083	251,396	475,687
PADUCAH TRACTION & LIGHT COMPANY, PADUCAH, KY.							
1 mo.	Feb.	'13	\$24,372	*\$15,490	\$8,882	\$7,323	\$1,558
1 "	"	'12	22,930	*16,486	6,444	7,058	†614
12 "	"	'13	289,952	*190,593	99,359	86,880	12,479
12 "	"	'12	270,427	*170,424	100,003	82,121	17,882
PENSACOLA (FLA.) ELECTRIC COMPANY							
1 mo.	Feb.	'13	\$22,506	*\$14,113	\$8,393	\$6,369	\$2,024
1 "	"	'12	23,015	*14,076	8,938	6,377	2,561
12 "	"	'13	288,976	*177,557	111,419	76,384	35,035
12 "	"	'12	287,303	*180,282	107,021	64,262	42,759
PUGET SOUND TRACTION, LIGHT & POWER COMPANY, SEATTLE, WASH.							
1 mo.	Feb.	'13	\$653,734	*\$409,552	\$246,182	\$167,095	\$79,088
1 "	"	'12	661,206	*374,243	286,963	156,010	130,954
12 "	"	'13	8,289,230	*4,833,168	3,456,061	1,997,667	1,458,395

*Includes taxes. †Deficits.

Traffic and Transportation

Recommendations in Regard to Service in Worcester

In an order issued on April 29, 1913, the Railroad Commission of Massachusetts, in the petition of E. H. Vaughan, city solicitor of Worcester, Mass., made the following recommendations to the Worcester Consolidated Street Railway:

"That the Worcester Consolidated Street Railway take immediate steps to provide sufficient power not only to operate, heat and light its present equipment properly, but to provide in advance for the future transportation needs of the territory it serves and to make adequate provision for the duplication of power facilities in order that the serious interruptions to traffic that occur from time to time may be obviated.

"That the Worcester Consolidated Street Railway take immediate steps to provide a sufficient number of cars to enable it to keep its equipment properly cleaned and repaired and provide a reasonable service during rush hours.

"That the Worcester Consolidated Street Railway provide proper facilities to enable its officers and employees to reach the various parts of its system promptly in cases of emergency."

With reference to the complaint made of irregularity in the operation of cars the board is of the opinion that when the above recommendations have been complied with the service rendered by the company in this respect will be materially improved.

The board made no recommendation with respect to the supplemental petition concerning the re-routing of cars in Worcester as it is of the opinion that this matter can be considered more intelligently when the improvements suggested have been carried out.

Henry C. Page, general manager of the company, says: "We have already made provision to remedy every defect which the commissioners point out in their findings.

"We have taken care of our entire system on the north, leaving only Millbury and the Charlton City ends not actually cared for.

"The Millbury end will be taken care of by May 10, we expect, and a cross-country high-tension line from Millbury to Oxford is now being built, by which we can take care of Charlton City. This will give us Connecticut River power all over our system for the operation of our cars. In addition we have the present system in reserve.

"This Connecticut power will come over high-tension lines and will be transformed into power suitable for our use. Our engineers laid plans for this additional power two years ago and since that time we have been working on this plan of development. This spring several cars ordered a year ago have been delivered, and twenty more cars for the Worcester system have been ordered."

Near-Side Stops in Springfield.—The Springfield (Ohio) Railway placed in effect on May 1, 1913, a near-side stop order complying with an ordinance adopted recently by the City Council.

Vacation Suggestions.—The Winona Interurban Railway, Winona, Ind., is distributing a series of picture post cards which deal with the attractions which are to be found along the lines of the company by vacationists.

Increase in Wages in Parkersburg.—The Parkersburg, Marietta & Interurban Railway, Parkersburg, W. Va., has voluntarily increased the pay of all motormen and conductors from 1 cent to 3 cents an hour, depending on seniority of service.

Increase in Wages in Windsor.—The Sandwich, Windsor & Amherstburg Railway, Windsor, Ont., has granted its employees an increase in wages of half a cent an hour. At present the employees of long service receive 22 cents and 23 cents an hour for a ten-hour day.

Fare Boxes in Des Moines.—The Des Moines (Ia.) City Railway proposes to install fare boxes on the twenty street cars operating on the University line. Fifteen new street cars will be put in service on the University line. The steps of the new car are equipped so that they are drawn up when the car doors are closed.

No Smoking on Interurban Cars in Kansas City.—The cars of the interurban railways which enter Kansas City, Mo., over the lines of the Metropolitan Street Railway are subject to the jurisdiction of that company, and John M. Egan, president of the Metropolitan Street Railway, has issued an order that smoking will not be permitted hereafter on interurban cars within the city limits while being operated over the tracks of that company.

Express Service in Boston.—The Boston (Mass.) Elevated Railway has placed in operation an express service during the evening rush hour on three Somerville and Medford lines, running from Sullivan Square. The Medford-Hillside cars operate between Sullivan Square and the top of Winter Hill from 5.30 p. m. to 6.30 p. m., without stopping to discharge passengers. Between 5 p. m. and 6.30 p. m. cars on the Woburn and West Medford lines do not stop between Sullivan Square and Winter Hill except to take on passengers.

Traffic Agreement in Peoria.—An agreement has been reached between the Peoria & Pekin Terminal Railway and the Illinois Traction System, Peoria, Ill., whereby the former will run its cars up Adams Street in Peoria, around the Public Square to the terminal of the Illinois Traction System, over the tracks of the Illinois Traction System and the Peoria Railway and out again. The contract runs for one year with the privilege of renewal at the end of one-year periods. This contract also calls for the sale of power by the Illinois Traction System to the Peoria & Pekin Terminal Railway.

Continuing Trip Concession in Brooklyn.—The management of the Brooklyn (N. Y.) Rapid Transit Company has arranged to furnish continuing trip tickets, good for a cash transfer, to passengers boarding the Flatbush-Seventh Avenue line cars by mistake and desiring to continue their journey along Flatbush Avenue beyond the point where those cars turn into Seventh Avenue. This concession on the part of the company ends a proceeding which has been pending before the Public Service Commission for the First District on a complaint from citizens against the misleading designation of such cars.

Resuming Through Service Between Louisville and Indianapolis.—May 1, 1913, was fixed as the date for resuming through service from Louisville, Ky., to Indianapolis, Ind., via electric railway. A considerable amount of track of the Indianapolis, Columbus & Southern Traction Company was washed away by the flood, and a large force of laborers working night and day was required to repair the line. The Indianapolis & Louisville Traction Company and the Louisville & Southern Indiana Traction Company, operating out of Louisville, have been running regular cars only as far north as Seymour, Ind.

"Safety First" Watch Fobs.—The motormen and conductors of the Georgia Railway & Power Company, Atlanta, Ga., have each been presented with a handsome bronze medallion in the form of a watch fob, bearing the inscription "Safety First, Safety Always." This gift was made by the company as a token of membership in the Atlanta Public Safety League, and is intended to serve as a reminder that safety of the public should be the first and last consideration. The fobs were made by Whitehead & Hoag, Newark, N. J., from a special design furnished by the Georgia Railway & Power Company.

Service Established Between Kansas City and St. Joseph.—The Kansas City, Clay County & St. Joseph Railway, Kansas City, Mo., which has been in operation for some time between Kansas City and Excelsior Springs, operated the first car between Thirteenth and Walnut Streets, Kansas City, and the terminus of the line in St. Joseph on April 29, 1913. It was announced that regular service would begin on May 5. Through cars will leave the Kansas City terminus every seventy minutes. The fare is to be \$1.30 one way and \$2.30 for the round trip. The running time between the cities will be two hours.

Interurban Line Between Victoria and Deep Cove.—Announcement was recently made by the management of the British Columbia Electric Railway, Vancouver, B. C., that on May 15, 1913, the interurban line from Victoria to Deep Cove will be placed in operation. This line extends north from Victoria for a distance of 23 miles and will

be the second longest interurban line operated by the company, the longest division of the company's system being that from Vancouver to Chilliwack, a distance of 76 miles. Shelters will be provided at each of the twenty stops along the line.

Increase in Wages in Akron.—On May 1 the motormen and conductors decided to accept the scale of wages offered by the Northern Ohio Traction & Light Company, Akron, Ohio. The result is an increase of 2 cents an hour at once for the new men instead of 1 cent, which the company had voluntarily proposed to make some time ago. New men will receive 23 cents an hour, with an increase of 1 cent an hour each year until 27 cents, the maximum, has been reached. Running boards on the summer cars will be eliminated and the men will be paid 25 cents a day extra for breaking in new men. The increase applies to all the trainmen in the employ of the company.

Safety Talks to Children.—The United Railways & Electric Company, Baltimore, Md., is distributing a folder entitled "Safety Talks to Children" among the school children of Baltimore. The folder contains suggestions for preventing accidents on the streets and illustrates the proper way to alight from a car, besides explaining several other ways in which children should be cautious. The last page of the folder is addressed to the parents, who are asked to read and adopt the suggestions and endeavor to instill them in the minds of their children. Through the co-operation of the Board of Education, the folders were sent to the public schools, where each child received a copy.

Order Affecting Service in Jersey City.—As a result of the inquiry before the Board of Public Utility Commissioners of New Jersey into the service furnished by the Public Service Railway in Jersey City the company has been ordered by the commission to re-route certain lines of cars during rush hours, establish a short inner belt line and increase the number of cars during both rush and non-rush hours. The board realizes that the installation of the full additional equipment ordered will require time. The company is to render monthly reports as to its progress. The charge that the cars of the company are not kept in sanitary condition was dismissed for lack of evidence.

Improvements in Elevated Service in Brooklyn.—On the West End or New Utrecht Avenue line of the Brooklyn (N. Y.) Rapid Transit Company the headway in the night train service to Bath Beach, Bensonhurst and Ulmer Park will be reduced from thirty minutes to fifteen minutes. On the Culver line a seven-and-one-half-minute headway will be maintained from 6.45 a. m. to 7.50 a. m., and in the evening rush hours all short-line trains stopping at Parkville will give free transfers to cars bound for Coney Island. On the Myrtle Avenue line the headway in the service to Ridgewood and Metropolitan Avenue after 1 a. m. in the morning will be reduced from thirty minutes to twenty minutes, and the same reduction will be made on the Broadway line in the service to Brownsville and Canarsie.

Employees of Middlesex & Boston Street Railway Reinstated.—George M. Cox, general manager of the Middlesex & Boston Street Railway, Newtonville, Mass., under authority from the directors, addressed a communication in part as follows to the men who quit work recently: "As the former employees have recognized the fact that the position of the company in connection with the matter referred to was right and that the men in leaving their work made a mistake, I am willing to reinstate the men. I wish to impress upon the employees of this company that the action taken at the present time is not to be considered a precedent so far as the future is concerned, and I wish to impress upon the employees that the best results for the company and its employees will be attained by the earnest co-operation of all."

Fares Over the Nashville-Gallatin Interurban Railway.—The Nashville-Gallatin Interurban Railway, Nashville, Tenn., has on sale twenty-trip family commutation books good for any member of the family, which may be purchased at 2 cents per mile. Sixty-two-trip commutation books and forty-six-trip schoolbooks will be on sale three days before and three days after the first of each month. Under this plan the business and school tickets were put on

sale at Gallatin, Henderson and Nashville on April 28 and sale of tickets was continued to include May 3. The twenty-trip family ticket expires six months from the date of purchase. These tickets are sold from any point on the line of the Nashville-Gallatin Interurban Railway to its connection with the city lines at Inglewood. A city fare of 5 cents is collected with each coupon lifted by the conductor. The city fare entitles the commuter, if he so desires, to the privileges of the transfer station in Nashville and of transferring to any of the lines of the Nashville Railway & Light Company.

Near-Side Stops Suggested by Company in Charleston.—The Charleston Consolidated Railway & Lighting Company, Charleston, S. C., has addressed a letter as follows to the Mayor and members of the Charleston City Council suggesting the passage of an ordinance to permit the company to stop its cars on the near side of the street: "The increase in the number of automobiles using the streets of the city has correspondingly increased the liability of collisions between automobiles and the cars of this company. We find, upon investigation, that this situation has been met in other cities by requiring the street cars to stop on the near side, instead of the off side, as now required by the ordinances of the city of Charleston. We believe that such a change in the operation of our cars would add considerably to the safety of the passengers carried by us and of the public generally. We are, therefore, inclosing herewith a suggested form of ordinance providing for the near-side stop as a substitute for that portion of Section 720 requiring the stop on the off side, and we ask your favorable consideration of the same."

Handling Crosstown Traffic in New York.—The Public Service Commission for the First District, upon the recommendation of Commissioner John E. Eustis, has dismissed the proceeding against the New York Railways involving the service on the Eighty-sixth Street crosstown line in Manhattan. The proceeding was begun on complaints against the short-lining of cars at Second Avenue and in many cases the collection of an extra fare from passengers who desired to travel east of Second Avenue. During the hearings the company improved the service so that 60 per cent of the cars were run through to the ferry and only 40 per cent were short-lined at Second Avenue. The commissioner also directed the company to place an inspector at Second Avenue to see that all passengers in short-lined cars desiring to go further were transferred to through cars without the payment of an additional fare. The commission's inspection made after these improvements were put into effect showed that the service east of Second Avenue was adequate, and the hearing was closed with the understanding that the present service will be continued and that the short-lining of cars will not be changed without the approval of the commission.

Through Routing of Elevated Trains in Chicago.—Present indications are that it will be some time before a general merger of the elevated and surface railway systems of Chicago is effected. This being the case the question has arisen of through-routing the trains of the elevated railways, which are now affiliated through the association known as the Chicago Elevated Railways. The executive committee of this association consists of Samuel Insull, Henry A. Blair and Ira M. Cobe. On May 5 these gentlemen wrote to Alderman Block, chairman of the committee on local transportation of the City Council, to say that there was no foundation to the charge that the companies have declined to through-route their trains. On the contrary, they are as keenly alive as the Aldermen to the necessity of giving their patrons the best service possible. Mr. Insull and his associates say that upon receiving the necessary authority from the city for the lengthening of platforms, the physical connection of tracks, the necessary structural changes and the construction of transfer platforms, they are prepared, as soon as it is physically possible, to through-route north and south elevated trains and to establish free transfers at transfer stations between those trains and the two West Side elevated railway systems. The representatives of the companies declare that it is their desire to do everything for the comfort and convenience of the public that is within the engineering possibilities of the situation.

Personal Mention

Mr. E. A. Graham has resigned as electrical engineer of the Winnipeg (Man.) Electric Railway.

Mr. S. Miller Gallaher has been appointed superintendent of the Charleston (W. Va.) Interurban Railroad to succeed Mr. J. C. Rockwell, resigned.

Mr. Frank B. Lasher, formerly auditor of the New York State Railways and the Mohawk Valley Company, has become identified with the organization of Mr. Harrison Williams, New York. A biography and portrait of Mr. Lasher were published in the *ELECTRIC RAILWAY JOURNAL* of April 5, 1913.

Mr. Frank E. Block has been elected president of the Georgia Railway & Electric Company, Atlanta, Ga., to succeed Mr. Joseph T. Orme, deceased. Mr. Block has long been a director of the Georgia Railway & Electric Company, the property of which is leased to the Georgia Railway & Power Company.

Mr. M. F. Werth, who has been chief clerk to the mechanical superintendent of the British Columbia Electric Railway, Vancouver, B. C., has been appointed acting mechanical superintendent, vice Mr. S. B. Thompson, resigned, who has entered business in New York as a member of the firm of Roosevelt & Thompson.

Mr. Russell Harrington, who has been connected with the accounting department of the Bay State Street Railway at Lowell and Haverhill, Mass., for more than a year, has been appointed cashier of the company at Lowell. Mr. Harrington was graduated from Lowell High School in 1909 and entered the employ of the Bay State Street Railway as a clerk.

Mr. P. A. Bertrand, formerly of Jefferson City, Mo., has been appointed general manager of the Gray's Harbor Railway & Light Company, Aberdeen, Wash., to succeed Mr. H. B. Zimmerman, who has been transferred to the New York office of the Federal Light & Traction Company, as noted elsewhere in this column. Mr. Bertrand will assume his duties with the Gray's Harbor Railway & Light Company on June 1, 1913.

Mr. Alexander Craig Culberson, Louisville, Ky., who has been connected with the editorial staff of the *Louisville Evening Post*, has become associated with his father, Mr. Samuel A. Culberson, in the management of the Rome Railway & Light Company, Rome, Ga., the Vincennes (Ind.) Traction Company and the Pascagoula Street Railway & Power Company, Pascagoula, Miss., of which companies Mr. S. A. Culberson is president.

Mr. A. R. Whaley, vice-president of the New York, New Haven & Hartford Railroad and the Central New England Railroad, has been appointed head of the engineering, construction and maintenance department in addition to his duties as head of the operating department of these companies. He succeeds Mr. E. H. McHenry, vice-president, who has become a member of the firm of McHenry & Murray, engineers, as previously mentioned in the *ELECTRIC RAILWAY JOURNAL*.

Mr. H. B. Zimmerman, who has been general manager of the Gray's Harbor Railway & Light Company, Aberdeen, Wash., for the past two years, has been transferred to the New York office of the Federal Light & Traction Company on special work. Mr. Zimmerman previous to taking charge of the property of the Gray's Harbor Railway & Light Company was general manager of the Depew & Lancaster Light, Power & Conduit Company and at the same time was sales manager of the Niagara, Lockport & Ontario Power Company and the Niagara & Erie Company, Buffalo, N. Y.

Mr. E. M. Wharff has resigned as assistant general superintendent and operating engineer of the Galesburg Railway & Light Company, Galesburg, Ill., where for the past year and a half he had full charge of the operation of the gas, electric railway and steam heat departments. He will become connected with the Automatic Devices Company, which recently purchased the good-will, tools, machinery and equipment of the Robson Manufacturing Company, Galesburg, Ill. The Automatic Devices Company

will manufacture a spring-operated automobile engine starter, the invention of Mr. A. W. Knutson, the inventor of the Knutson trolley retriever. After he was graduated from Syracuse University as a mechanical-electrical engineer Mr. Wharff was with the so-called Beebe Syndicate of Central New York for five years. He resigned from the Beebe Syndicate to accept the position with the Galesburg property, which is owned by the Western Railways & Light Company.

Mr. Julius E. Rugg has retired as superintendent of employment and discharge of the Boston (Mass.) Elevated Railway. Mr. Rugg entered railway work in 1863 as a conductor on the Lynn & Boston Street Railway. He served in this capacity for a year and in the office of the company for three years, and was acting superintendent of the company from 1867 to 1872. He next became superintendent of the Highland Street Railway, operating in Boston and Roxbury. In 1888 he was appointed manager of the Minneapolis (Minn.) Street Railway and subsequently served as superintendent of the Citizens' Traction Company, Pittsburgh, Pa., for seven years. He returned to Boston and was appointed general superintendent of the West End Street Railway, in which capacity he served until 1898. From that year till 1907 Mr. Rugg was superintendent of transportation of the Boston Elevated Railway. He was next appointed superintendent of employment and discharge of the company.

Mr. James E. Allison has resigned as commissioner and chief engineer of the St. Louis Public Service Commission to engage in general consulting practice, making a specialty of public service valuation work and the examination of securities. Mr. Allison was graduated from Harvard University. Before coming to St. Louis he operated gas works and managed and designed for manufacturers of street railway equipment. In 1908 he was appointed chairman of the board of engineers of St. Louis and was consulting engineer in one of the departments of the World's Fair. In 1909 he was appointed commissioner and chief engineer of the St. Louis Public Service Commission and was reappointed in 1911. As chief engineer of the commission he made detailed valuations of public service property for the city of St. Louis, including the Union Electric Light & Power Company, United Railways, Bell Telephone Company, St. Louis Water Works, etc., representing a capitalization of about \$170,000,000. He has published a number of reports, pamphlets and magazine articles on valuation and regulation subjects, of which one, on depreciation, was reproduced in part in the *ELECTRIC RAILWAY JOURNAL*.

OBITUARY

Clarence Deming, formerly associate editor of the *Railway Age Gazette*, died in New Haven on May 8, 1913. Mr. Deming was graduated at Yale in 1872. Following his graduation he served with the *Troy Whig* and the *New Haven Palladium*, and afterwards with the *New York Evening Post*, writing editorials on foreign economics, finance and railway topics. He was also for three years traveling correspondent of the *Evening Post*. He first contributed to the *Railroad Gazette* twelve years ago, and was later made an associate editor of that paper. Mr. Deming represented the Connecticut Company, New Haven, several years ago in the lengthy arbitration regarding the demands of the employees of that company throughout the State for an increase in wages.

J. P. E. Clark, general manager of the Binghamton (N. Y.) Railway and the Waverly, Sayre & Athens Traction Company, Waverly, N. Y., died in Binghamton on May 7, 1913, after a lingering illness. Mr. Clark was born in Troy, N. Y., on Oct. 21, 1858, and had been connected with the Binghamton Railway for more than twenty years. In January, 1913, he was relieved of the management of the affairs of the company for a period of one year with full pay and was granted leave of absence to undergo treatment abroad. In addition to the offices which he held with the companies previously mentioned Mr. Clark was also president of the Binghamton Chamber of Commerce, general manager of the Binghamton Industrial Exposition, secretary-treasurer of the Endicott Land Company and was interested in many other business concerns.

Construction News

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

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

RECENT INCORPORATIONS

St. Augustine & Palatka Rapid Transit Company, St. Augustine, Fla.—Incorporated in Florida to build a 26-mile electric railway from St. Augustine to Hastings and Palatka. This railway is to operate in conjunction with the Jacksonville & St. Augustine Public Service Corporation. Capital stock, \$2,000,000. Officers: J. G. Merceur, Washington, D. C., president, and William La Croix, Detroit, secretary and treasurer.

Peoria, Canton & Galesburg Railroad, Peoria, Ill.—Incorporated in Illinois to build an electric railway from Peoria to Farmington and Galesburg. The Peoria Engineering & Construction Company, Jefferson Building, Peoria, will begin work at once on the section of the line between Peoria and Farmington. A traffic arrangement has been effected with the Illinois Central Electric Company, which operates a line from Farmington to Lewistown, via Norris, Canton, St. David and Bryant. The new terminal to be erected at Peoria by the Illinois Traction System will be used. Capital stock, \$2,000,000. Officers: Horace Clark, president; C. B. Coffeen, vice-president; James A. Lyon, treasurer, and James A. Fenelson, secretary.

***Springfield, Taylorville & Pana Interurban Railway, Taylorville, Ill.**—Incorporated in Illinois to build an electric railway to connect Springfield, Taylorville and Pana. Capital stock, \$325,000. Headquarters, Taylorville. Incorporators: W. B. Adams and Albert Morgan, Taylorville; P. E. Balliet, Edinburg; George H. Baeker and H. V. Gehm, St. Louis, Mo.

***Ogden, Lewiston & Northern Railway, Ogden, Utah.**—Application for a charter has been made by this company in Utah to build an electric railway from Ogden, Utah, to Preston, Idaho. Surveys have been made and the county franchises have been secured. Capital stock, \$100,000. Officers: Frederick W. Crockett, Logan, president; A. L. Hyer, Lewiston, vice-president; Morris J. Swinyard, Lewiston, secretary and treasurer; T. S. Karren and Martin Pond, Lewiston; John Johnson, Millville, and George S. Obray, directors.

FRANCHISES

Los Angeles, Cal.—The Los Angeles Railway has received a twenty-one-year franchise from the Council over certain streets in Los Angeles, beginning at Hoover Street and Tenth Street.

Los Angeles, Cal.—The Pacific Electric Railway has asked the Council for a franchise to make improvements in the rear of the Sixth Street and Main Street depot to relieve the Main Street congestion in Los Angeles.

San José, Cal.—The San José Railways has received franchises from the City Council over portions of the electric lines in Los Angeles formerly operated under county franchises.

Alton, Ill.—The Alton, Jacksonville & Peoria Railway has received a franchise from the Council to use the tracks of the Alton, Granite & St. Louis Railway from Third Street and Belle Street to the City Hall Square in Alton.

Nahant, Mass.—The Nahant & Lynn Street Railway has asked the Council for a franchise to double-track its line on Flash Road.

Linden, Mich.—Oliver H. Lau, Detroit, has asked the Council for a franchise in Linden. This is part of a plan to build an electric railway to connect Linden, Fenton and Holly. [E. R. J., March 29, '13.]

St. Louis, Mo.—The St. Louis & Jennings Railway has received a fifty-year franchise from the County Court for a line from the present terminus, Florissant Avenue and Jennings Road, to Melrose Avenue in St. Louis. David P. Leahy is interested.

Jamestown, N. Y.—The Jamestown Street Railway has received a fifty-year franchise from the Common Council to extend its Winsor Street line easterly on Willard Street to Willow Avenue in Jamestown.

Hatfield, Pa.—The Lehigh Valley Transit Company, Allentown, has received a franchise from the Council in Hatfield.

Pointe aux Trembles, Que.—The Montreal Tramway has asked the Council for a forty-year franchise in Pointe aux Trembles.

Saskatoon, Sask.—The Mayor and Council of Saskatoon have been asked to grant a franchise for an extension of the Saskatoon Electric Railway about 2 miles from the present terminus of the Mayfair line along Seventh Avenue to connect with the Seventh Avenue terminus.

Nashville, Tenn.—The Nashville Railway & Light Company has received a franchise from the Council for the extension of its Buena Vista line out Buchanan Street to Twenty-third Avenue in Nashville.

Wellsville, Utah.—The Logan Rapid Transit Company has received a franchise from the City Council in Wellsville.

Milwaukee, Wis.—The Milwaukee Electric Railway & Light Company has received a franchise from the Common Council over Wells Street in Milwaukee.

TRACK AND ROADWAY

Gadsden, Ala.—Preliminary arrangements are being made for the survey for an electric railway to connect Gadsden, Center, Cave Springs and Rome. J. B. Wentworth, Gadsden, is interested. [E. R. J., Dec. 28, '13.]

Globe, Ariz.—The Stone & Webster Engineering Corporation, Boston, Mass., has been investigating the situation in Globe with a view of constructing an interurban electric railway to connect Globe, Miami and Live Oak. [E. R. J., Dec. 7, '12.]

Pacific Electric Railway, Los Angeles, Cal.—The work of placing ties and rails has been begun by this company at the Rialto end of the line and work is being done toward Bloomington. This company has secured permission to begin work at once on the San Pedro Street line in Los Angeles.

Oakland (Cal.) Traction Company.—Surveys have been made and plans are being considered by this company to extend its San Pablo line west on Market Street in Oakland to reach the plants of the Western States Porcelain Works, the Sterling Fixture Company and the Rebuilt Typewriter Company.

San Francisco-Oakland Terminal Railways, Oakland, Cal.—Plans are being considered by this company to extend its San Pablo line west on Market Street in Richmond to reach several industrial plants.

Peninsular Railway, San José, Cal.—Plans are being made by this company to begin work at once on the extension of its San José and Santa Clara line in Santa Clara from Grant Street to the Southern Pacific depot.

San Ramon Valley Railway, San Francisco, Cal.—Palmer, McBryde and Quayle, Hooker and Lent Building, San Francisco, who have the contract for constructing a 9-mile electric railway up the San Ramon Valley for this railway, which is a branch of the Oakland, Antioch & Eastern Railway, have sublet all trestle and pile driving work to M. Anderson & Company, Oakland. The general contract includes all the work except the overhead construction.

Mount Tamalpais & Muir Woods Railway, San Rafael, Cal.—This company has received permission from the Railroad Commission to purchase the entire property of the Mill Valley & Mount Tamalpais Scenic Railway. The company plans to extend the line from West Point, on the slope of Mount Tamalpais, to Bolinas. [E. R. J., March 22, '13.]

Santa Barbara (Cal.) Consolidated Railway.—Work has been begun by this company rebuilding its Mission car line in Santa Barbara.

Tidewater & Southern Railroad, Stockton, Cal.—Work has been begun by this company electrifying its line from Stockton to Modesto.

Miami & South Florida Railway, Miami, Fla.—This company has been formed to build an electric railway from Detroit to West Palm Beach. Capital stock, \$1,500,000. Officers: H. C. Roome, president; Nathan A. Cole, vice-president; J. M. Cobb, secretary and treasurer; A. A. Boggs and R. E. McDonald, directors. [E. R. J., Feb. 8, '13.]

Nez Perce & Idaho Railroad, Lewiston, Idaho.—Grading will be begun at once by this company on its line between Forest, Waha and Lewiston. Z. A. Johnson, Lewiston, president. [E. R. J., Aug. 31, '12.]

Wendell, Idaho.—Plans are being considered by this company to build an electric railway between Wendell, Hagerman and Buhl. J. Stewart Clark, Twin City, is interested. [E. R. J., Aug. 24, '12.]

Belleville & Mascoutah Traction Company, Belleville, Ill.—Surveys have been made and grading completed on this 11-mile line between Belleville and Mascoutah.

Springfield & Central Illinois Traction Company, Springfield, Ill.—This company has increased its authorized capital stock from \$100,000 to \$20,000,000. This railway will connect Springfield, Terre Haute, St. Louis and Duquoin. Isaac Smith, 1042 Pierce Building, St. Louis, president. [E. R. J., April 19, '13.]

Fort Wayne & Toledo Electric Railway, Harlan, Ind.—This company advises that surveys have been made for its 55-mile line between Fort Wayne and Bryan, Ohio. Grading has been done between Fort Wayne and Harlan, a distance of 15 miles, and construction will soon be begun. Power will be purchased. This line will connect Fort Wayne and Harlan, Ind., and Hicksville, Former Center, Williams Center and Bryan, Ohio. The company will do its own work. W. H. Cost, New Albany, Ind., chief engineer.

Indianapolis & Delphi Traction Company, Indianapolis, Ind.—This company has filed a mortgage for \$2,000,000 with an Indianapolis trust company as trustee. The company proposed to build an electric railway from Carmel to Sheridan and Frankfort, Ind. Trackage rights from Carmel to Indianapolis are to be arranged over the lines of the Indiana Union Traction Company. The line will open a new section to electric transportation, and construction is to begin within a few weeks. [E. R. J., Oct. 17, '11.]

Cedar Rapids & Marion City Railway, Cedar Rapids, Ia.—This company plans to extend its Mount Vernon Road line, its Grand Avenue line, its Thirteenth Street line and the Third Avenue lines in Cedar Rapids in the near future. It will also double-track sections of its lines on First Avenue and on Third Avenue, making the approximate length of new lines and reconstructed lines about 8½ miles, of which 6.56 are additional track.

Fort Dodge, Des Moines & Southern Railroad, Des Moines, Ia.—Homer Loring, receiver for this company, has submitted a proposition to the people of Fort Dodge and other towns between it and Spirit Lake for the construction of an electric railway between Des Moines and Spirit Lake. The offer is based on agreements with the Rock Island Railroad and the Minneapolis & St. Louis Railroad Companies. The plan is to electrify the line of the Minneapolis & St. Louis Railroad from Fort Dodge to Livermore. From that point the Rock Island branch to Spirit Lake will be converted into an electric line. Mr. Loring asks the people in the towns through which the railway extends to raise a bonus equal to 25 per cent of the cost of electrification.

Kansas City, Kaw Valley & Western Railway, Bonner Springs, Kan.—Within the next sixty days this company will place contracts for the concrete, bridge work, grading and track work, and the pole-line construction and will purchase rails, ties, poles, wire and cars for 40 miles of track. This line will connect Kansas City and Bonner Springs via the Kaw Valley. J. D. Waters, president. [E. R. J., March 29, '13.]

Manhattan City & Interurban Railway, Manhattan, Kan.—This company has plans under way for the extension of its line from Manhattan to Topeka, thus connecting the line from Junction City to Topeka. The Rocky Ford Power Company will furnish the power for the line.

Louisville & Interurban Railway, Louisville, Ky.—The matter of urging an extension of the lines of this company from its present terminus at Shelbyville to Frankfort has been referred by the directorate of the Louisville Board of Trade to a standing committee on State development. The extension of the line to Frankfort, about 55 miles from Louisville, has been urgently solicited.

Bay State Street Railway, Boston, Mass.—Work has been begun by this company on double-tracking its line in Beverly from Fayette Street to the Beverly Bridge.

Cheboygan Electric Light & Power Company, Cheboygan, Mich.—Work will be begun at once by this company on its Pellston line. It will connect Cheboygan and Petoskey via the Mullet Lake and Burt Lake districts. F. B. Spencer, general manager. [E. R. J., Jan. 4, '13.]

Grand Rapids, Holland & Chicago Railway, Holland, Mich.—It is reported that plans are being considered by this company to build a 10-mile line along the Lake Michigan front to Saugatuck.

Kansas City, Clay County & St. Joseph Railway, Kansas City, Mo.—This company has placed in operation the section of its line between Kansas City and St. Joseph.

***Faribault, Minn.**—H. A. Knight and associates are considering plans to build an electric railway from Faribault south to Wells and thence west to Sioux Falls.

***Linden, N. J.**—Plans are being made to build an electric railway from Linden to Warner Station. The line will be 6 miles long and connections will be made with Elizabeth and Rahway.

Cloudcroft-Pecos Valley Railway, Cloudcroft, N. M.—It is stated that the General Electric Company has agreed to report on the proposed interurban electric railway between Artesia and Cloudcroft, 125 miles. It is planned to erect a hydroelectric plant at the falls on the Penasco River. The route under consideration runs from Artesia to Hope and Elk, thence through the James Canyon to Cloudcroft. [E. R. J., April 26, '13.]

Buffalo (N. Y.) Southern Railway.—This company has partly graded its 8-mile line between East Seneca and East Aurora.

Charlotte (N. C.) Electric Railway.—This company has placed in operation its new line to the Mecklenburg Country Club.

Ohio Electric Railway, Cincinnati, Ohio.—This company recently began the construction of its line over the Gilbert Avenue viaduct in Cincinnati. Cable slots on Gilbert Avenue are to be taken up and new tracks laid.

Kansas-Oklahoma Traction Company, Nowata, Okla.—Work will be begun at once by this company on its line between Nowata, Okla., and Coffeyville, Kan. Clyde A. King, Coffeyville, has charge of the surveys. [E. R. J., March 1, '13.]

Brantford (Ont.) Street Railway.—This company has received permission from the committee of railways and Canals at Ottawa to extend its railway from Langford to a point near Galt.

Niagara, Welland & Lake Erie Railway, Niagara Falls, Ont.—Surveys have been begun by this company for the 36-mile section of its line from Niagara Falls to Welland and Port Colborne and east along the lake shore to Fort Erie. C. J. Laughlan, Jr., Welland, general manager.

Lehigh Valley Transit Company, Allentown, Pa.—This company has secured the entire right-of-way for a proposed new double-track line from Lansdale north to Souderton. Bids have been asked for the construction of this 14-mile section.

***Lancaster, Pa.**—Ezra Zimmerman and other representatives of the bond house of W. D. Sloan & Company, New York, N. Y., are considering plans to build an 18-mile interurban railway between Lancaster and White Horse. Storage battery cars will probably be used.

Dallas Eastern Interurban Railway, Dallas, Tex.—Surveys have been begun by this company on its line between Dallas, Gainesville and Denton. E. P. Turner, promoter. [E. R. J., March 8, '13.]

Dallas Western Interurban Railway, Dallas, Tex.—Surveys have been begun by this company on its line between Dallas and Glenrose, via Cleburne. E. P. Turner, promoter. [E. R. J., July 13, '12.]

Houston (Tex.) Electric Railway.—This company has placed in operation its new line through Central Park and Magnolia Park in Houston.

***Trackless Trolley Company, Appalachia, Va.**—The Trackless Trolley Company of the South has been organized at Appalachia, Va. It is proposed to establish a trolley system to be operated over the new stone roads in Wise County. The company has taken over the patent rights to

use the trackless trolley cars in Virginia, West Virginia, eastern Kentucky and east Tennessee.

Gray's Harbor Railway & Light Company, Aberdeen, Wash.—This company will lay new rails and improve the roadbed on Herron Street between K Street and Division Street in Aberdeen at once. The company also plans to spend about \$30,000 on its holdings in the Gray's Harbor country during the summer.

Tacoma Railway & Power Company, Tacoma, Wash.—This company announces that it will spend about \$315,000 in reconstructing its present lines in Tacoma. The work will be begun early in June.

Ohio Valley Electric Railway, Huntington, W. Va.—This company, which is owned by the American Railways Company, has decided not to build the proposed line between Ashland and Russell. The surveys and estimates of the cost of this line reach the sum of \$200,000 and the company concluded that the line would not pay.

SHOPS AND BUILDINGS

Chicago (Ill.) Railways.—In a fire on May 6 at the carhouse of the Chicago Railways, located at West Division Street and Northwestern Avenue, Chicago, six double-truck cars and fifteen single-truck cars were destroyed. It is estimated that the total loss on the building and contents will reach \$75,000.

Evansville (Ind.) Railways.—Plans are being made by this company to begin work on the improvements at its repair shops on Maryland Street in Evansville. The addition will cost about \$20,000.

Public Utilities Company, Evansville, Ind.—A new carhouse will be built by this company at Water Street and Goodsell Street in Evansville in the near future. The cost is estimated to be about \$30,000.

Chicago, Lake Shore & South Bend Railway, South Bend, Ind.—Plans are being made by this company to build soon a new terminal for passenger traffic and new carhouses in South Bend.

South Carolina Light, Power & Railways Company, Spartanburg, S. C.—Announcement has been made by this company of the proposed expenditure of \$40,000 in the construction of an addition to its carhouse in Spartanburg.

Southern Traction Company, Dallas, Tex.—Plans are being considered by this company to build new machine shops in the southern city limits of Dallas.

Gray's Harbor Railway & Light Company, Aberdeen, Wash.—During the next four months this company will award contracts to build a new carhouse in Aberdeen. The structure will be 105 ft. x 110 ft. and of steel frame and galvanized-iron construction.

POWER HOUSES AND SUBSTATIONS

Northwestern Pacific Railroad, San Francisco, Cal.—This company has placed an order with the General Electric Company for a 1325-kva motor-generator set and switchboard apparatus to be installed at its Alto power house near Sausalito.

Lewiston-Clarkston Valley Railway, Lewiston, Idaho.—This company has awarded a contract for its new substation equipment and electrical appliances to the General Electric Company, Portland, Ore. F. L. Sturm, Lewiston, Idaho, is interested. [E. R. J., April 12, '13.]

Evansville (Ind.) Railways.—The old power house of this company located on Water Street in Evansville is to be dismantled at once. Everything except the brick buildings will be cleared off. The buildings will be remodeled, enlarged and improved. The cost is estimated to be about \$30,000.

Lewiston, Augusta & Waterville Street Railway, Portland, Maine.—This company will add to its substation equipment a 400-kw motor-generator set and switchboard apparatus. The apparatus has been ordered from the General Electric Company.

Rhode Island Company, Providence, R. I.—This company will add to the equipment in its Manchester Street substation nine 150-kva transformers, six 200-kva reactances, two 200-kw induction-motor-driven exciters and switchboard apparatus. The order has been placed with the General Electric Company.

Manufactures and Supplies

ROLLING STOCK

Hagerstown (Md.) Railway is reported as expecting to purchase seven double-truck cars.

Capital Traction Company, Washington, D. C., has just ordered five double-truck cars from The J. G. Brill Company.

Shore Line Electric Railway, Saybrook, Conn., has ordered one express car body from the Wason Manufacturing Company.

Cedar Rapids & Marion City Railway, Cedar Rapids, Ia., is in the market for several standard double-truck pay-as-you-enter cars.

Chicago (Ill.) Railways is asking for bids on 150 new cars, according to specifications which are now being prepared by the company.

Kansas City, Kaw Valley & Western Railway, Bonner Springs, Kan., expects to purchase several new cars to equip its new 40-mile line.

Manhattan & Queens Traction Corporation, Patchogue, N. Y., has ordered twenty-five center-entrance cars from the St. Louis Car Company.

Bay State Street Railway, Boston, Mass., has placed an order with the Laconia Car Company for fifty 28-ft. semi-convertible car bodies and five express car bodies.

Memphis (Tenn.) Street Railway expects to be in the market soon for thirty cars, including both motor and trail. As yet no decision has been reached as to the details of this equipment.

Bangor Railway & Electric Company, Bangor, Maine, has placed an order with the Wason Manufacturing Company for three semi-convertible cars mounted on Brill 27-MCB-1 trucks.

Manhattan Bridge Three-Cent Fare Line, Brooklyn, N. Y., has purchased through W. R. Kerschner from the Cincinnati Car Company six double-truck cars mounted on Standard O-36 trucks.

New York State Railways, Rochester, N. Y., has ordered twenty-five pay-as-you-enter car bodies with trucks and twenty-five center-entrance cars from the G. C. Kuhlman Car Company.

Chicago (Ill.) Railways Company lost six double-truck cars and fifteen single-truck cars by fire on May 6, 1913, in its carhouse at West Division Street and Northwestern Avenue, Chicago.

San Diego (Cal.) Electric Railway expects to purchase several cars in the near future. The company is now working on the specifications, but at this time has not determined on the type of car.

East St. Louis & Suburban Railway, East St. Louis, Ill., has purchased ten 33-ft. 4-in. closed cars with 27-MCB-24 trucks and five 28-ft. 8-in. closed pay-as-you-enter cars, with No. 22 special trucks, from the American Car Company.

Norfolk & Western Railway, Norfolk, Va., expects to purchase twenty-five electric locomotives for use on the 30-mile section of its line which is to be electrified between Bluefield and Vivian, W. Va. The locomotives will be used for both switching and main-line service.

Imperial Japanese Government Line, Tokyo, Japan, expects to purchase a large number of railway cars during the coming year, for use on its double-track electric railway between Yokohama and Tokyo. Communications in regard to the equipment for the line may be addressed in English to the Imperial Japanese Railway Bureau, Tokyo, Japan.

British Columbia Electric Railway, New Westminster, B. C., expects to purchase sixteen passenger cars for city service. Over its interurban lines the company will require three additional passenger cars, three baggage and express cars and two combination mail cars. For freight service will be ordered fifty box cars, thirty flat cars and twenty-five steel dump cars. In addition to this the company plans to purchase three snow sweepers.

Detroit (Mich.) United Railways has specified the following details for the fifty single-truck cars recently ordered from the Cincinnati Car Company:

Seating capacity.....28	Cables,
Length of body 23 ft. 1½ in.	BS-00 single braid, rubber covered
Length over ves-	
tibule .....34 ft. 6½ in.	Car trimmings.....Dayton
Width over all. 8 ft. 0 in.	Curtain fixtures.....Forsyth
Height, rail to	Curtain material...Pantasote
sills.....25½ in.	Destination signs....Hunter
Sill to trolley	Gongs.....12-in. pedal alarm
base .....9 ft. 4¼ in.	Headlights....Golden Glow
Body .....wood	Seats .....longitudinal
Interior trim.....white oak	Seating material,
Headlining.....¼-in. Galco	Wilton carpet
Roof .....monitor	Step treads.....Mason
Underframe .....wood	Trolley catchers.....Ideal
Bumpers .¾-in. x 7-in. plate	Varnish .....Berry

Belt Line Railway, New York, N. Y., reported in the *ELECTRIC RAILWAY JOURNAL* of April 12, 1913, as having ordered forty 18-ft. storage battery cars from The J. G. Brill Company, has included the following details in the specifications for this equipment:

Weight (car body only),	Conduits and junction boxes,
4500 lb.	G. E.
Length of body 18 ft. 0 in.	Curtain fixtures.....Tuco
Length over ves-	Curtain material...Pantasote
tibule .....25 ft. 6½ in.	Destination signs.....board
Width over sills. 6 ft. 5½ in.	Gears and pinions....solid
Width over all. 7 ft. 9¼ in.	Gongs.....8-in. pedal
Height, rail to	Hand brakes.....Brill
sills .....2 ft. 5½ in.	Headlights, Elec. Serv. S. Co.
Sill over roof... 8 ft. 2½ in.	Journal boxes. roller-bearing
Body .....wood	Motors .....G. E.-1027
Interior trim.....bronz	Sanders .....Columbia
Headlining....carline finish	Sash fixtures.....Brill
Roof .....monitor	Seats .....longitudinal
Underframe .....wood	Seating material, solid veneer
Bumpers .....angle iron	Springs .....Brill
Cables .....G. E.	Trucks.....Brill special
Car trimmings.....Brill	Varnish .....Murphy
Controls .....hand	Wheels .....cast iron

TRADE NOTES

Trackless Trolley Company of America, New York, N. Y., has removed its offices in the Hudson Terminal Building from Suite 348 to Suite 819.

Standard Coupler Company, New York, N. Y., has removed its offices from the United States Express Building to temporary quarters in the Hudson Terminal Building, New York.

W. J. Jeandron, New York, N. Y., American representative for the Le Carbone Brush Company, is at present on his annual trip to Paris, France, to visit the plant of the company.

Ohio Brass Company, Mansfield, Ohio, has received a contract from the Boston Elevated Railway for 610 automatic air connecting coupler and draft gear equipments for heavy subway and elevated train service.

Perry Ventilator Corporation, New Bedford, Mass., has received orders for ventilators for the thirty new cars now building at the works of the Pressed Steel Car Company for the Boston Elevated Railway.

Curtain Supply Company, Chicago, Ill., has received the order for equipping the forty-five new storage-battery cars of the New York Railways with curtains. These cars are being built by the American Car & Foundry Company.

J. W. McCrosky, the general South American representative of J. G. White & Company, Ltd., of London, expects to arrive in New York May 16 for a holiday visit. While here his headquarters will be at the New York office of J. G. White & Company.

The J. G. Brill Company, Philadelphia, Pa., has received an order from the South Covington & Cincinnati Street Railway, Covington, Ky., for ten 21-E trucks. Also another from the Boston (Mass.) Elevated Railway for fifty-five pairs of Brill 27-MCB-2 trucks.

C. H. Wheeler Manufacturing Company, Philadelphia, Pa., is making extensive enlargements and improvements

in its works, due to the rapid increase in sales for high-vacuum condensing apparatus and Rotrex air pumps. The company has increased its capital stock from \$200,000 to \$600,000.

Platt Iron Works Company, Dayton, Ohio, state that many exaggerated reports have been circulated concerning the damage done to the plant by the recent flood. While it is true that the company suffered considerable damage, the buildings were practically uninjured and have been repaired more quickly than anticipated. A small portion of the plant was put in operation on April 7, and on April 21 the entire plant was running normally.

Power Specialty Company, New York, N. Y., reports that owing to the rapid increase in the demand for Foster superheaters, it is building a new erecting shop 300 ft. x 96 ft. Among recent contracts received for Foster superheaters are the following: Public Service Corporation, Burlington, N. J.; Rhode Island Company, Providence, R. I.; Havana Electric Railway, Light & Power Company, Havana, Cuba; Rochester Railway & Light Company, Rochester, N. Y.; Jones & Loughlin Steel Company, Pittsburgh, Pa., and Brier Hill Steel Company, Youngstown, Ohio.

ADVERTISING LITERATURE

Bridgeport Brass Company, Bridgeport, Conn., has printed a folder on "Phono-Electric" wire.

K. P. F. Electric Company, San Francisco, Cal., has printed Bulletin No. 102, pertaining to K. P. F. high-tension switches.

H. M. Bylesby & Company, Chicago, Ill., have recently issued Department Bulletin No. 3, entitled "Of What Use Is an Appraisal?"

General Bakelite Company, New York, N. Y., has issued a booklet describing Bakelite molded insulation and its various properties.

H. W. Johns-Manville Company, New York, N. Y., has printed a small folder giving a list of J-M asbestos, magnesite and electrical products.

Sherwin-Williams Company, Cleveland, Ohio, is distributing a new catalog describing "Ajax" insulating varnishes and impregnating compounds.

American Mineral Wood Manufacturing Company, Poughkeepsie, N. Y., has just printed a small booklet on "Eterno," a fireproof and waterproof substitute for wood.

Edward B. Smith & Company, Philadelphia, Pa., bankers, have recently issued a chart showing railway stocks on which dividends have been paid continuously from twenty-one to fifty-seven years.

Vulcan Engineering Sales Company, Chicago, Ill., is distributing Catalog No. 51 on foundry molding machinery, illustrating the molding machines of the Mulford Molding Machine Company, for which it is sales agent.

Esterline Company, Indianapolis, Ind., has issued a new catalog on Golden Glow headlights for railway service. This catalog is descriptive of the different types of Golden Glow lamps for city cars and powerful incandescent headlights for interurban service.

Ohio Brass Company, Mansfield, Ohio, has issued a folder in which the type J all-wire rail bond is described and illustrated. The motor-driven milling machine and hollow milling cutter used in connection with the installation of the bond are also described and illustrated.

American Steel & Wire Company, Chicago, Ill., has printed an attractive booklet fully describing triangle mesh wire, reinforced concrete pavements and roadways. The booklet also contains many illustrations of work that has been done by the company throughout the country.

The J. G. Brill Company, Philadelphia, Pa., has issued the *Brill Magazine* for April, 1913, which contains an illustrated biography of T. J. Minary, president and general manager of the Louisville (Ky.) Railway. Among the feature articles are the following: "Conditions Which Govern the Type of Car for City Service, Louisville, Ky.," "Representative Types of Electric Railway Rolling Stock," "Novel Operation of New Prepayment Cars for Madison, Wis.," "Motor Omnibuses for Washington, D. C., Prepayment System."