

# Electric Railway Journal

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## Car Riders Pay for the Service They Desire

TO utility experts the new suburban franchise of the Columbus Railway, Light & Power Company, described elsewhere this week, will not seem a remarkable novelty. It deserves mention here, however, because it constitutes another recognition of the fact that a community has the right to receive the service it desires if it adequately recompenses private capital for providing such service. Under the Westerville franchise, the car riders control the service, but a fair return to the company is automatically insured by a sliding scale of fares. Furthermore, the company is protected in an interesting way from political chicanery when the question of franchise renewal comes up. If the unexpired term of the original or extended franchise should ever become less than fifteen years, the control of service would go into the hands of the company and it might charge any fare not in excess of the maximum. The car riders can avert this by offering in time an equally equitable renewal, but they are thus prevented from forcing the company into last-minute concessions or operation under sufferance. The franchise in general seems to be written in a big way, with better provision for the future than some electric railway franchises have made.

## It Seems Too Optimistic— Almost Idealistic

WITHOUT doubt the prospective increased governmental regulation of industries under war conditions is a matter of interest to utility investors. In our opinion, however, the view on this point taken by L. P. Hammond, as noted elsewhere this week, is too optimistic. It is even inclined toward the idealistic in its conception of existing regulatory practice. Mr. Hammond's position seems to be, in short, that the utility investor can find solace in the already existing system of public control over utilities. These corporations need not have such a fear of a sudden and radical readjustment of earnings as industrial companies might have which would be for the first time placed under governmental regulation. Quite true, but does this follow? "He [the utility investor] is assured that the industry will not be subjected to unwise or unfair regulations and practices through the inexperience or prejudices of those who undertake its regulation, since the existing regulation is the result of deliberate, intelligent action based upon the experience of many years and governed by a mass of commission and court precedents." Does not this presuppose a perfection of regulation which is

not yet attained? We believe that many commissioners could well display more knowledge, wisdom and fairness in dealing with utility needs under present conditions. We hope that the day will soon come when Mr. Hammond's statement will be true, but now actualities are what the investor has to consider.

## Line Capacity, Not Individual Car Capacity, the Desideratum

THE one-man car idea is spreading, but this fact only emphasizes the importance that the fundamental principles of one-man car operation should be thoroughly understood. It is not suitable for all lines; still less is it suitable for all cars. In fact, there is great danger that in the flush of enthusiasm over the advantages of the general plan, some companies will attempt to apply it to both lines and cars for which operation with conductors is preferable. A case in point is where an attempt was made in a city of medium size, not long ago, to apply one-man operation to some old 45-ft. double-truck cars, with the result that during the rush hours the schedule speed of these cars was reduced to about 7 m.p.h., yet the management kept the cars in service under the belief that their size was necessary to maintain the capacity of the lines. But line capacity is measured not in seats, but in seat-miles. And if, for example, a new type of car capable of a schedule speed of 14 m.p.h. but with only half the seats could have been introduced, the capacity of the line with the same number of cars would have been the same. The change would also have given a far better service to the public and would, no doubt, have resulted in an increase in revenue more than sufficient to pay interest charges on the new investment and write off the book value of the old cars. The merits of one-man car operation are marked, and they should not be lost by an attempt to apply this practice to conditions and to equipment for which it is not suitable.

## Labor Cost Data on Special Work Reconstruction

ENGINEERS and managers have a justifiable appetite for cost data covering construction, reconstruction and maintenance, because such data furnish reference standards for comparison and assist in making intelligent estimates. In securing articles of a technical character for the ELECTRIC RAILWAY JOURNAL the attempt is made to obtain permission to include the appropriate cost data where such are available. Occasionally it is possible to secure more or less extensive



compilations of such data in particular fields. Examples of these are found in the series of charts on overhead construction costs recently published and in a series on special work reconstruction costs begun in this issue. We realize, of course, that conditions differ on different properties so that any data to be of value for comparison must be revised to fit local conditions. They are of great value, however, as a general guide when reasonably specific. More important yet, the publication of cost data furnishes an incentive to study of local unit costs and thus exerts an impelling force in the direction of more rational expenditure. When these local costs are high or low by comparison with the reference standards, there is a natural inclination to search for the causes of the differences. If the latter are found to be justified by conditions, there results an increased confidence in the procedure which has been followed. Otherwise suggestions as to improvement are bound to be forthcoming. The data on special work costs are based upon the experience of the Brooklyn Rapid Transit engineers and represent averages for a very large number of installations. They have been compiled especially for the benefit of the readers of this paper, and we believe that they will be found invaluable for the purposes outlined above.

### The Possibilities for Anti-Friction Bearings

RECENT orders for anti-friction bearings for armatures indicate that the electric railway industry is at last becoming aroused to their value; in fact, one car builder is actually building for stock one-man cars with ball-bearing journals as well as armatures. However, before the bearing makers can go much further with regard to present motors, they must secure more material and moral support. This applies particularly to the substitution of anti-friction bearings on existing designs. So far as new designs are concerned, anti-friction bearings are so readily substituted for the old type that the problem is relatively easy. However, this is not true of present standards. The difficulties are greater and the savings less in converting to the more efficient designs a motor which was made for ordinary bearings. From what we have seen, we doubt the advisability of converting the older types, but would confine the change to the interpole and self-ventilated forms. The application of ball bearings on armatures should be encouraged not only by the railways themselves but also by the motor designers. It is obviously difficult to promote any extended use of armature ball bearings for motors, whether old or new, if the railway has no assurance that it will be able to secure the same features ready-made when it is in the market for additional equipment. No doubt the motor manufacturers will be glad to give their customers the most efficient equipments possible, but it is natural for them to wait until they are assured of a market large enough to reward their departures from existing standards. In plain English, it is up to the railways themselves to break away from the traditional styles of motor-armature

bearings. The rising price of fuel is but one of many reasons for thinking and acting along new lines.

### President Wilson on Fair Profits

HAD President Wilson been retained as special counsel by the electric railways of the State of New York, which are seeking a way to increase their revenues, he could not have stated the aims of his clients better than he did in his address of July 12 to the business interests of the United States.

The President's text was prices, and in the address he used these words:

"A just price must, of course, be paid for everything the government buys. By a just price I mean a price which will sustain the industries concerned in a high state of efficiency, provide a living for those who conduct them, enable them to pay good wages, and make possible the expansions of their enterprises which will from time to time become necessary as the stupendous undertakings of this great war develop. We could not wisely or reasonably pay less than such prices. They are necessary for the maintenance and development of industry, and the maintenance and development of industry are necessary for the great task we have in hand."

The President goes on to explain that the prices must include not only costs but profits and surpluses for extensions and improvements.

The electric railways of New York State have asked the public service commissions for permission to increase their revenues so that they may do just the very things that the President cites. They want to be able to provide (1) good service, (2) depreciation reserve, (3) good wages, (4) fair profits.

Records on file with the public service commissions show that now, and for several years past, the income of the electric railway companies in the State of New York—and the same is true all over the United States—has not been great enough to meet these fundamental demands.

Now, note that the emphasis in the President's address to the business men is on the necessity of good service and continued good service. When he discusses justness of prices he makes the measure of justness an amount of pay that will perpetuate good service. Herein is a lesson for those critics who are thoughtlessly arguing that because the nickel once produced revenue enough for the maintenance of good street railway service, it still is enough, in spite of the undisputed loss of the nickel's purchasing power and in spite of the fact that it takes nowadays at least 150 nickels to pay as much of the railroad expenses as 100 nickels would pay for five years ago.

Contained within the President's address, too, are the ideas that underlie a sound financial policy for the conduct of any business enterprise, electric railways included. A depreciation reserve should be set aside before dividends are paid.

Contributions to a reserve from current income to maintain a property in a complete state of efficiency are set down by the President as something that a fair price includes. In asking that very thing from the



public service commissions the carriers have been attacked by the opposition. Yet the necessity of a depreciation reserve is fundamental to good finance, finance that protects the public not only in keeping up service, but in providing for its improvements from time to time. The Supreme Court of the United States has expressed itself plainly (Knoxville case, 1909) on this point, holding that it is not only the right of the company to make such depreciation provision out of current income, but that it is its duty. The Public Service Commission of the Second District of New York in the Niagara Light, Heat & Power case declared that to provide for depreciation by borrowing was wholly unsound and added to its discussion of this subject the observation that "an end to such rottenness of method finally comes in a dilapidated and useless plant."

We speak of these things here only because of the common and unfair criticism leveled at the carriers, who because they point out the necessity of providing for depreciation out of current income have been accused of attempting to "rob" the public. To the voice of the New York State commissions and of the Supreme Court of the United States is now added the voice of the President of the United States to answer this unsound and unfair criticism.

### Long-Distance Transmission in Heavy Electric Traction

**P**RACTICE on the Chicago, Milwaukee & St. Paul with regard to power transmission directs attention to the rather remarkable manner in which the limitations of load factor—that bane of electric operation with thin traffic—are being nullified by extension of intervals between power stations. On the St. Paul's most recent project, that of the electrification between Othello and Tacoma, power is to be furnished from a network of high-tension lines at the western end, while a 100,000-volt line from Long Lake on the Spokane River extends across country for about 100 miles before reaching the eastern end near Othello. From this point the railway's transmission line along the right-of-way supplies substations for practically 150 miles further until the power network west of the Cascade Mountains is reached.

Much the same thing is in evidence at the western end of the company's original 440-mile electrification. The eastern part of this section of the railway approximates the form of a great circular arc which begins just west of the main range of the Rockies and swings first southeast and then northeast across the Big Belt range out onto the plains of western Montana. Approximately at the center from which this arc is struck with a 90-mile radius are the Great Falls developments. These form the main source of power for the eastern end of the electrification, although they, together with a network of lines from smaller stations, also supply industrial loads in the cities of Butte and Anaconda, respectively 130 miles and 160 miles away. At the western end of this electric zone in Idaho the factor of

industrial loads is materially less, and dependence for continuity of supply is placed upon a single hydroelectric station at Thompson's Falls near the extreme western end of the division. In consequence, a short circuit on the railway's right-of-way transmission line near its western end would mean that distribution must be effected all the way from Great Falls to the Idaho line. This maximum transmission distance, similarly to the case of the electrification now in progress, is roughly 250 miles.

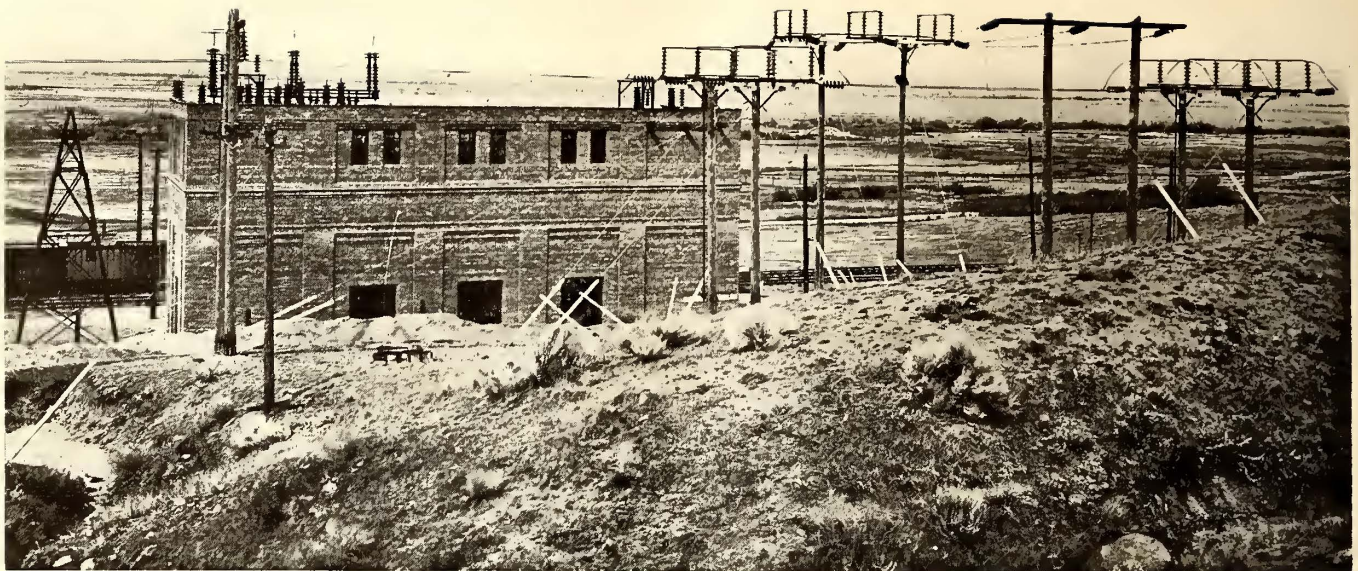
No doubt the satisfactory record of the existing installation, notwithstanding the length of line involved, has been due in part to the excellent working conditions existing throughout the Rocky Mountain region, whose extreme dryness is reported even to permit the occasional use of impregnated wood for high-tension insulating purposes. Yet the possibility of 250-mile intervals between power stations has thus at least been made very definite.

What this means to heavy electric traction may be exemplified by assuming, for the sake of illustration, a level road with a 250-mile spacing for the points of power supply. Neglecting passenger service, it may be said that each freight train will require about eighteen hours to pass through the zone served by a power station, and if only two trains per day are operated in each direction the demand on the station, assuming reasonably even train spacing, cannot be less than the load imposed by two trains nor more than that imposed by four. Neglecting starts and waits, this would give in theory a load factor of 75 per cent. If four trains were operated each way daily, the minimum number of trains at one time in a power station zone would be six and the maximum eight, giving in theory a load factor of 87 per cent.

If, now, the length of zone should have been only half that assumed above, or 125 miles, the minimum number of trains served by a power station would be zero, in case two trains each way were operated daily and the spacing each way was therefore twelve hours. The maximum load would be that of two trains, and it is conceivable that this load might last only nine hours, or the time required for one train to pass through the zone, in case the trains met midway. The theoretical load factor would then be only 37 per cent, as opposed to 75 per cent with the longer zone, while if four trains each way per day were operated the figure would be 75 per cent, as opposed to 87 per cent with a power station spacing of 250 miles.

Of course, these figures for load factors are impossible of attainment in practice, because in the first place the heavy drafts of energy for starting trains have been neglected, and in the second place no time has been allowed for trains to stop en route. In addition, daily load factors only have been considered, although seasonal variations in traffic as great as 50 per cent are not uncommon. However, when relative values of the figures are considered there is clearly shown the vital necessity for keeping intervals between power stations at a maximum, especially when traffic is thin.





SUBSTATION AND TRANSMISSION-LINE EQUIPMENT TYPICAL OF NEW INSTALLATION

## Equipment for St. Paul's New Electrified Division

Details of Power Supply, Substation Location and Capacity, and Line Construction for 217 Route-Miles of Electrified Track as Planned for the Seattle-Othello Division of the Chicago, Milwaukee & St. Paul Railway

AS recently announced in the *ELECTRIC RAILWAY JOURNAL*, the Chicago, Milwaukee & St. Paul Railway has undertaken the electrification of a new division at the western end of its transcontinental line. The new work comprises 98.7 route-miles between Othello and Cle Elum, 89.9 route-miles between Cle Elum and Seattle, and 28.3 route-miles between Black River Junction (about 10 miles south of Seattle) and Tacoma.

The total route mileage of 216.9 as given above consists mainly of single track, and the figures do not include any track mileage for yards and sidings. Because of the greater efficiency of yard and siding tracks when electrical operation is in force, the railway company has not yet decided how much of this class of trackage should be electrified. At present, therefore, only route mileages can be given.

The coming electrification of 216.9 miles, plus the 437.6 miles at present electrified between Harlowton and Avery, makes an imposing total of 654.5 route-miles electrically operated by the St. Paul. This is not only the longest electric route in the world, but will be also the longest in single-track mileage, undoubtedly, since the original electrification has 149.4 miles of yard and siding track alone and the electrified trackage in the Seattle and Tacoma yards may bring the grand total close to 1000 miles.

About half of the coming electrification covers heavy mountain grades, including a number of tunnels. The physical characteristics of the new electrically-operated division will, therefore, closely approximate those obtaining on the four electrically-operated divisions in Montana and Idaho.

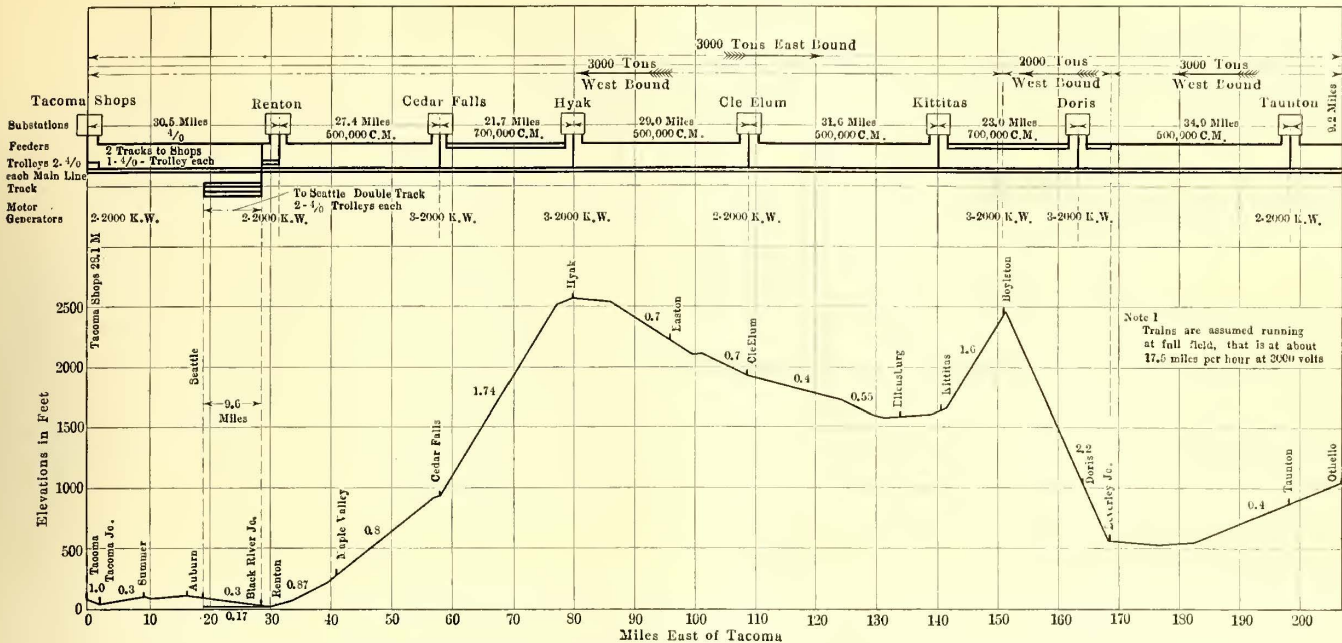
Arrangements have been made with the Inter-mountain Power Company to supply power required for the new electrification from Othello to Seattle and Tacoma. This power will be generated principally in the Washington Water Power Company's plant on the Spokane River, some thirty miles northwest of the city of Spokane, and at the Snoqualmie and other plants belonging to the Stone & Webster system of western Washington.

The railway company's own transmission line along the right-of-way will be 100,000 volts, 60-cycles, three-phase, built to about the same standards as its present lines in Montana and Idaho. The transmission wires will be No. 00, six-strand copper with hemp core, and the aerial ground wire and individual pole grounds of  $\frac{3}{8}$ -in., seven-strand, Siemens-Martin galvanized wire. This transmission system will extend from Taunton, near Othello, to Cedar Falls, a distance of 140 miles. This will serve the eastern end of the new electrification. The extreme western end, or the section lying west of Cedar Falls, will have its substations tied in with a network of hydroelectric lines operated by the companies supplying the energy to the railway.

### SUBSTATIONS, FEEDERS AND BONDS

Substation locations are as tabulated below. The capacities that are given correspond to the known ability of motor-generators of like rating on the Harlowton-Avery electrification to handle certain loads. All substation and feeder capacities are based on a trailing train load of 3000 tons eastbound and westbound, except for an 18-mile westbound grade of 2.2 per cent just west of the Columbia River, where the train load is reduced to 2000 tons, this ruling westbound grade ex-





ST. PAUL EQUIPMENT—DIAGRAM SHOWING PROFILE OF SEATTLE-OTHELLO DIVISION TOGETHER WITH SUBSTATION LOCATIONS AND FEEDER CAPACITIES

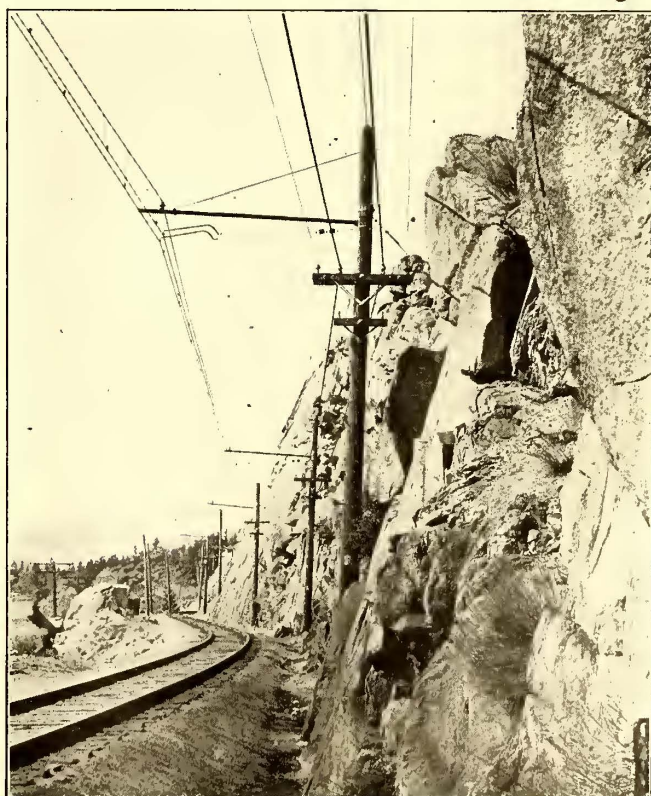
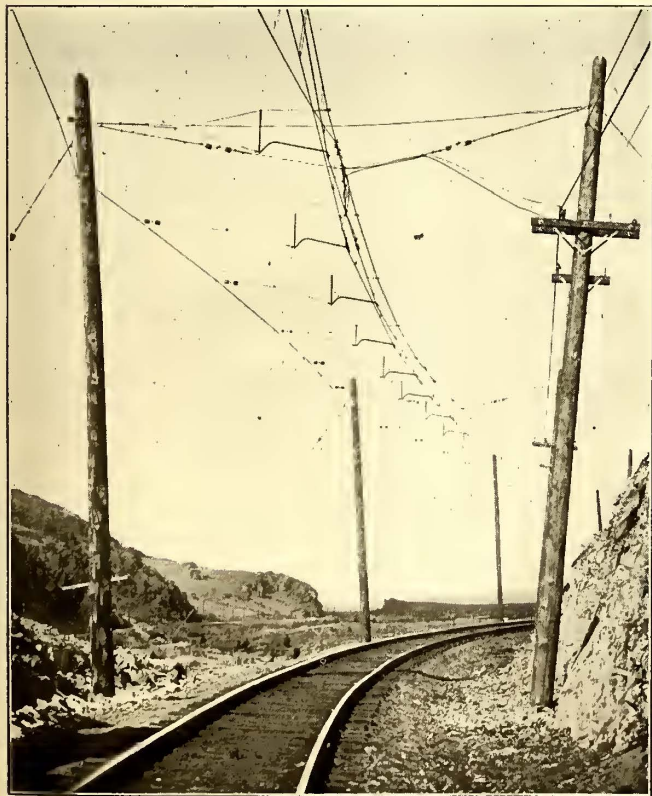
tending between the stations of Beverly Junction and Boylston on the eastern slope of the abrupt divide between the Columbia and Yakima Rivers. The ruling grade eastbound is 1.74 per cent, and it extends for 20 miles east of Cedar Falls to the summit of the Cascade Mountains.

The order and capacity of substations beginning at the east end are given in the following table:

The Renton station serves the 10-mile, double-track line that extends from Black River Junction west to Seattle. There is a distance of 2.4 miles between Renton and Black River Junction, and this is included in

| Substations                         | Motor-Generators |
|-------------------------------------|------------------|
| Taunton, 9.2 miles from Othello     | Two 2000-kw.     |
| Doris, 34.9 miles from Taunton      | Three 2000-kw.   |
| Kittitas, 23 miles from Doris       | Three 2000-kw.   |
| Cle Elum, 31.6 miles from Kittitas  | Two 2000-kw.     |
| Hyak, 29.0 miles from Cle Elum      | Three 2000-kw.   |
| Cedar Falls, 21.7 miles from Hyak   | Three 2000-kw.   |
| Renton, 27.4 miles from Cedar Falls | Three 2000-kw.   |
| Tacoma, 30.5 miles from Renton      | Two 2000-kw.     |

the section listed in the run to the Tacoma substation. The foregoing substation ratings are based upon 150 per cent load for the motor-generator sets for a period of two hours, and 300 per cent load for a period of five minutes. All substation buildings will be of brick,



ST. PAUL EQUIPMENT—TYPICAL ARRANGEMENT OF OVERHEAD CONTACT SYSTEM ON SHARP CURVE AND ON MODERATE CURVE

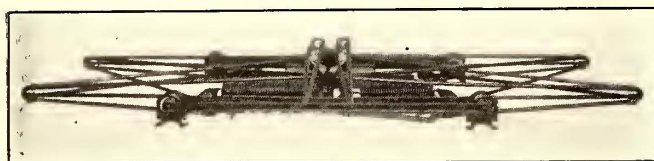
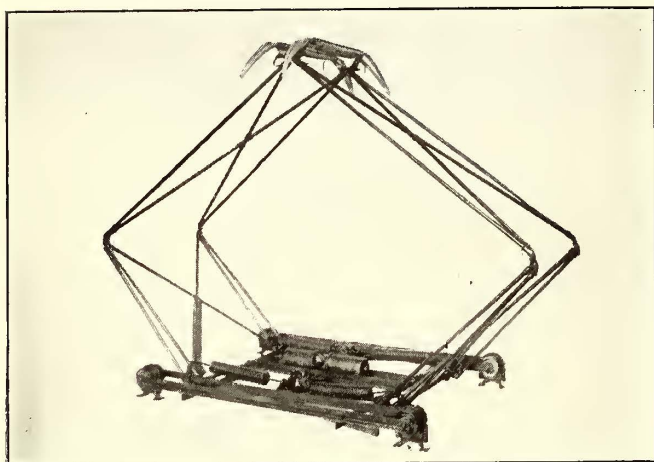


with concrete foundations. At Hyak the machines will be set considerably above the track level to avoid the extraordinarily deep snows that are common in the locality.

The initial feeder capacities in copper are as shown in the following table:

|                                |                       |
|--------------------------------|-----------------------|
| Taunton-Beverly Junction ..... | One 500,000 circ. mil |
| Beverly Junction-Dor.s .....   | Two 500,000 circ. mil |
| Doris-Kittitas .....           | Two 700,000 circ. mil |
| Kittitas-Cle Elum-Hyak .....   | One 500,000 circ. mil |
| Hyak-Cedar Falls .....         | Two 700,000 circ. mil |
| Cedar Falls-Renton .....       | One 500,000 circ. mil |
| Renton-Tacoma .....            | One No. 0000          |

No feeders will be installed on the double-track section between Black River Junction and Seattle, as the



ST. PAUL EQUIPMENT—VIEWS SHOWING DOUBLE-PAN PANTOGRAPH FOR LOCOMOTIVE IN RAISED AND LOWERED POSITION

four trolley wires will be ample to supply the draft of power without excessive voltage drop.

Each rail of the main-line track will have one 250,000-circ.mil expansion bond on grades of 1 per cent or less and two 250,000-circ.mil bonds for grades exceeding 1 per cent. These bonds will be tied in with an overhead negative return of No. 0000 bare copper at intervals of approximately 8000 ft. This construction is designed to protect trackmen against large differences in rail potential in case of defective bonds.

#### 3000-VOLT D.C. DISTRIBUTION

The d.c. distribution system will be practically a duplicate of the present installation between Harlowton and Avery, as this has proved to be entirely satisfactory during the last year's experience with it. Cedar poles will be standard except for a limited number of steel bridges over multiple track sections and at terminals. Over the Columbia River Bridge the wooden pole construction will be replaced with a combination transmission and trolley wire structure. There will be also some center pole construction and possibly steel supports on curves over the double-track line between Seattle and Black River Junction, these tracks being owned by the Oregon-Washington Railway & Navigation Company

and Pacific Coast Railway Company and leased for use by the Chicago, Milwaukee & St. Paul Railway Company's trains.

Throughout, the present catenary standards will be followed exactly. The messenger cable will be of ½-in., seven-strand, galvanized Siemens-Martin steel, with hangers of ¼-in. galvanized steel rods. As the double trolley wire has proved so successful in giving a flexible non-arc contact, it will be used in the new construction in all cases except at sidings, where only one wire will be suspended from the catenary. The two trolley wires on the main-line tracks will be of No. 0000 copper, clipped to the closed loop hangers every 15 ft. in staggered relation, so that provision is really made for supports at intervals of 7½ ft. The hangers will vary in length from 8 in. to 27 in. Ten-inch air breaks and disconnecting switches will be installed at each side of every passing track.

#### LOCOMOTIVES

It will be recalled that the present St. Paul electric locomotives used for passenger service are really standard freight locomotives that have been provided with passenger gearing. The manufacturers have now been asked to bid on designs specifically intended for passenger service. This passenger type will then be made standard for such service, while the present machines will be used only for freight service. No change is contemplated in the pantograph collectors.

### Four Engineering Societies Form National Council

By co-operation of the four national societies of civil, mining, mechanical and electrical engineers, respectively, a representative body has been formed under the auspices of the United Engineering Society for the purpose of speaking authoritatively for all member societies on all public questions of a common interest or concern to engineers. At the organization meeting, held on June 27 in New York City, a committee was appointed to consider the best means of utilizing the inventive ability of members of the founder societies for the benefit of the government in the prosecution of the war, and the government bureaus have been informed of the desire of the council to be of assistance.

The council is composed of twenty-four members, five from each of the four founder societies and four from the United Engineering Society. The officers are I. N. Hollis, Worcester, Mass., president; H. W. Buck, New York, and George F. Swain, Cambridge, Mass, vice-presidents and Calvert Townley, New York, secretary.

### Employees' Club in Buffalo

The International Railway, Buffalo, N. Y., is organizing a club for all of its employees. At a recent meeting in rooms which are being fitted up on the second floor of the package express terminal, several hundred employees, clerks, carhouse men and others attended. The heads of all the departments were present and the spirit of co-operation shown indicated that the club will be a success. The club is being formed so as to bring the various employees of the company into closer co-operation.



# New Pacific Electric Repair Shops

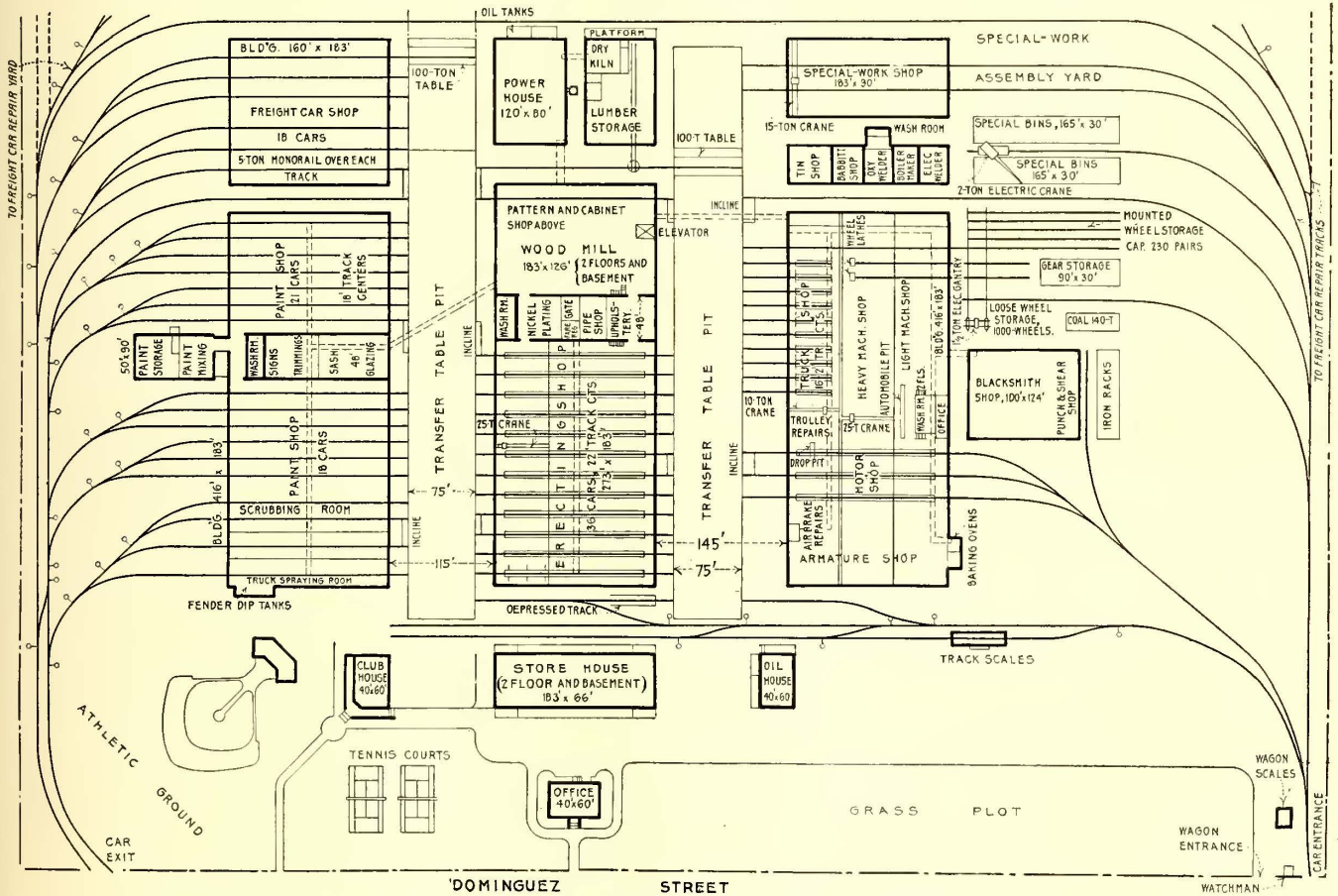
Plans Are Nearing Completion for a Splendid Plant for the Maintenance and Building of Electric Passenger Cars and Freight Cars at Torrance, the Coming "Iron City" of Southern California

**A**BOUT 20 miles south of Los Angeles, on the San Pedro line of the Pacific Electric Railway, lies the three-year-old town of Torrance, which is rapidly becoming the industrial city of southern California. Because of its proximity to San Pedro (the harbor of Los Angeles) and the availability of cheap land, many large companies have left cramped quarters at Los Angeles and have built at this point, and the Pacific Electric Railway is preparing to follow suit.

The new Pacific Electric shops are to be located on a plot of 125 acres, which will meet all present needs

regularly undertaken. All light repairs are expected to be handled in the various division carhouses, and the present plan is to run equipment for eighteen months or more between general overhauls. Owing to this plan there are many unique features in the general layout of buildings.

The accompanying general layout, shown below, is the result of several months' careful study directed toward exactly fitting the needs of this location and the Pacific Electric System. For example, it has been found that southwest trade winds prevail for 90 per



PACIFIC ELECTRIC SHOPS—GENERAL LAYOUT, SHOWING ARRANGEMENT OF PERMANENT BUILDINGS

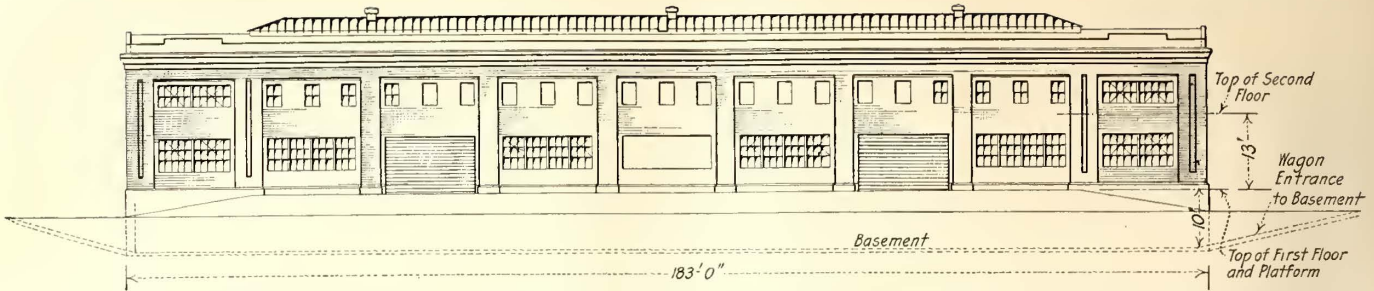
and allow for 100 per cent future expansion, besides permitting ample storage for heavy freight service. It is of interest in this connection to note that the removal of the present Los Angeles shops of the railway company makes way for the warehouse system of the Los Angeles Union Terminal Company. This change indicates that the Pacific Electric Railway is more than keeping pace with the rapid growth of the city of Los Angeles by helping to insure the city's progress along logical and economical lines.

The new shops are to have about 100 per cent more capacity than is now required for the company's equipment. Only heavy overhauling and new work will be

cent of the time, and in consequence the paint shop is located at the southwest corner of the yard where dust and soot from the shops will not interfere with painting and finishing operations.

In general the buildings have been laid out to require as few reverse movements and as little handling of material as possible. An outline of the routing plan may be obtained by referring to the plan. A car needing complete overhauling will be run into the east bay of the motor shop shown at the right. At this point connections between the trucks and the car body will be loosened, and parts needing repairs in this building, such as trolleys, controllers, air-brake equipment, etc.,





PACIFIC ELECTRIC SHOPS—ELEVATION OF STOREHOUSE, SHOWING ARCHITECTURAL FEATURES TYPICAL OF THE SHOP BUILDINGS

will be removed. The car then will proceed to the center bay, where the 25-ton electric traveling crane will lift the body, and the trucks will be rolled into the west bay, dummy trucks being placed under the body. The motors and their casings will be removed from the trucks by the 10-ton electric traveling crane and taken to the cleaning room in the armature shop, where they will be lowered through a trapdoor in the roof. The trucks will then proceed to the truck shop via either the transfer table or the 10-ton crane. The car body will be hauled by the shop locomotive via the 100-ton, 75-ft. transfer table into the erecting shop.

Arriving in the east bay of the erecting shop, the car body will be stripped of upholstery, gates, fare registers and all other parts in need of repair or replacement. These parts enter the departments assigned to them through doors in the fire walls and the car body will move toward the west bay to be repaired and reassembled. The repaired trucks will be hauled by the shop locomotive via the west transfer table to the west bay of the erecting shop. The car body, which is in this shop, will be raised by the 25-ton electric traveling crane and the trucks rolled under it.

The completely repaired car next enters the scrubbing room of the paint shop under its own power, where it will be thoroughly cleaned. The trucks will be sprayed with a waterproof paint in the truck spraying room.

The car then will proceed to the paint shop, where it will be completely painted and varnished, the new paint being dried by steam heat radiating from shallow pits underneath the car. The fenders and the parts which have been dipped will then be replaced and the car will be ready for service.

The wood mill, which is two stories high, will be served by a 12-ft. x 19-ft. operatorless electric freight elevator with micro-leveling devices. Shavings and sawdust waste will go through an exhaust duct to the boiler in the power house near by.

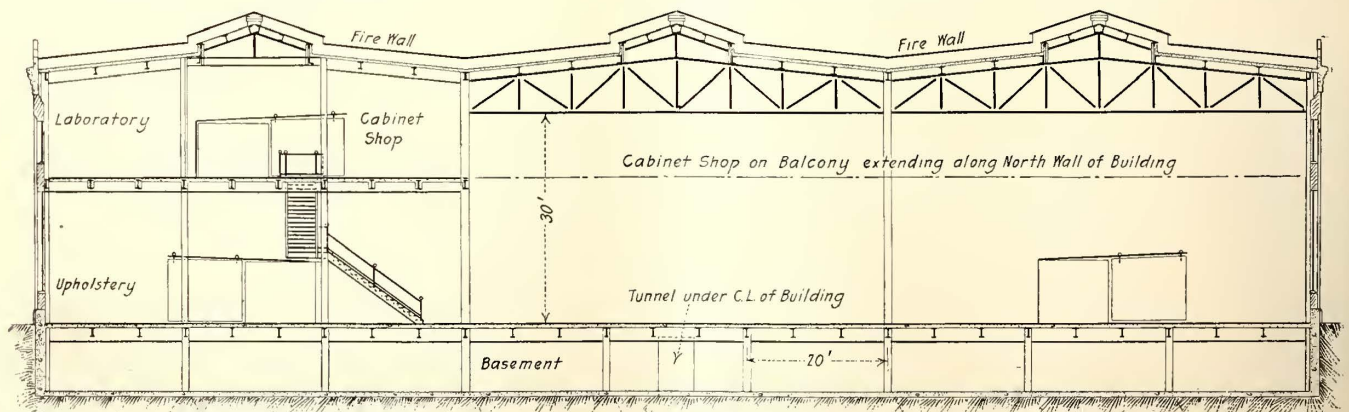
A substation will be located in the power house to care for local car shop and freight car movements. Owing to the climate, heat will be required only to accelerate the paint shop process.

Other interesting features of the shop layout are the basements under the wood mill, truck shop and machine shops for the shafting and the driving belts, thus eliminating much confusion and danger. Pipe ducts for conveying water, air, etc., are also installed below the floors. There are also provided a depressed track for unloading new cars or mounted wheels onto the transfer table, a steel-car straightener in the erecting shop; a completely-equipped special-work shop, a clubhouse and athletic grounds for employees, and an automobile pit in the machine shop.

Extensive facilities for the manufacture as well as the repair of cars are to be provided to the north of the shop buildings shown on the layout. Plans for the immediate future include the erection of a temporary shop 220 ft. x 72 ft. for the purpose of constructing standard freight cars. This construction is to be of temporary rather than permanent character because of the fact that the Pacific Electric Railway expects to commence work at once upon 300 or more box cars of 80,000-lb. capacity. Since permanent buildings for car-manufacturing purposes could hardly be completed in less than nine months' time, a temporary structure will be used for the present.

The principal buildings are to have steel frames, brick walls, reinforced concrete roof, steel sash and creosoted wood block floor. Large window openings will be provided in the side walls, which, together with three continuous runs of skylight 15 ft. wide in the three main buildings, will give a maximum of daylight.

Although it is planned to make the greatest possible use of machine tools and other equipment now at other shops, the cost of the Torrance Plant, including new cranes, transfer tables and other transport devices, will be about \$1,200,000, making it one of the most complete electric car repair shops in this country.



PACIFIC ELECTRIC SHOPS—CROSS-SECTION OF WOOD MILL, LOOKING SOUTH TOWARD FIRE WALL





ROCK ISLAND SHOPS—TRUCK SHOP EQUIPPED WITH MONO-RAIL TRAVELING HOISTS

## Tri-City Railway's New Shop

A Combined Shop and Carhouse with Exceptionally Complete Equipment Has Been Built by This Company at Rock Island, Ill., Particular Attention Being Given to Minimizing Fire Risk by the Use of Reinforced Concrete Construction and Frequent Fire Walls

A NEW carhouse and shop building has recently been built by the Tri-City Railway Company to replace a brick and steel-truss structure that was destroyed by fire four years ago. The new building was constructed as two separate units, the first consisting of the four carhouse bays, which were erected on the site of the fire shortly after it occurred. This work was begun in June, 1913, and was completed for car storage and temporary accommodation of some shop equipment by December of the same year. Construction of the second unit was postponed for financial reasons until August, 1916, and this was completed in its details this spring.

All of the design and engineering supervision of the new structure was handled by the company forces, as were also the track work, much of the rock excavation, and the clearing away of the fire débris. The building construction was contracted to a local firm. While the second unit, which replaced an old wooden carhouse, was being built the superintendent, receiver and trainmen were housed temporarily in an old car set out in one of the unheated bays previously constructed, and much of the machinery and stock was placed in an adjoining lot under a 40-ft. x 80-ft. tent.

The new building occupies an old quarry site and, at the rear, extends close to a high bluff. Foundation difficulties were experienced because of the greatly varying depth of a very hard limestone and on account of a large brick sewer that diagonally crosses the lot near the surface. Construction throughout consists of reinforced concrete columns and beams and roof slabs with tar and gravel topping. Partitions are made of paving block laid in half-cement mortar, and metal sash and skylights, Kinnear doors and a front of dark

brown brick with terra-cotta trim have been installed.

The entire building of eight bays has a storage capacity for sixty-three cars and a shop capacity for sixteen cars. Normally thirty-five cars operate from this carhouse, with an ordinary maximum of forty-five during peak hours.

There is installed a heating system that consists principally of three-column and four-column radiators from 32 in. to 45 in. high, depending on the location, together with pipe coils hung on the walls. Returns are carried through a concrete trench to an automatic pump in the long inspection pit shown in the plan drawing of the machine shop. This trench is covered by a 2-in. reinforced-concrete slab, made in sections, which can be lifted out if required.

For lighting there is a system controlled from a central switchboard in the carpenter shop near the receiver's office. Additional switchboards control the lights in each shop, and there are individual or group switches in the office portion of the building. Base outlets are provided in the pits, also in the columns of the paint and carpenter shop, these being intended for attaching lights with long cords. In general the lighting is provided by 100-watt type "C" Mazda lamps, and all of the lamps in the shops are provided with 16-in. porcelain reflectors.

Four tracks run through the carpenter shop. One of these goes outside the rear of the carhouse and alongside the wooden shed for lumber storage. Including the wood mill, the size of the carpenter shop is approximately 100 ft. x 100 ft. All of the wood-working machines are run by individual motors, and a cyclone blower system carries the sawdust and shavings to a collector over the boiler room, in which a vault is pro-





ROCK ISLAND SHOPS—CARPENTER SHOP AND WOOD MILL WITH MOTOR-DRIVEN TOOLS

vided for shaving storage. The glue room is provided with a lathe with 16-in. swing, 8-ft. centers, and glue pots which are heated by gas. A temperature of 80 deg. Fahr. is provided for this room.

The paint shop is about 100 ft. x 54 ft., with the paint-mixing and sash-and-door rooms at one side. These rooms, as well as the armature room and the curtain and register room, are separated from the paint shop by iron grill partitions.

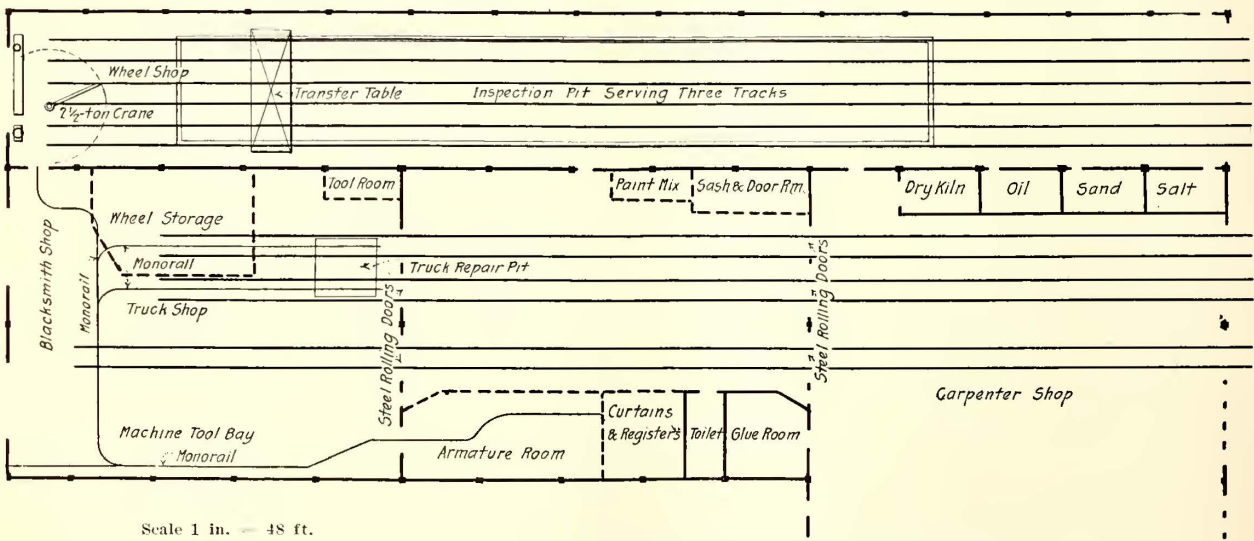
The machine shop is about 95 ft. x 75 ft., and the bay adjoining this shop is provided with a long pit under three tracks, which is utilized for car inspection.

A wheel press and wheel borer are installed at the rear end of this bay, and there is also a transfer table

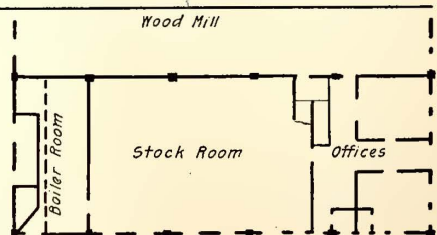
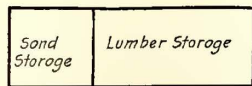
connecting the three tracks. An overhead carrier system is provided for connecting the machine shop pits and the machine tool bay with the armature room.

To support the trolley wire over the shop tracks a steel insert is provided in the bottom of each concrete beam at the center line of each car track. To this insert is bolted a piece of wood 4 in. x 4 in. x 22 in., this being placed parallel to the track. The carhouse hangers for the trolley are fastened to the outside end of this wooden block.

A wooden lumber storage shed is provided at the rear section of the shops, the size of this being 20 ft. x 40 ft. Adjoining this is the main sand storage, 20 ft. x 20 ft. in dimensions, this giving a capacity for 200 yd.



ROCK ISLAND SHOPS—  
PLAN OF SHOP BAYS  
ADJOINING CAR  
HOUSE





of sand. The sand room, from which the cars are sanded daily, is located, together with the salt room, oil room and dry kiln, between the carpenter shop and the inspection bay. The oil room is provided with five Bowser pumps with underground storage tanks, and also with a rack on which oil barrels are placed by means of a chain hoist operating on an I-beam.

Following is a list of the machine tools installed: For the machine shop, three engine lathes, radial drill, two drill presses, shaper, milling machine, bolt cutter, grindstone, dry grinder, tool grinder, drill grinder, power hack saw; for the blacksmith shop, two forges, furnace, air hammer; for the wheel shop, wheel press, wheel borer, dry grinder; for the wood mill, two jointers, planer, rip saw, cut-off saw, shaper, band saw, boring machine, sticker, sander, tenoner, swing saw, mortiser, grindstone, emery wheel.

Two floors are provided for part of the building. The two-story portion is used, on the first floor, for receiver's and superintendent's offices, stock room and boiler room, and, on the second floor, for trainmen's quarters. The stock room is provided throughout with metal shelving, the size of this room being 53 ft. x 37 ft.

For the shower baths and washroom in the trainmen's quarters on the second floor a Ruud automatic water heater is provided in the boiler room, a reserve capacity being provided near the heater. The trainmen's quarters have a poolroom containing two standard pool tables, with chairs and fixtures finished in dark brown. The floor is covered with linoleum. The trainmen's locker room is provided with 129 lockers, and there is a meeting room at the rear of the second floor which has a platform at one side, base outlets being installed for attaching moving-picture apparatus.

Virtually everything possible was done to make this carhouse and shop a low fire risk. The brick and concrete walls, with concrete columns, beams, roof slabs and skylight curb, provide as nearly a fireproof structure as possible. All bays are separated from each other by 13-in. walls, and openings are protected by double fire doors, while the partition wall between the paint and machine shops is provided with double rolling shutters. Fire extinguishers, sand pails, fire hydrants and other protective devices have also been provided to minimize the fire risk and secure advantageous insurance rates, and an A. D. T. system has been installed, while an additional city fire-alarm box near the property is being considered.

Intercommunicating telephones are provided in each shop with a central station in the receiver's office.

## The Coming Decade in Development of the Electric Street Railway

E. H. McHenry Visualizes the Immediate Future in the Light of Experience of the Steam Railroads

In discussing some of the present aspects and future prospects of the electric railway business with one of the editors of the *ELECTRIC RAILWAY JOURNAL* recently, E. H. McHenry of the firm of McHenry & Murray, New Haven, Conn., formerly vice-president of the New Haven Railroad, expressed some ideas which may well be pondered carefully by the managers and other operators of electric railways.

Reasoning from the analogous history of the steam

railroads, Mr. McHenry expressed the belief that the street and interurban railway is entering upon a decade in which very difficult conditions will be encountered. The ever-increasing demand for improved and additional service cannot be so readily compensated by commensurate increase in fares as in steam railway service by reason of the practical and psychological limits set by the all but universal adoption of the "nickel" as the basic maximum "short-ride" fare. The public will not willingly consent to the establishment of another and higher basic rate, nor yet to the logical alternative of a reduction of the amount of service rendered for such fare. If restricted in the exercise of both alternatives, electric railways can then only find relief by the reduction of operating expenses, for which the opportunities will be relatively slender in the face of increasing charges for fuel, labor and materials, unless secured in the form of exemptions from taxes, paving assessments and other burdens of like character now superposed upon the service requirements. Relief in this form, although reasonable and sound in theory, cannot be expected until the public has been educated by bitter experience into a clearer perception of the relations of the character of the service demanded to the cost of such service and of the inherent unreasonableness of its demand for service of a higher value than that for which it is willing to pay.

A general and bad breakdown in steam service was first necessary before even a glimmering perception of this relation recently began to dawn upon the public, and it is much to be feared that a costly and trying experience of the same kind will be necessary in the lighter and less completely unified electric railway service before this fact will be brought home to the public and the necessary relief afforded.

The steam railroads, it is hoped, are emerging from their dark days, for the public is showing a willingness to bear its share of the burdens which have been laid upon the railroads by economic conditions. It is natural that relief should come to the steam railroads first, because it is clearly evident to the public that the prosperity of the country depends upon having adequate and efficiently operated railroad facilities.

The case of the electric railways is different, in a way, although ultimately they will be granted relief for the same reasons as those effective with the steam railroads. It is, however, less evident to the riding public that it is dependent upon the electric railway. In the cities it is often possible to walk rather than ride, or the irresponsible but convenient jitney may tempt the prospective rider away from the safer and more comfortable trolley car. The private automobile, of course, is a serious competitor of the electric railway, not only in the cities but also outside. Municipal ownership of street railways has been proposed as a remedy for the difficulty of operating them with satisfaction to the public. This, in Mr. McHenry's opinion, would not prove satisfactory or economical. Considering the returns which are made for municipally owned and operated roads here and abroad, it is clear that the public does not receive in the form of profit as much as privately owned railways pay in direct and indirect taxes. This fact also the public will appreciate in time and will so modify the conditions under which the railways are permitted to operate that those who have money invested in these railways may receive a fair return.



## New Home for Lincoln Traction

Building Just Erected by Lincoln Traction Company  
Officials Provides Beautiful Offices  
for Company Business

A BEAUTIFUL white tile concrete and steel ten-story office building has recently been built at a prominent corner on the principal business street of Lincoln, Neb., by the Lincoln Terminal Company, the officers of which are officials of the Lincoln Traction Company. Part of the main floor is given over to salesrooms for the light and power division of the company's business. On the third floor a suite of offices extending across the front of the building is used by the traction company officials. The president's office occupies the central room of this suite, with the superintendent of the lighting division on one side of him and the vice-president and general manager in charge of the railway end of the business on the other side. The general manager's office overlooks the principal car lines in the downtown district, thus making it most convenient from an operating standpoint. The other offices used by the traction company are grouped about this principal suite across the front.

The dispatcher's office is located over the main entrance to the building and on the half story off the landing between the first and second floors. The entire front of his office is window glass, which greatly facili-



NEW TERMINAL BUILDING AT  
LINCOLN

A telephone mounted on a post at the curb immediately in front of the dispatcher communicates direct with him.

The front section of the basement of the terminal building is finely equipped for the use of trainmen. Access to these rooms is gained by a short stairway from the lobby of the building or from an outside stairway at the side of the building. These rooms extend under glass sidewalks on the two sides of the building which give ample day-lighting to the trainmen's quarters. A large billiard and game room is finely furnished and is equipped with four regulation billiard and pool tables, forming a popular and attractive place for the trainmen off duty. Another room is equipped with a long table and chairs for the use of the trainmen in making out reports. A bulletin board extends along one wall, and all notices to trainmen are posted here in frames behind glass. Just off this room is an office for the use of the superintendent of transportation, and this is also well lighted by means of glass in the sidewalk above. Another fairly large room is equipped with steel lockers and steel tables, where the men may eat their lunches. Just off this room is a large lavatory and toilet room, finished in marble and tile and equipped with the most modern type of porcelain fixtures and a marble shower bath. The locker room and toilet room are located right at the foot of the stairway so that they are very conveniently situated for the use of the trainmen when on or off duty.

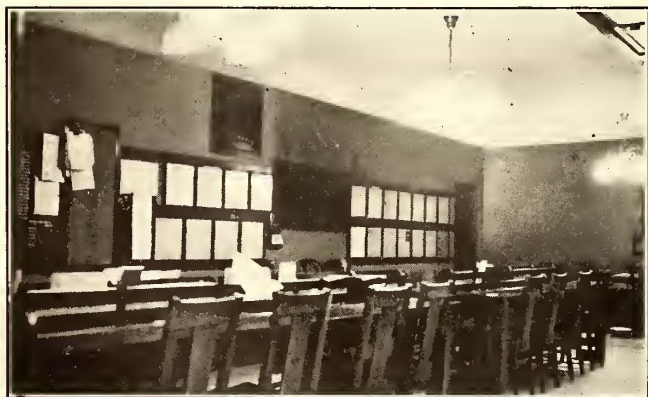
## Why Kansas City People Understand

The Advertisements from the Daily Papers Reproduced Herewith Show How the Public Is Informed About Railway Problems

PREVIOUS articles in the ELECTRIC RAILWAY JOURNAL have told of the success which the Kansas City (Mo.) Railway is having with its public relations work. The advertisements reproduced herewith from the daily papers simply show some of the more recent publicity work. For example, the daily publication of the causes for street car delays has been one of the most successful features of the company's "let-the-public-know" policy. It shifts the responsibility from the railway and makes the passengers "sore" at the unavoidable track conditions instead of at the company.

Any improvement in the company's service is thought to be a fit subject for advertisement, for otherwise the riders may fail to notice the change for the better. Likewise, the cartoon form of telling of the higher material costs is effective and may serve to place the people in the right frame of mind to appreciate the necessity of an increase in fare.

Recently an unusual newspaper advertisement expressed the company's regret for a serious accident which had happened that day. This was published in the same issue with the story of the accident. The newspapers secured all their information concerning the accident from the publicity manager, E. B. Athley, who, as is his custom, told the absolute truth. It was one of those cases where no one seemed to be particularly to blame, there being perhaps a combination of carelessness on the part of both parties. The advertisement was used simply to point out the need of greater care on the part of everyone. Neither of the newspapers which ran the story attempted to place the

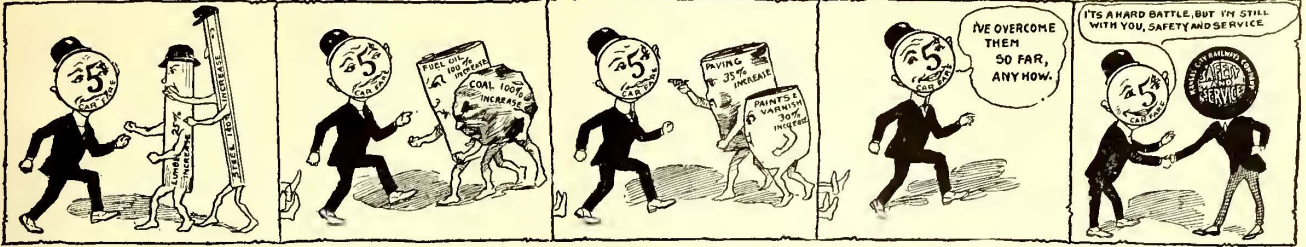


TRAINMEN'S REPORT ROOM IN THE BASEMENT

tates his control of cars and trainmen. Being only a short distance above the ground, he is able to talk readily with and signal trainmen in front of the building. His office is also within easy access of the trainmen when they have occasion to talk with him personally.



INCREASED COST SO FAR HAS FAILED TO KEEP HIM FROM SAFETY AND SERVICE. HOW LONG CAN HE CONTINUE?



Despite the struggle due to advancing prices in all material and labor costs, The Kansas City Railway Company is steadily increasing service and insuring safety devices. The rate of fare, due to extension of transfer privileges, is decreasing. The increased cost of maintenance and operation for the year 1917 will probably be \$500,000 greater than that in 1916. Despite this increased expense the company will build approximately ten miles of extensions and purchase twenty-five additional cars during this year. The Twenty-fifth street cross-town line in this city, and the Thirtieth street cross-town line in Kansas City, Kansas, are now under construction. The Indiana avenue extension, the Thirty-ninth street cross-town line and the Troost avenue extension will begin

shortly. Every extension, every cross-town line means better service, permits more freedom of movement about the city, but does not increase the fare! Note—These drawings and statements are published that the public may know what is being done by The Kansas City Railway Company in building up its system and in the development of this great community, despite the tremendous handicaps under which all new work is being prosecuted, and notwithstanding that the fare still remains at five cents, one of the few commodities whose price has not advanced in the present abnormal period.

The Kansas City Railways

Deeply regret the serious and unfortunate accident at Mt. Washington Tuesday forenoon when seven persons were injured.

This company is striving to its utmost to impress carefulness and safety upon each of its employees and asks the public, and particularly the drivers of automobiles, to exercise great care in passing in front of cars at street crossings and elsewhere. None of us can be too careful.

Street Car Delays

Friday Morning, April 27

At 8:52 a dray wagon stalled on the tracks at Sixth and Delaware delayed Argenta and Observation Park cars 25 minutes.

At 8:58 a wagon stalled at Nineteenth and Oak blocked Jackson Avenue and Holmes Street cars 12 minutes.

At 9:05 an auto backing from the curb collided with a Holmes Street car at Sixteenth and Walnut, blocking traffic 10 minutes.

Track rebuilding on the Independence Avenue line between Indiana and Bates Avenue caused some delay to the new Standard schedule installed today on that line. This interference will be temporary and the improved service will undoubtedly be working admirably in a few days.

Complaints and suggestions always given prompt, courteous attention.

THE KANSAS CITY RAILWAYS. April 27, 1917.

The Kansas City Railways

We exceedingly regret the delay in service at 8 o'clock yesterday morning. This delay was caused by an ice jam, sand and the extremely low stage of the river.

This has necessitated continuous blasting of sand bars opposite our quadruple intake pipes at the power plant, the river front and Grand Avenue.

For three hours—from 4 to 7 p. m.—Thursday, December 14, these conditions forced us to lessen the heat in our cars. This is the only time the heat in the cars has been reduced since it was first turned on late in October.

KANSAS CITY RAILWAYS 1500 Grand Avenue

The Track Hog a Menace to Traffic and Safety!

Sometimes you are in a hurry—and wait several minutes for a street car. You grow impatient and wonder what is the matter—and condemn the car service. The two, three, perhaps four cars come along in a bunch—the first two overcrowded. The following headlines from Wednesday's Star furnish one reason why the cars were bunched:

THE CAR TRACKS BOTTLED THEM

Bo Fisher and Don Wray fined for Delaying Troost Cars

Testimony showed traffic was blocked between Forty-seventh Street and Sixteenth. The officers remarked "that it seemed to be another of the car tracks as we drove there." Yes, they admitted the motorists raze the roads repeatedly, but "that didn't bother them."

Mr. Judge Kruman fined them! The officers in Kansas "only" the street car company was "disconnected," but the court took the view point that the people who were riding on the delayed cars and those waiting along the line were the ones disconnected!

THE KANSAS CITY RAILWAYS

President signature

Note—This advertisement is prepared in an endeavor to bring to the attention of the people of Kansas City a thorough understanding of traffic delays. The correction is on the heads of the company, not the company.

IMPROVED SERVICE ON FIFTEENTH STREET LINE

To Passengers—

Effective Monday morning, April 23, improved service will be established on the Fifteenth Street line during the morning and evening rush hour periods. Two additional cars will be placed in service on that date, and the following schedule will prevail during the two periods:

LEAVING 15th and Crystal Leaving 8th and Walnut

Table with 4 columns: Time, 15th and Crystal, 8th and Walnut, Time. Rows show departure times from 8:05 A.M. to 5:14 P.M.

It is the policy of The Railways to improve service on any line where the service is not entirely satisfactory.

In the desire of the company to satisfy all its patrons at all times.

Complaints and suggestions always given prompt, courteous attention.

THE KANSAS CITY RAILWAYS. April 22, 1917. President signature



Left!

The danger of ascending prices is steadily going upward, but—

Mr. Five-Cent Carfare remains unchanged while he sends Safety and Service to a high point.

The cost of copper has advanced 30 per cent; steel has increased 140 per cent in price; lumber 22 per cent; coal and fuel all 100 per cent; paving material 25 per cent; paint and varnish 30 per cent.

The cost of maintenance, due wholly to the increased cost of materials used, will be \$500,000 greater in 1917 than in 1916 for the street railway company.

The Kansas City Railways will build approximately ten miles of extensions during 1917. The Twenty-fifth Street cross-town line in this city and the Thirtieth Street cross-town line in Kansas City, Kas., have been started. The Indiana Avenue extension, the Thirty-ninth Street cross-town line, the Twenty-seventh Street, Troost Avenue and Blue Valley extensions will begin shortly. These extensions assist in building the city and improve street car facilities, but they do not increase the cash fare. They are for the accommodation and benefit of the public.

These extensions will be built despite the increased cost of steel, copper, the paving material and labor.

The Railway Company uses 1,200 tons of coal and 30,000 gallons of fuel oil every twenty-four hours. The advance in coal prices is well known to every householder. The advance in fuel oil has been greater.

The company uses 250,000 pounds of copper, 1,000 tons of steel and 100 cars of lumber annually. If you 2,000 cars of gravel, sand, brick, granite and lime every year in paving work.

In the last six months The Railways has purchased and placed in service a mile of new track—a solid line from Broadway to Troost.

It will purchase twenty-five additional cars this year. The company recently increased the pay of its employees voluntarily.

Complaints and suggestions always given prompt, courteous attention.

THE KANSAS CITY RAILWAYS. President signature



NOTE—This advertisement is prepared in the belief that the public has a right to know what is being done by the Kansas City Railways in the building up of its system with the use of steel, brick, granite, sand, gravel, coal, lumber, etc., and is steadily advancing in price.

Large advertisement titled 'AN UNEVEN STRUGGLE'. It shows a man with a '5¢ CAR FARE' sign on his head being pulled back by various cost factors: 'COAL & FUEL OIL 100% INCREASE', 'PAVING MATERIAL 25% INCREASE', 'COPPER 30%', 'LUMBER 25%', and 'LABOR 25%'. On the left, a sign says 'SAFETY AND SERVICE'. The text below explains the company's efforts to improve service despite rising costs.



blame on anyone. No one afterward contended that the advertisement was an acknowledgment of the company's responsibility for the accident.

A feature of the company's publicity policy is that the publicity manager never tries to get a story (free advertising) in any of the papers. If the company has anything to say, it buys the space. Then it can say just what it wants to. On the other hand, newspaper reporters are constantly dropping into the publicity manager's office for news, for they have learned they can depend upon him to give them the truth regardless of what the situation may be. If there is a company matter which, for certain good reasons, it is not desired to announce until later, the newspaper men are so informed. They have not yet betrayed this confidence.

## A Franchise for the Car Riders

**Under Columbus Suburban Franchise Car Riders Are to Have What They Demand in the Way of Service, and That Service Is to Be Furnished at Cost**

THE new franchise recently granted for the Westerville suburban line of the Columbus Railway, Power & Light Company, Columbus, Ohio, is said by the company to be a model for future electric railway franchises in Ohio. Some points of this were mentioned in the ELECTRIC RAILWAY JOURNAL of June 23, page 1156, but further details will now be given.

The two principles underlying the franchise are the following: First, the community served has a right to any kind of service it desires and to the control of that service. Second, the individuals receiving that service should pay the cost thereof, such cost to include a fair return on the capital invested.

### LENGTH OF FRANCHISE AND CONTROL OF SERVICE

The original franchise is for twenty-five years. Any time after it takes effect, however, the enabling body, the county commissioners, have the right to renew it for such period, not less than fifteen years or less than the then expired term, as they may be by law authorized. The commissioners through an appointed representative, the street railway commissioner, have the right to control the service, including the fixing and altering of schedules, the changing of service and the establishing of stops. They must not require service to such an extent that enough money will not be produced to make good any loss in the working capital later described.

The commissioners have general control of service, however, only when under the original franchise or any renewal accepted by the company the grant has more than fifteen years to run. When the grant or any renewal has less than fifteen years to run, the company assumes control of the service and may charge during the unexpired term any fare not in excess of the maximum now provided. If the commissioners, however, offer a renewal extending the life more than fifteen years and this contains no substantial changes or additions to the burden of the company, the commissioners retain control if the renewal is refused by the company. Yet it is especially provided that the right to accept such offer of renewal at all times remains with the company.

### EARNINGS ALLOWED AND FARES TO BE CHARGED

The company is allowed to earn 6 per cent upon its present investment and 8 per cent upon future capital

investment. Its present investment was fixed by arbitration at \$350,000. For the first ten years the company waives all earnings upon \$75,000 of this amount. It adds, however, a cash working capital of \$25,000, making a total investment of \$300,000 at the beginning of franchise operation.

The franchise provides for a sliding scale of fares. The following schedule has been adopted for ticket fares: (a) Four tickets for 10 cents; (b) five tickets for 15 cents; (c) ten tickets for 35 cents; (d) five tickets for 20 cents; (e) ten tickets for 45 cents; (f) five tickets for 25 cents; (g) ten tickets for 55 cents, and (h) five tickets for 30 cents. The maximum cash fare to be charged is 6 cents for any zone, there being three zones now established for a distance of 10.364 miles. As long as the zone rate of fare upon a ticket basis is 4.5 cents or less, the cash fare is to be 5 cents a zone. When the ticket fare is more than 4.5 cents, the cash fare will be 6 cents a zone. Nothing in the grant precludes the use of commuters' rates with the approval of the county commissioners, but such rates can be established only by the company.

The fare used at the first is that provided in (d), five tickets for 20 cents, or a cash fare of 5 cents. Changes from this or any other rate are to be made upon the following basis: To the working capital, beginning at \$25,000, are to be added each month all passenger and freight receipts. From it each month is to be deducted the cost of operation, one-twelfth of the estimated annual taxes and one-twelfth of the annual return upon the investment for that month. When the balance equals or exceeds \$35,000, the next lower rate of fare must be put into effect; and when it equals or is less than \$15,000, the next higher rate of fare. Any lowering of fares must take place at the order of the county commissioners after any monthly report from the company discloses the condition of the fund to warrant it. Any raising of the fare may be made by the company after its report is filed.

### IMPROVEMENTS, PURCHASE AND ARBITRATION

Either the company or the county commissioners may propose extensions, betterments or permanent improvements. When proposed by the commissioners, such improvements must be made if the company can procure the necessary money, unless they are held to impair the present or future ability to earn the allowed return. In such a case the company's claims must be arbitrated. Improvements proposed by the company must be approved by the commissioners before the expense is incurred. All approved improvements are, of course, added to the rate basis.

It is agreed that the company will at any time, upon six months' notice in writing by the commissioners, sell to the public its property at 110 per cent of the investment at the date of purchase. This will consist of \$350,000, plus the working capital of \$25,000 and all capital investments made after the date of the present franchise.

Whenever differences arise between the commissioners and the company they are to be submitted to arbitration, the decision of the board to be binding upon all parties. Each party is to select an arbitrator, the third being selected by these two or by a judge of the Court of Appeals of Franklin County. The board must render its decision within thirty days unless all members agree to an extension.



## Getting Up Booklets That Create Traffic

ALMOST every electric railway has issued booklets to guide strangers in reaching points of interest and at the same time induce them to use the street cars. It is often questioned whether such advertising really promotes traffic, but that it does has been proved in Denver. This city, of course, has the advantage of being a great tourist stopping point. In making up advertising booklets, J. C. Davidson, publicity manager, has capitalized this fact.

One of the booklets used some time ago by the Denver Tramway, entitled "What to See in Denver," secured a material amount of traffic which the company would not have obtained otherwise. The success was largely due to the manner in which the information was set forth and to the method of distribution. A small boy above the average in intelligence was employed to meet every important tourist train between 6 a. m. and 9.30 p. m. each day during the entire summer. He was dressed in a uniform with a cap bearing the word "Information." As the tourists came out of the depot, he approached them, saying he wished to give them a booklet about Denver. A total of 50,000 copies was distributed during three months by this means.

When the tourist opened this booklet, he found trips listed to points of interest in Denver, routing him from the Union Station and back again, and giving the time required and the cost. Forty-four trips were listed in this manner. The booklet also contained many pictures, and the reading matter pointed out the interesting things en route.

A booklet which created a great deal of traffic from local residents was entitled "Prize Picnic Places." To attract people who could not afford long interurban rides but were tired of going to city parks for outings, Mr. Davidson set about finding new picnic spots on the electric railway system. Through the company's car pamphlet, "Tram-o-Grams," prizes were offered for information as to new picnic spots. From sixty-four replies forty good picnic spots were selected, twenty or more being practically unknown. When a leaflet regarding these was prepared, with pictures and directions, a goodly amount of new traffic was secured.

## Jitneys Should Be Regulated

THE circular reproduced in the opposite column summarizes in a striking way the reasons why the public should be interested in the regulation of jitney traffic. Six thousand of these circulars were sent out by the Bay State Street Railway, Boston, Mass., to its employees. In each case the circular was inclosed with the current issue of *Triangle Talks*, the employees' publication.

Copies of the circular were also stacked up in the waiting rooms of the company. Others were inserted in all outgoing letters. Moreover, the publicity department furnished the newspapers in the company's territory with extracts of the cuts, and many of them reproduced the circular. All this has helped to make the public better understand what a "fair deal" to electric railways means.



### Why Every Citizen Should Be Interested Actively in Regulating Jitneys

NO fair-minded citizen asks that jitneys which give service to citizens should be prevented from doing business at a profit. All that is asked is that in making private profits they do not do so at the expense of other transportation companies which are prevented by law from meeting unfair jitney competition.

What is wanted is a Square Deal for the jitney owners, the public, property owners who must pay the cost of providing the streets upon which jitneys operate, and for the other transportation companies that are now compelled to submit, and are willing to continue to submit uncomplainingly, to regulation by the Public Service Commission.

Why should every citizen be interested actively in regulating jitneys?

**First:**

Because unregulated jitneys are dangerous. Unless they are inspected by competent public officials, unless their drivers are examined as to their competency and their actions controlled by law, the very lives of those who ride are in constant danger.

**Second:**

Unregulated jitneys, darting here and there about the city, with no definite route to be followed, endanger the lives of people who walk. They complicate the traffic problem, use the streets for private profit without paying for the privilege, and, as a rule, are operated by men who have no financial responsibility, thus making it impossible for an injured person to recover damages.

**Third:**

Unregulated jitneys violate the American principle of fair play. They are operated at the convenience of their owners, whereas the street railway is compelled to operate a definite number of cars on schedule time over a fixed route for a certain number of hours every day of the year. Street cars must be run in fair weather and in foul weather. Unregulated jitneys run only when weather conditions are favorable.

**Fourth:**

Unregulated jitneys violate the principle of fair play in another way. They take the cream of the business from the street cars by operating during the rush hours of the day when the law compels the street railway to provide extra equipment, and oftentimes are not operated at all during the dull periods. The street cars, on the other hand, must be run all the time.

**Fifth:**

Unregulated jitneys are usually unlighted jitneys, and therefore are a moral menace. The evil of the unlighted jitney is so great that every organization which is interested in protecting young girls should put back of the ordinance for the regulation of jitneys every ounce of power they possess.

**Sixth:**

Unregulated jitneys, allowed as they are to run as they please when they please, are costing the street railway companies hundreds of thousands of dollars every year. Ask any street railway official what it is costing his company. This loss of revenue is so great, that the very lives of street railway companies are endangered. Ask yourself: "Am I willing to lose and have my fellow-citizens lose the service rendered by the street cars that operate in my city?"

**Seventh:**

Unregulated jitneys, where they are not endangering the lives of the street railways, are robbing those companies of so much income that they cannot buy new cars, modernize old equipment, make repairs on tracks, and do other things which perfect service to the riding public demands.

**Eighth:**

Unregulated jitneys, paying nothing for the privilege of using the streets for private profit, and paying no part of the cost of keeping those streets in repair, are taking an unfair advantage of all property-owning citizens whose taxes must necessarily be increased in order that the streets worn out by heavy jitney traffic may be kept in condition.

In giving your support to the ordinance for regulating jitneys, you are asked to insure to your city the safety to which those persons and companies doing business in your community are clearly entitled.



In crossing the street, this woman was hit by a jitney and received injuries which kept her in the hospital for many weeks. Doctors' bills, hospital bills, medicine bills piled up. Then came the day when her attorney announced to her that the owners of the jitney which had caused the injury were without money, and that to sue them would be useless. Therefore you will see that for the protection of the public, jitneys should be bonded.



## New York Line Presents Case

New York & North Shore Traction Company Tells First District Commission Why It Needs a Seven-Cent Fare

On July 16 the New York & North Shore Traction Company, Roslyn, N. Y., began and finished the presentation of its direct case on its application to the Public Service Commission for the First District for an increase in fare from 5 cents to 7 cents. As noted in the *ELECTRIC RAILWAY JOURNAL* of July 14, this company has been granted a fare increase on its zone system in Nassau County, and it now is seeking relief for its lines in Queens County, New York City.

The company presented more than fifty exhibits to show its financial and operating status. The fixed asset account of the company as of Dec. 31, 1908, adjusted to meet commission requirements, was \$358,735. Between then and June 30, 1917, there was added under commission supervision \$1,253,272, making a total of \$1,612,008. All of this, according to J. G. Moran, secretary and general manager, represents used and useful property except \$1,100, the original cost of a lot purchased for a substation which was not built.

The securities approved, issued and outstanding total \$1,779,350. The difference between this and the fixed assets of \$1,612,008 is represented by discount on bonds, materials and supplies, cost of bonds deposited with the city and other items for which securities were allowed but which were ordered credited to fixed capital and written off through a suspense account.

Beginning with July 1, 1915, the company set aside a reserve of three-quarters of 1 per cent of the gross receipts for depreciation of equipment and 1.5 per cent for depreciation of way and structures. If this rule had been in force since the beginning of complete operation in 1910, the accrued depreciation, the company estimates, would amount to \$16,587 for way and structures and \$8,303 for equipment. With the straight-line method at 3 per cent a year, the total accrued depreciation would be \$262,463.

According to the company's comparative income statement since the year ended June 30, 1911, the gross income was as follows: 1911, \$28,568; 1912, \$40,307; 1913, \$19,302; 1914, \$39,365; 1915, \$49,560; 1916, \$49,803, and 1917, \$39,638. After paying interest on bonds, rentals and other deductions, the income available to the holders of stock (\$150,000 for 1911-1913; \$979,350 for 1914-1917) was as follows: 1911, \$19,369; 1912, \$21,582; 1913, \$7,317 (deficit); 1914, \$7,432; 1915, \$3,211; 1916, \$2,032, and 1917, \$8,882 (deficit). The company has never paid any cash dividends, and at no time has earned a fair return. The increases already granted by the Second District Commission are estimated to yield \$8,850 of additional revenue, and that desired from the First District Commission \$34,605.

Council for the commission brought out the fact that the company will be confronted with rapid transit competition in Queens County when the city program is completed. The commissioners then asked why it would not be advisable to adopt a zone system in this section instead of a 7-cent fare. Mr. Moran said that as far as the communities were concerned a zone system could be used on the lines in Queens County as well as on those in Nassau County, but that the company now has only P.-A.-Y.-E. cars operating in Queens County, and also

that a 7-cent fare would give more revenue now. When rapid transit competition developed, it would be time to discuss any needed way of meeting it. The hearing was adjourned until July 23 to enable the city to prepare cross-examination if it so wishes.

The beginning of the hearings on the applications of the Staten Island Midland Railway and the Richmond Light & Railroad Company for a 6-cent fare was postponed from July 16 to Sept. 10.

## Jurisdiction Partly Admitted

New York Second District Commission Grants Power to Raise Rates Above Old Legal Maximum—  
No Opinion Yet About Cases Involving Franchise Rates

The Public Service Commission for the Second District of New York announced on July 18 at Albany a partial decision as to its power to grant an increase in fare from 5 cents to 6 cents to twenty-eight petitioning electric railways in its jurisdiction.

The commission stated that as to all cases pending before it in which authority to increase rates does not involve determination of the effect of alleged contracts or franchise restrictions as to such rates, it is of the opinion that it has authority in a proper case to permit an increase of fare in excess of the maximum fixed by the railroad law. This in substance prohibited street surface railways from charging any passenger more than 5 cents for one continuous ride from any point on its road or on any road, line or branch operated by it or under its control to any other point thereof or of any connecting branch thereof within the limits of any incorporated city or village.

In regard to applications for leave to increase rates which if granted would authorize a rate in excess of that alleged to have been fixed under contract with or by a franchise granted to and accepted by the railway corporation, the commission made at this time no determination as to its jurisdiction. It is not known now how many cities will raise this issue, but the fact will probably become apparent when the commission resumes its hearings on July 25.

As to the method of procedure in cases to be taken up in accordance with the foregoing, and in cases which may be taken up in pursuance of further determination that may be made by the commission as to its jurisdiction in any of the pending applications, the commission stated that the burden of proof is upon the railways to establish that the present maximum rates are unjust and unreasonable. Moreover, they must show that with due regard among other things to a reasonable average return upon the value of the property actually used in the public service and to the necessity of making reservation out of income for surplus and contingencies, the proposed rates properly should be approved and fixed by the commission as just and reasonable.

The Public Service Railway, Newark, N. J., has paid to the city of Newark \$199,948, which represents 5 per cent of the gross income from fares within that city during the past year. The sum exceeds that paid in 1916 by \$22,297. The Newark anniversary celebration had a considerable effect upon the year's earnings.



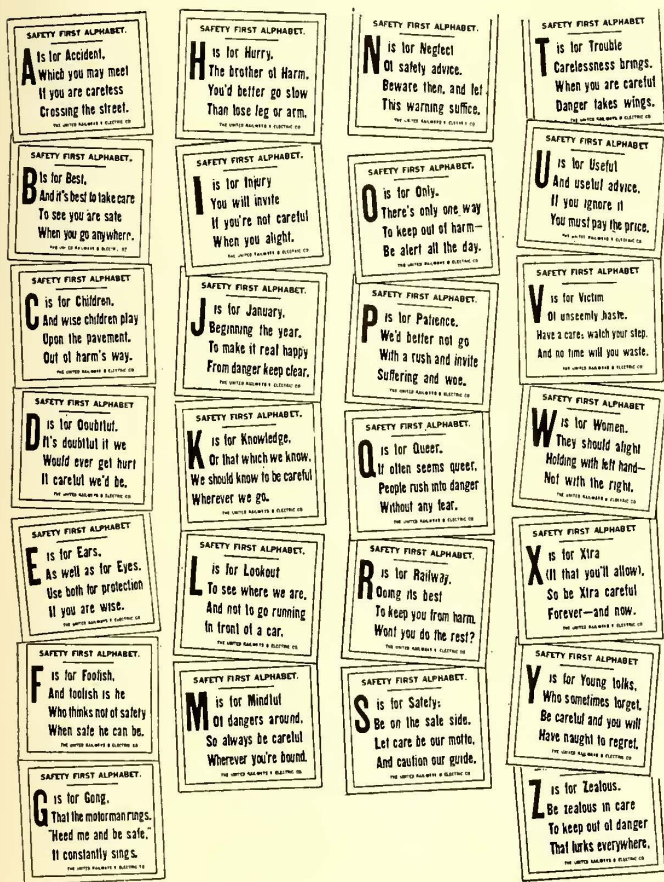
## Safety from A to Z

How the United Railways & Electric Company Has Told the Story of Safety Through the Alphabet

THE United Railways & Electric Company, Baltimore, Md., has for years, in the course of its varied safety work, kept in its cars racks for the display of large cards. The most recent set of cards, which are described by Dwight Burroughs, publicity manager, in the June *United Railways Forum*, were those used for a "safety alphabet."

This alphabet was designed with simple words and catchy jingles, so that the verses, as shown in the accompanying cut, might be read and remembered by children as well as adults. When the first letter appeared, the company began to receive communications from all sorts of self-constituted literary critics. While the comments and criticisms were rolling in, however, something else was happening.

Every boy and girl in the city was learning verse "A." It went into the homes and was discussed. People could not help remembering it and wondering what the next verse would be. Verses "B" and "C" met with the same reception, and so the alphabet went on performing its mission of attracting attention to safety.



BALTIMORE SAFETY ALPHABET

Soon the principals of various public schools asked for the cards so that they could be used for the purpose of instilling the safety idea among the pupils.

At a night school in northeast Baltimore, attended chiefly by aliens, some of them adults, the principal uses the cards as an aid in teaching the English language and safety at the same time. The school found that it could get from the cards a vocabulary of simple

words which enabled the pupils to converse in English without other mediums.

The cards were used at the Central Y. M. C. A. in connection with a class in safety. Several churches and Sunday schools employed the cards to teach the safety lesson at entertainments. Individuals secured sets of the cards for the instruction of children in their families.

Thus, while the safety alphabet was performing its mission in the racks in the cars, it was also entering the schools and homes of the city with its simple message—a message not easily forgotten.

## COMMUNICATION

### Paving Is Sometimes a Proper Charge

SOUTHWESTERN ELECTRICAL & GAS ASSOCIATION  
DALLAS, TEX., July 16, 1917.

To the Editors:

I have read with much interest Mr. R. C. Cram's article on "What Shall We Do with the Paving Burden?" and the editorial on this article, both in your issue of June 23. Within the last year or two I have spent considerable time examining track and paving in a large number of cities, in size from forty and fifty thousand population to those of a quarter of a million, and I have been very greatly impressed by two important conditions. The first of these is the effect of track construction on the useful life of its abutting pavement. The second is the wonderfully changed results caused by the recent almost exclusive operation of self-propelled rubber-tired vehicles over city pavements. Perhaps I can better illustrate my impressions in this matter by giving the views of the city engineer of a large city which I lately visited. These views have since been duplicated by those of many other city engineers and by city officials who have control of streets and roadways.

In talking with this engineer on the subject of paving I said that it had always seemed to me inequitable to compel the railways to pay for the installation, maintenance and renewal of the pavement in and abutting their track when the operation of the cars on this track in no wise used or injured the pavement and when, as an actual fact, steel-tired wagons used the rails as a wheel-way. His reply was virtually as follows:

"That may be partially true under certain conditions and a portion of it may have been absolutely true in the past, but the situation has changed considerably within the last few years, partly in favor of the railways but partly against them. The part in favor is that the railways have begun to realize that the so-called 'elastic' or 'resilient' track with 'ballast' under it is a 'pavement destroyer,' as it allows to the track a slight vertical movement which is not shared by the pavement, so that the track sooner or later parts company with paving, to the detriment of both. Hence the nearer the railways make their track and their pavement one integral structural unit, the longer will be the life of both.

"The second condition is the change caused by self-propelled rubber-tired vehicles. We have in this city two streets on which there is very little steel-tired or



animal traffic. These two streets are approximately the same width, they are very nearly parallel for a long distance, and there is no great difference in the under-soil or the grades. Both are paved with the same character of pavements, viz., a plastic pavement with crushed stone filling, laid on concrete at about the same time and by the same contractors. One has no railway track on it; on a large portion of the other there is a single track, laid with grooved rail, and with turnouts. As both streets lead from about the same section in the heart of the city to the same manufacturing suburb, the traffic on each is a matter of choice. As the heavy trucks selected the street without the railway tracks just as soon as it had been paved, the lighter traffic, such as automobiles and fast operating delivery wagons, etc., uses the street with the railway track. Both these streets were paved about three or three and one-half years ago, and to-day the street without the track, and which has the heavier vehicular traffic, is in perfect condition, while that which has the railway track is commencing to have bad places closely adjacent to the rails, caused partly by the repairs which had to be made to the joints in the track and partly by the fact of the movement of the track in the pavement, this track being of the 'elastic' type with rail joints.

"Therefore I feel in this particular case, and it is duplicated in other parts of our city and in many other cities, that the electric railway is fully responsible on the one of these streets where it operates for all the repairs which will have to be made between its rails and for 2 ft. outside of them—if, indeed, it should not pay for the repavement of the entire street when the original pavement needs renewal. There are several types of pavement which, if properly laid on streets without railway tracks, will, with rubber-tired self-propelled vehicles, last almost indefinitely and with very slight repairs. This cannot be said of a similarly paved street where the pavement is cut longitudinally by two or four rails as this 'cutting' will by itself weaken the pavement and shorten its life beyond what it would be if it were an integral and unbroken whole."

These remarks are worth consideration by all electric railways. If there is one thing that is absolutely unstandard it is the matter of track construction and paving in city streets. All other structures are built according to thoroughly established engineering principles, yet the average city railway track with its superimposed paving is the only "structure" which is not built in accordance with the best engineering principles and practice, and it is the one which, of all street railway structures, should be so built because it is subject to more diverse stresses and strains than any other one of the structures.

Let the good work of the JOURNAL and Mr. Cram go on, but let it proceed in such a manner that it will point out not only where the railways have been at fault in laying their tracks so that the addition of their tracks to a street actually shortens the life of its paving, but also whether it is actually possible, under the present and coming conditions of the other vehicular traffic, so to construct the track and its paving that that track will not be a detriment to the street paving as a whole. The vital point is: that if this can be done, all future tracklaying must be so done and, if it cannot be done, the electric railways must make up their minds that they will—equitably and justly—have to pay not only all

costs of paving over their tracks but, possibly, the supplemental damage caused to the whole street paving by their track. This condition is looming up in the minds of those controlling municipal paving. No good will come from ignoring it. If there is a method of avoiding it, let it be found as soon as possible. If there is no such method, let us face the alternative and forefend it in every legitimate way.

H. S. COOPER, Secretary.

## Texas Claim Agents Meet

Texas interurban lines and city lines were well represented at the meeting of the Railway Claim Agents' Association of Texas at Galveston on July 13 and 14. R. L. Miller of the Northern Texas Traction Company of Fort Worth read a paper on the effect of pay-as-you-enter cars and one-man cars in reducing accidents. Mr. Miller said that both served greatly to reduce the accidents caused by persons attempting to board or alight from moving cars, explaining that with either car, if properly constructed, it is impossible for a person to attempt to board or alight from a car until the door is opened.

The handling of unreported claims against street railways was discussed by F. J. Johnson, chief adjuster for the San Antonio Traction Company, and K. M. Watson, general claim agent for the Northern Texas Traction Company. The best method of handling claims resulting from train or street car wrecks and several other topics were discussed by traction men.

## AMERICAN ASSOCIATION NEWS

### Public Utility Conference

Delegates have been selected to represent the American Electric Railway Association at the conference at Washington, D. C., to consider the provisions of the war revenue bill that relate to public utilities. Those who will represent the association are L. S. Storrs, E. G. Connette, J. N. Shannahan and E. B. Burritt.

### Why We Should Have Increased Revenue

The above was the topic discussed at the meeting of the Connecticut County section on June 27. This meeting was held at a local hotel and was preceded by a dinner served to 110 members. The section orchestra furnished music during the dinner.

The necessity for increased revenue was explained and illustrated in papers by L. S. Storrs, president; J. H. Sanford, purchasing agent; W. R. Durham, Jr., engineer maintenance of way; Leslie Spraggon, inspector of rolling equipment; W. E. Jones, statistician; A. S. Davis, supervisor of power, and C. H. Chapman, manager Bridgeport division. A chart prepared by the statistician showed how the company's expenses had increased compared with earnings, and how the net income had decreased for corresponding months this year and last. The accident record of the company and the nature of liability cases on the docket at the time were also treated by the assistant attorney of the company, S. W. Baldwin, and the attorney, J. F. Berry.



# EQUIPMENT and MAINTENANCE

HAVE YOU A GOOD WAY OF DOING A JOB?  
—Pass It Along

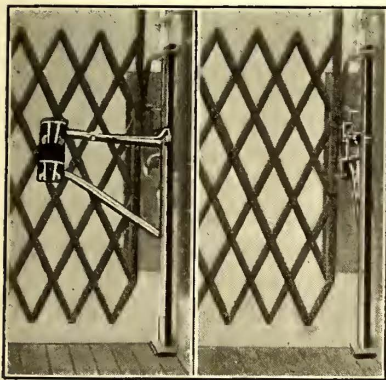
Read in This Issue: The First Installment of the Cost Data on Special Work Renewals, by M. Bernard

## Inexpensive Fare-Box Bracket and Window Sign

BY C. S. BANGHART

Vice-President and General Manager Binghamton (N. Y.) Railway

Prepayment fare boxes have recently been installed in some of our old open-platform cars by means of a swinging bracket shown in the illustration. This is arranged so that it can swing back and be securely



VIEW OF BRACKET WITH FARE BOX REMOVED, AND VIEW OF BRACKET IN OUT-OF-THE-WAY POSITION

fastened against the bulkhead when the fare box is used on the other end of the car.

The sockets into which the fare box fits are electrically welded to an iron plate which in turn is welded to the bracket pipe supports. The cost of the job was only \$2 per car, making a very cheap way of altering the old cars

so they could be used as trippers and for emergency service with the other equipment, which is practically all of the prepayment type.

The cars are loaded at the rear end and unloaded at the front. The sign "Fare Ready, Please," which is



INEXPENSIVE FARE-BOX BRACKET AND PAPER WINDOW SIGN

shown in one of the illustrations, is not painted on the window, but is printed on a strip of paper, using white letters on a black background. The paper is then glued to the window pane. This has proved to be an inexpensive sign and at the same time it is very effective as the white letters are illuminated at night by the car lights, which make them very distinct.

## Anti-Fouling Guards for Trolley Wheels

To prevent trolley wheels from being caught in overhead work with consequent tearing down of the construction or the distortion of wheel flanges, the United

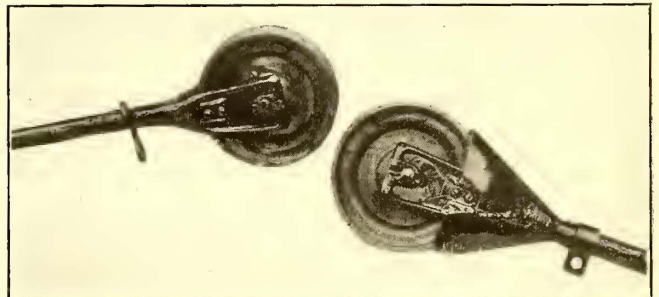


Photo by Mentz, San Francisco  
TROLLEY HARP BEFORE AND AFTER APPLICATION OF ANTI-FOULING GUARD

Railroads of San Francisco has devised the anti-fouling shields shown above.

The shield is made of two pieces of No. 12 sheet steel shaped on the dies shown in the illustration and fastened on each side of the trolley harp. The two sections are then welded together.

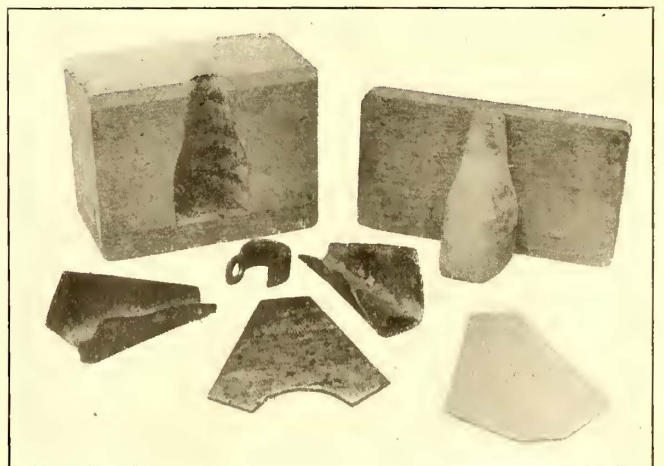


Photo by Mentz, San Francisco  
SHAPING DIES AND COMPONENT PARTS OF ANTI-FOULING GUARD



# Cost Data on Special Work Renewals—I

In Various Articles Published in Engineering Periodicals  
It Is Very Striking to Note the Absence of Any General  
Information Showing the Cost of Renewing Special Work

By M. BERNARD

Assistant Engineer Way & Structures Department,  
Brooklyn (N. Y.) Rapid Transit System

IT is evident that this subject has not received the consideration it deserves, since the cost of special work maintenance amounts to one-third at least of total track maintenance, exclusive of paving. The writer, therefore, with the hope of stimulating the publication of similar costs from other properties, has compiled a large number of cost data concerning the renewal of the various layouts of special work and plain curves. These data are the average of a large number of actual jobs. The costs include pavement restoration except where there is a 2-ft. strip of asphalt outside the outer rails, in which case the restoration of this strip is not included. The data on two kinds of plain curves are given below, and the remaining costs will be given in succeeding issues.

In order that these data may be of maximum use, an explanation of the terms used in the compilation follows: By "light traffic" is meant either the divergence of cars during progress of work, or a traffic of not more than 150 cars per day of twenty-four hours. "Average traffic" denotes the passage of about 325 cars per day of twenty-four hours, and "heavy traffic" that of 750 or more.

By "labor" is meant the labor cost of tearing out the old paving and special work and installing the new at the location where the work is done. "Handling" signifies the cost of loading the necessary materials at the various storage yards as well as the unloading of same at the place of renewal. It also includes the cost of transportation and the cost of removal of old or left-over material. Since the transportation is done by a subsidiary company, which adds profit and overhead expense to the net cost, this item may differ considerably from that obtained on other railways. Under "miscellaneous" are included the expense of city inspectors, expense incurred when portable crossovers are used for divergence of cars during renewal, watchmen's wages, and incidental engineering expense. The total of these three items—labor, handling and miscellaneous—therefore includes everything except the cost of materials.

On account of the unsettled labor conditions prevailing since the beginning of the war, the costs given are based on pre-war wages, the average track labor on which these costs are based being taken at 20 cents per hour.

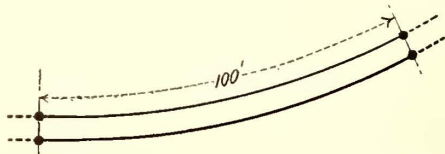


Fig. 1—Single Track Plain Curve (flat)

Length—100 ft. single track

Construction removed—9-in. girder rail—8-in. granite on sand  
New construction—7-in. girder rail—5-in. granite on concrete  
Pavement outside of track—Granite on concrete

|                              | Light Traffic | Average Traffic | Heavy Traffic |
|------------------------------|---------------|-----------------|---------------|
| Labor .....                  | \$144.00      | \$175.00        | \$195.00      |
| Handling .....               | 75.00         | 90.00           | 100.00        |
| Miscellaneous .....          | 28.00         | 35.00           | 40.00         |
| Total (except materials) ..  | \$247.00      | \$300.00        | \$335.00      |
| Cost per single track foot.. | 2.47          | 3.00            | 3.35          |

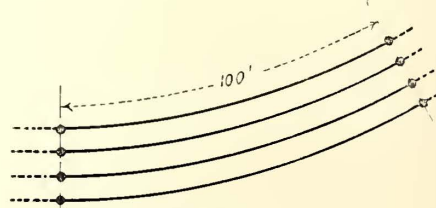


Fig. 2—Double Track Plain Curve (flat)

Length—100 ft. double track

Construction removed—9 in. girder rail—8-in. granite on sand  
New construction—7-in. girder rail—5-in. granite on concrete  
Pavement outside of track—Granite on concrete

|                              | Light Traffic | Average Traffic | Heavy Traffic |
|------------------------------|---------------|-----------------|---------------|
| Labor .....                  | \$290.00      | \$360.00        | \$405.00      |
| Handling .....               | 160.00        | 190.00          | 225.00        |
| Miscellaneous .....          | 60.00         | 75.00           | 85.00         |
| Total (except materials) ..  | \$510.00      | \$625.00        | \$715.00      |
| Cost per single track foot.. | 2.55          | 3.13            | 3.58          |

ADDITIONAL COST DATA TO BE GIVEN IN SUCCEEDING ISSUES



## Compact Rack with Horizontal Classification and Storage of Car Signs

BY W. P. LISH

Master Mechanic Fitchburg & Leominster Street Railway, Fitchburg, Mass.

Six hundred and sixteen car signs can be stored in a space but 15 ft. long and 5 ft. high, at the main car-house of this road, by the use of the rack shown in part in the accompanying illustration. The signs are classified



RACK WHICH FACILITATES HANDLING OF CAR SIGNS IN FITCHBURG

by horizontal sets of guide signs about 5 in. x 9 in. in size, mounted at the left-hand side of each section of the vertical storage panels as shown. Fourteen signs of a particular designation may be stored in each compartment, the latter being formed by 3/8-in. iron rods, bent as shown in the illustration and attached to a wooden frame of 2-in. x 1 1/4-in. members. Four vertical

## Wheel Grinding Made a Pleasure by Use of Dust Guards

Until recently one of the most unwelcome jobs in the shops of the San Francisco-Oakland Terminal Railways was the grinding of chilled-iron wheels. The emery dust had a most disagreeable way of impairing the cleanliness and health of the operator besides messing up the surroundings. All of this has now been over-

come by equipping the grinding machine with an exhaust box by which all dust is led to a barrel of water just outside the shop wall. The paste formed by the water and emery is used for filling in low spots around the yards.

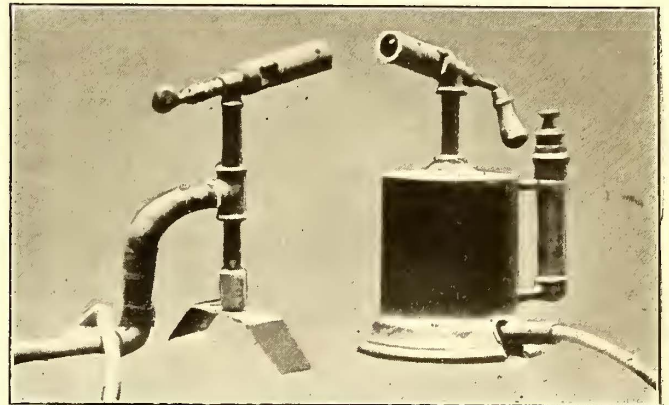
## Gas Versus Gasoline Torches for Paint Removal

BY HENRY MEYER

Master Mechanic Beaver Valley Traction Company, New Brighton, Pa.

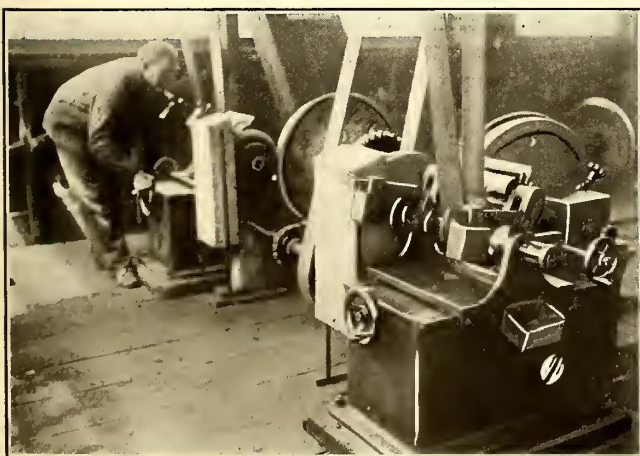
In our shops we have found that gas torches make a better means of burning off old paint from car bodies than the commonly-used gasoline blow torches.

The accompanying illustration shows a home-made gas burner and a gasoline torch that has been converted

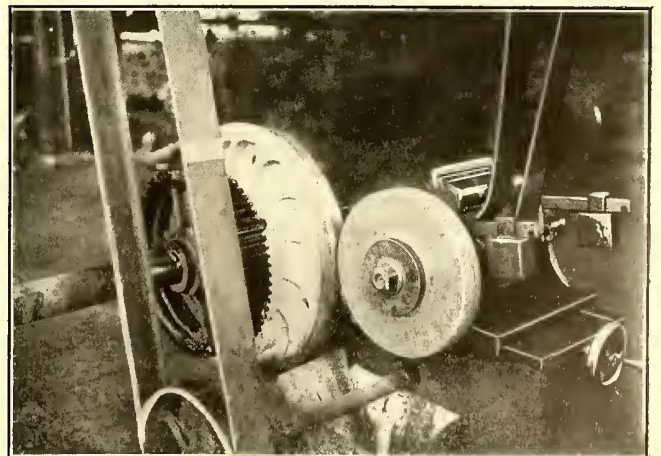


TWO TYPES OF HOME-MADE GAS BURNERS USED BY THE BEAVER VALLEY TRACTION COMPANY

for use with illuminating gas instead of gasoline. The gas connections for these burners are overhead, the tubing is light, and consequently the operator states that where formerly his left arm used to tire in cleaning paint from the car body on account of the weight of the gasoline in addition to the weight of the blow torch, now his right arm, which he uses for scraping, tires first because there is no stopping to pump up the air pressure. We have also found these gas burners to be desirable both from the standpoint of the time saved in cleaning off the paint and in the reduction of the fire risk in the company's shops.



WHEEL GRINDING MACHINE EQUIPPED WITH DUST GUARDS FOR PROTECTION OF OPERATOR



WHEEL GRINDING MACHINE WITH DUST GUARD REMOVED TO SHOW FLUE WHICH CARRIES AWAY IRON DUST



### Overhead Kinks from Cleveland

#### Threadless Pull-Over Casting, Spring for Trolley-Trough Hangers, Glass-Insert Section Insulators and Other Practical Devices

The first installment of the Cleveland overhead kinks was published in the July 14 issue of the ELECTRIC RAILWAY JOURNAL, page 64. The second and final installment, given below, describes several more ingenious pieces of overhead equipment which have been devised by James Scott, superintendent of overhead.

##### THREADLESS PULL-OVER

A pull-over casting so designed that it may be installed without the use of any tool other than a hammer is shown in Fig. 1. It may be used with an ear having a specially designed shank, or the ordinary pull-over ear can be adapted for use with this pull-over casting by

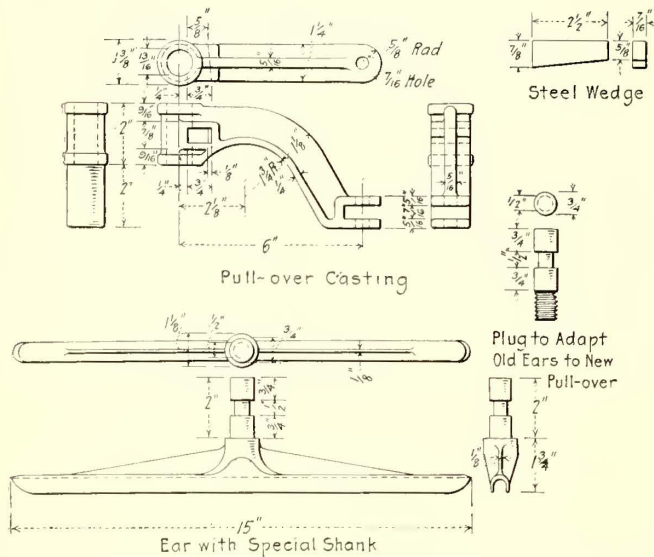


FIG. 1—DETAILS OF THREADLESS PULL-OVER CASTING AND EAR WITH SPECIAL SHANK

screwing a plug into the shank. A 13/16-in. hole in the pull-over slips over the shank of the ear and a small steel wedge, 2 1/2 in. long, is driven into the square hole provided in the casting for this purpose. The wedge, when driven in, locks with the groove in the shank of the ear and holds it permanently in place. The wedge is given a pitch of 1/4 in. in 2 1/2 in. This pull-over greatly facilitates replacements under heavy traffic conditions since the ear does not have to be removed and it is only a moment's work to drive in the wedge.

##### SPRING HANGER FOR TROLLEY TROUGHS

A special hanger designed to eliminate the constant flashing which is seen at viaducts or wherever there is rigid overhead construction is shown in Fig. 2. The

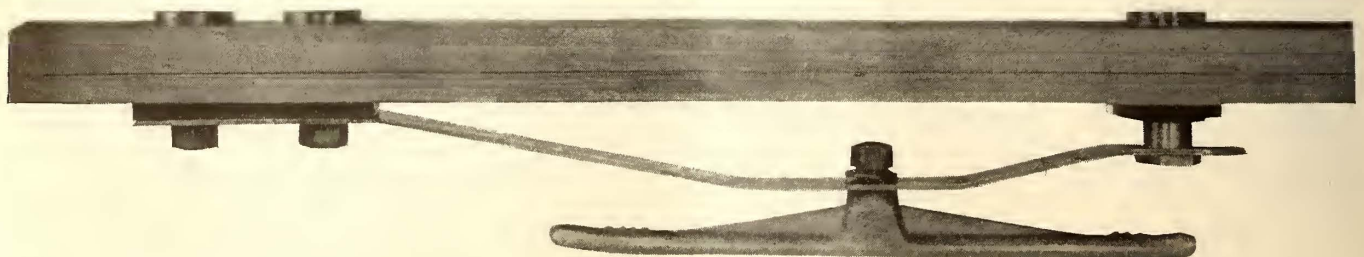


FIG. 2—TROLLEY TROUGH HANGER MOUNTED ON SPRING TO OBTAIN FLEXIBILITY AND ELIMINATE FLASHING

hanger consists of an ordinary ear attached to a long steel spring which is fastened rigidly at one end by means of two insulated bolts through the trolley trough, and supported at the opposite end by a single bolt on which it is free to slide. As the trolley wheel approaches this ear the spring provides some flexibility and prevents the recoil of the trolley wheel which results when the wheel strikes a perfectly rigid support. Some freedom of action vertically is also given by the 1/2-in. space provided between the bolt head and the fiber washer next to the trough.

##### SCREW EAR DESIGNED FOR PERFECT ALIGNMENT

An ear which will permit of an extra one-quarter or one-half turn in order to make it come into perfect alignment with the trolley wire is shown in Fig. 3. In the ordinary threaded ear, it is necessary to either use spring washers or frequently to leave the ear slightly loose in its threaded connection with the hanger in order that it may be straight with the wire. In this new ear the extra quarter or half turn is gained by the construction at the top of the shank. Two schemes are used for

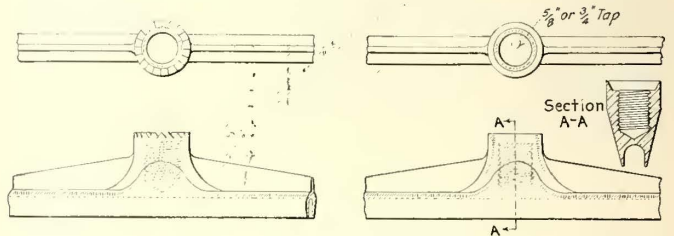


FIG. 3—TWO TYPES OF TROLLEY EARS DESIGNED TO GIVE PROPER ALIGNMENT WITH THE TROLLEY WIRE

accomplishing this purpose. In one case the inside of the shank is beveled off above the thread to give a very thin sharp edge at the top. In the other case a series of sharp teeth are cut in the face of the shank. In either case the uppermost edges which come in contact with the hanger first will turn over slightly as the ear is screwed tight, thus allowing the ear to be tightened into perfect alignment with the wire.

##### GLASS-INSERT SECTION INSULATOR

The substitution of a glass insert for the usual fiber section is the principal feature of a new design section insulator shown in Fig. 4. The method of fastening this glass section to the hickory block by means of clips bolted to the block is clearly shown in the drawing. The glass is cast with special holes for fastening purposes. The approaches on this section insulator are made of brass castings, which are also bolted to the hickory block insulating section. The purpose of the glass insert, which is renewable separately from the remainder of the insulator, is to prolong the life of the sectionalizing insulator. The fiber block which is ordi-



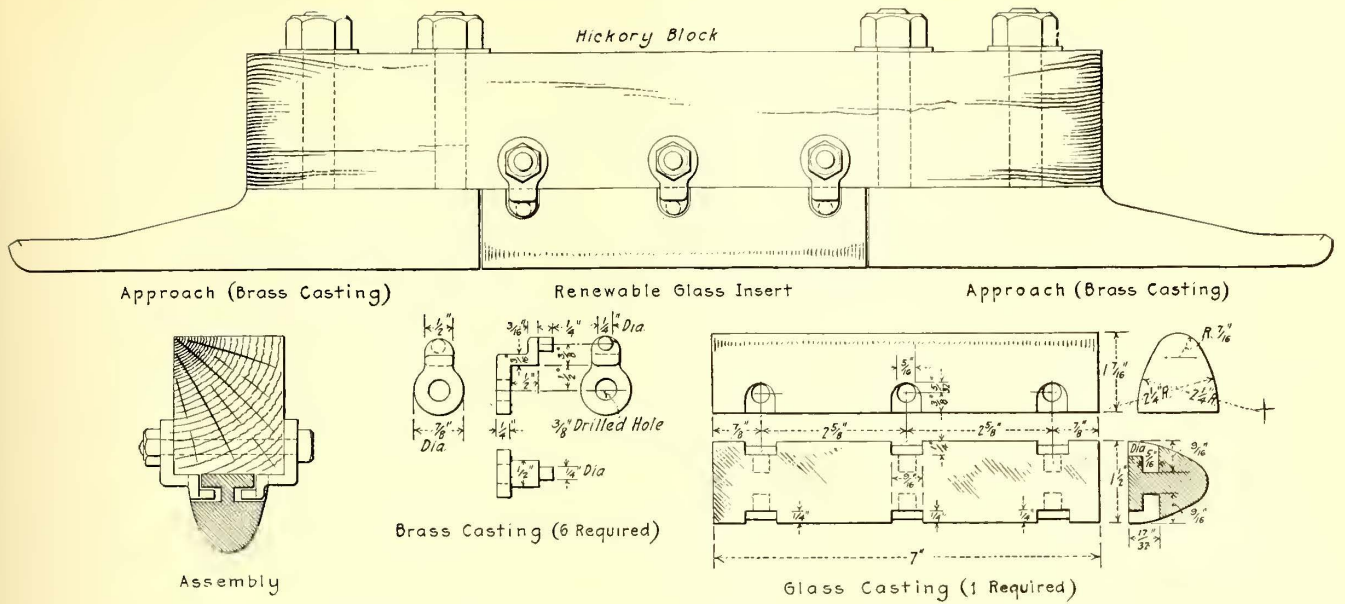


FIG. 4—SECTION INSULATOR WITH GLASS INSERT MOUNTED BETWEEN BRASS APPROACHES

narily used for this purpose is rapidly burned away by the arc which is pulled from the brass casting as the trolley wheel leaves it with the controller in the "on" position. The life of the glass insert is much longer since it does not burn away. Little trouble has been experienced with breakage of the glass.

A number of the special fittings described above have been manufactured for Mr. Scott by the Drew Electric & Manufacturing Company, Indianapolis, Ind.

CONCRETE PAINT FOR PROTECTING SPAN WIRE

Mr. Scott has been experimenting with the use of concrete paint on span wire to prevent rusting. This concrete paint is a thin mixture of very rich concrete and is applied with a brush so that it fills up the space be-

tween the strands of the span wire. Span wire which was thus protected more than a year ago and has received no attention since shows no signs whatever of corrosion, nor has the concrete paint fallen off the wire as the result of the vibration.

LINE TRUCKS

The type of line trucks used by the Cleveland Railway is shown in Fig. 5. These trucks are manufactured by the Detroit-Wyandotte Motor Car Company of Wyandotte, Mich., and they are so equipped that two men can handle practically any overhead job which may arise. At night frequently the entire work, including driving of the truck and repair of overhead, is done by one man. The tower platform may be swung around to extend in the opposite direction from that shown. The end of a new section of wire can be taken from the reel in the back end and clamped to the trolley wire, and the truck can be run along the track and a new section of trolley wire strung with a very short delay to traffic. The two reels in the truck are of capacity sufficient to carry 1600 ft. of span wire and an equal amount of No. 00 trolley wire. Their location at the rear of the truck facilitates their use. A brake provided on each makes it possible to use them for holding the wire taut while fastening it.

FEEDER CABLE DIVIDED AT STREET CROSSING

A simple means of dividing the load into two parts where it was necessary to carry a 1,000,000-circ. mil. cable across the street was accomplished as follows: At the next to the last pole on the first side of the street the 1,000,000-circ. mil. cable was connected to two 500,000-circ. mil. cables. One of these was spanned across the street at this point and the other was carried on the next pole and then across the street. At this point the two were joined in the 1,000,000-circ. mil. cable again. This construction made it possible to use the ordinary concrete poles at the corner without any additional reinforcing, while if the 1,000,000-circ. mil. cable had been carried across at one point it would have been necessary to put in some very heavy construction, as there was no space in which to guy the corner pole.

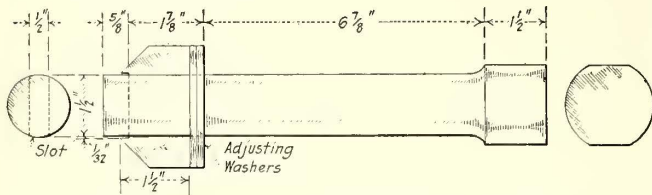


FIG. 5—TYPICAL LINE TRUCK OF CLEVELAND RAILWAY



## Pin Substituted for Equalizer Spring Bolt

The Elmira Water, Light & Railroad Company has in service some Brill 27-GE-1 trucks on which trouble was experienced because of the rapid rusting of the nut on the equalizer spring bolt. The thread of the bolt became badly worn too so that adjustment was impossible.



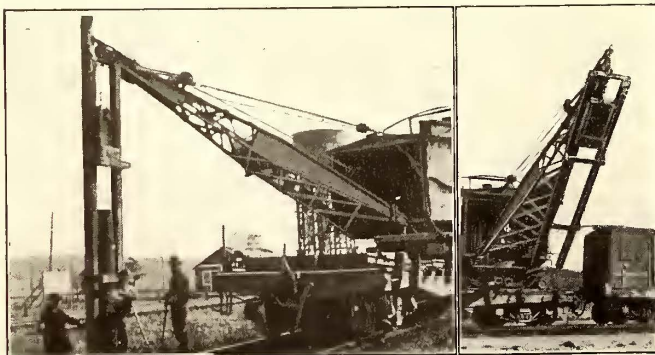
PIN AND WEDGE USED IN PLACE OF EQUALIZER SPRING BOLT

To remedy this the pin and wedge shown in the illustration were substituted for the bolt and nut. Adjustment is now made by means of shims or washers between the wedge and the bolster spring seat rocker.

## Ditcher Used as a Pile Driver by Western Railway

A ditcher has been used successfully by the Spokane & Inland Empire Railroad to drive stub poles and piles. The pile-driving attachment, which was made in the company's shops at a total cost of \$34.09, consisted of 8-in. x 8-in. x 18-ft. leads, braced with two 1/2-in. x 6-in. wrought-iron bands and connected across the top with a 1-in. x 6-in. iron strap. This was suspended from the end of the ditcher boom by an eyebolt, which was attached to two pieces of 1/2-in. angle iron bolted on either side of the end of the boom. The line for the hammer, which weighed 2145 lb., ran over a sheave, which was also supported by the two angles. When en route the lower end of the leads was pulled in by a cable, so that the pile-driving attachment lay on the under side and nearly parallel with the boom, the hammer being held in place at the upper end. Views of the apparatus in the operating and traveling positions are shown below.

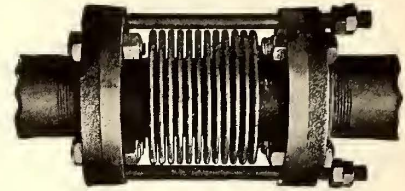
With this arrangement it is possible to drive piles or stub poles on either side of a double-track line without having to transfer the ditcher from one track to the other. Stubs can be placed on either side, in front of, or behind a pole, and this at less than 25 per cent of the former cost. The ditcher used was made by the American Hoist & Derrick Company of St. Paul, Minn.



DRIVING A PILE WITH A DITCHER—PILE DRIVER IN POSITION SO THAT THE DITCHER CAN BE MOVED

## One-Piece Expansion Joint

Taking up pipe expansion by means of loops and U-bends requires considerable extra space as well as extensive construction, while stuffing boxes and long sweep joints require frequent attention and repacking to avoid leaking. These difficulties are avoided in the use of the one-piece expansion joint illustrated here-



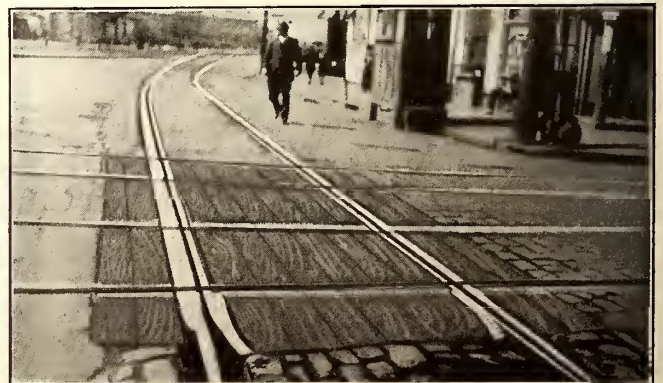
EXPANSION JOINT OF NEW DESIGN

with, which is the product of the R. D. Nuttall Company, Pittsburgh, Pa.

The corrugations are machined from the solid blank instead of being molded or bent into shape, and while the thin steel walls require careful machining, the result is a strong non-leaking joint, which is readily responsive to small amounts of expansion or contraction in the pipe line. The action in the joint is the same as that of an accordion or bellows. This joint requires but a small amount of additional space for installation, and as the expansion in the pipe is taken up by the corrugations, there are no stuffing boxes to be taken care of.

## Paving Track Intersection with Old Ties

The New Orleans Railway & Light Company, of which M. V. Houliard is superintendent of tracks, has had excellent results from the use of old creosoted ties for paving some steam-road track intersections. The accompanying view shows the appearance of the street surface at a double-track intersection with a steam railway single-track line. The paving at this intersection had been installed for about a year. This paving consists of sound old ties adzed to fit the back of the rails and closely fitted into the steel work. This form of paving for intersections has the advantages of low first cost, smooth surface, comparatively long life, and the tight blocking of the 6-in. wooden floor serves to maintain the position of the parts of the special work.



OLD CREOSOTED TIES USED FOR PAVING AT A STEAM-ROAD AND ELECTRIC RAILWAY INTERSECTION IN NEW ORLEANS



# News of Electric Railways

Traffic and Transportation

Financial and Corporate

Personal Mention

Construction News

## Strikes in Tacoma and Seattle

### Men in Tacoma Go Out, Followed by Seattle Men, Who Were Engaged in Arbitrating Their Differences

Three hundred members of the union organized recently among the trainmen of the Tacoma Railway & Power Company, Tacoma, Wash., went on strike on July 16 when L. H. Bean, manager of the company, refused to recognize the union. At midnight on July 16 about 1800 employees of the Puget Sound Traction, Light & Power Company, Seattle, went on a sympathetic strike, following the refusal of A. W. Leonard, president of the Seattle company, to intervene in the Tacoma situation and the refusal of L. H. Bean, manager of the Tacoma company, to reinstate seven employees alleged to have been dismissed because of their activities in organizing the local men at Tacoma.

The transportation systems in both cities were paralyzed on July 17. Every available vehicle was brought into use. Peaceful pickets were stationed by the employees at all points of advantage. The police were detailed for the protection of the company properties. There was no violence up to the night of July 17. Interurban trains between Seattle, Tacoma, Everett and way points were run as usual. The municipal line of the city of Tacoma serving tide flats industries, operated by the Tacoma company under lease, and the car line to the army cantonment at American Lake were both completely tied up. The business men and the civic bodies of the city brought pressure to bear at once on the officials of the companies to have them accede to the requests of employees. The settlement of the strike in both cities hinges largely on recognition of the union. The Seattle strike affects, in addition to the platform men, the members of eleven affiliated unions including electricians, blacksmiths, engineers, carpenters, painters and linemen.

#### COURT DIRECTS SERVICE BE RESUMED

No cars were operated in Seattle up to July 20. An alternative writ directing the Puget Sound Traction, Light & Power Company to resume service in Seattle was signed on July 19 by Judge Boyd J. Talman of the King County Superior Court. This writ was made returnable on July 23. The petition was presented to Judge Talman by Corporation Counsel Hugh M. Caldwell of the city. It asked that in the event the company failed to operate cars the men be punished for contempt of court and a receiver be appointed to take charge of and operate the lines subject to the order of the court, until the company established that it could operate its lines.

The company gave the employees until July 20 to apply for reinstatement without loss of rank. President Leonard of the company stated that service would be resumed in Seattle at once if adequate protection was guaranteed by the city. Mayor Gill promised protection by threatening the arrest of any strike breakers brought in by the company. Company officials stated that fifty former employees had applied for reinstatement. This was denied by the officers of the unions.

Meanwhile the question of transportation has become intensely acute. As an emergency measure the court has accordingly granted temporary permission for the operation of jitneys. Motor trucks and private cars were also pressed into service to handle any surplus of passengers beyond the ability of the jitneys to care for.

It was asserted on July 19 that the employees of the Stone & Webster properties in Bellingham and Everett had asked the Seattle union to assist in organizing the men in those cities. It was considered likely at that time that the strike would be extended to those cities.

Ten cars were being operated under guard in Tacoma on July 20. No violence was reported from that city.

Until the strike of the Tacoma employees, the outlook in Seattle was that the differences between the Seattle company and the employees would be settled by arbitration. Two members of the arbitration board had been appointed. Later the men declared in favor of settling as many questions as possible by conciliation, and on this account the third arbitrator had not yet been chosen.

#### SEATTLE ARBITRATION

Negotiations started long before the strike of July 16 for a settlement of the differences previously existing between the Puget Sound Traction, Light & Power Company, Seattle, and its employees were well under way on July 13 when the material intended for use in this issue of the ELECTRIC RAILWAY JOURNAL was dispatched by mail from Seattle by the resident correspondent of the paper in that city. At a recent meeting between the committee representing the trainmen and President Leonard of the company revised requests were presented by the employees. The statement was made that the demands of the trainmen had not been changed, but that the situation had been altered by all the other organized crafts working for the company making an effort to effect a blanket agreement with the company providing for increased wages and an eight-hour day and closed shop conditions which implied recognition of the Amalgamated Association. The members of the committees were endeavoring to agree on as many points as possible so as to reduce the work of the arbitration board, as stated in the account of the strike in Seattle, and so overcome, if possible, the need for calling in the third arbitrator.

#### PRESIDENT LEONARD ON SEATTLE SITUATION

A. W. Leonard, president of the company, in speaking of the situation on July 13 was reported to have said:

"We depend on arbitration. The conferences and conciliation meetings by the company's officers with representatives of the employees can only pave the way for the final arbitration to which we have agreed of the formal demands made by the trainmen and filed on June 23. Those demands were made specific. Arbitration of wages and working conditions was agreed to, and two members of the board of arbitration have been named, James A. Duncan by the employees, and C. J. Franklin by the company. On July 3 an additional list of demands from employees of many other departments was presented. The company has recognized the changed living conditions by announcing three voluntary wage advances to trainmen in a period of three months, and a 40 per cent reduction in the term of service required to reach the maximum wage, meaning an increase of 14 per cent to trainmen at an annual cost of \$140,000 to the company. All of these concessions were made prior to the presentation of any formal demand upon the part of the employees. They were made in the interest of the public, of better service to the public, by making employment more desirable, that the company might be assured an adequate and dependable supply of efficient labor with which to maintain that high standard of service which has always been our aim and purpose."

#### WAGES PAID IN TACOMA

The new wage scale which went into effect in Tacoma on July 1 was reviewed in the ELECTRIC RAILWAY JOURNAL of July 7, page 32. The second increase was granted on June 1. Subsequently the company announced a still further increase in wages effective on July 15 to the following scale: First six months, 27 cents; second six months, 28 cents; second year, 29 cents; third year, 30 cents; fourth year, 31 cents; fifth year, 32 cents; sixth year and thereafter, 34 cents.



## St. Louis Ordinance Put Over

### Further Conferences with Company Decided Upon by City Officials Before Measure Goes to Aldermen

The plan miscarried which had been proposed for the introduction into the Board of Aldermen of St. Louis, Mo., on July 13 of the ordinance for the settlement by compromise of the questions at issue between the city and the United Railways under the general terms outlined in the *ELECTRIC RAILWAY JOURNAL* of July 14, page 71. Postponement of the introduction of the measure was brought about by Mayor Kiel. He is said now to believe that serious objection will be raised to the provisions of the new grant to the company under which the city becomes a partner of the company in so far as the measure does not guarantee the payment of the amount of the mill and the occupational taxes. Meanwhile the Board of Aldermen has voted to adjourn from July 27 to September. So far as formal consideration of the franchise matter by the elected representatives of the city is concerned this would seem to put the matter over until the fall.

Louis P. Aloe, president of the Board of Aldermen and ex officio member of the Board of Estimate and Apportionment, called attention, at a meeting of that body on July 13, to the fact that the city is not guaranteed a specific revenue under the draft agreed upon by the city and the railway. Mr. Aloe declared that this omission was fatal to the success of the bill, and Mayor Kiel and Mr. Nolte thereupon started an inquiry into the situation. City Counselor Danes and C. E. Smith, engineer for the city, were summoned. The Mayor decided to take the matter up with the officials of the company and announced that he would call another meeting of the conference for the night of July 16. When it was found advisable to hold up the bill to take up the question of insertion of a clause guaranteeing the payment of \$485,000 to the city annually, the printing of the bill was suspended. The officials had expected to distribute copies of the bill, but it was decided to give out no draft of the measure until it is finally perfected.

#### ALTERNATIVE PROPOSAL SUGGESTED

The joint conference in the office of the Mayor on the evening of July 16 between the officials of the city and the representatives of the company resulted in throwing the whole street railway franchise situation wide open again. An alternative ordinance is now proposed providing an entirely new plan of settlement of the franchise and mill tax problems and eliminating the city as a partner of the company. In brief, the proposal now is to validate the company's existing franchise to 1948, require the company to pay to the city 3 per cent of its gross receipts annually, permit the company to pay the accrued mill tax of \$2,300,000 in ten annual payments and require the company to make many extensions and betterments. It was announced that an effort would be made to have the Aldermen consider both the new ordinance and the city partnership plan on July 20. The public will be permitted to express its choice and suggest amendments or changes. It is stated unofficially that the plan advanced on July 16 would not make necessary a financial readjustment of the company, as the city would not under the terms of the grant be interested as a partner in the financial or operating problem of the company. It is said that under the non-partnership plan the revenue to the city from the company would be decreased about \$100,000 a year at present, but that later it would be in excess of the present payments. It is understood that at the meeting on July 16 the company refused to guarantee that under the city partnership plan the city's share of the profits would be at least \$485,000 a year.

The Civic League of St. Louis is opposed to the proposed settlement with the company as is also organized labor. A committee representing the Civic League has declared that the proposed arrangement would be detrimental to the municipality and the company. The chairman of the committee which announced its dissent is Charles W. Bates, former city counselor. There are also on this committee Joseph L. Hornsby, former chairman of the Public Service Commission of St. Louis, which made an appraisal of the property of the company in 1912, and William F. Woerner, author of

the mill tax ordinance and former member of the Public Service Commission of Missouri. They cite nine counts in their opposition to the measure. Attorney-General Frank W. McAllister has announced that he had been asked, as a state official, to investigate the ordinance by which the city will become a partner of the company.

#### PRESIDENT MORTIMER REVIEWS SITUATION

James D. Mortimer, president of the North American Company, issued the following statement concerning the United Railways:

"The settlement of the mill tax and franchise difficulties was first undertaken by the United Railways in 1911. An ordinance providing for a lump sum settlement of accrued mill tax, a reduction in the future tax and a confirmation of the franchise rights until 1948 was recommended by a special committee of the St. Louis Municipal Assembly in 1911, but failed of passage before the main body. Since that time the St. Louis public has gradually come to believe that the mill tax and franchise matters should be settled, and at the last municipal election the successful candidates for office openly avowed their intention of promptly settling all disputes between the city and the company.

"The city officials have taken the lead in the negotiations now in progress and have drafted a form of franchise ordinance somewhat similar to the so-called Kansas City plan. It provides for a new fifty-year franchise, a joint board of control, and a division of the surplus earnings in excess of agreed percentages on the initial utility capital, and on all future accretions. If an ordinance can be agreed to and is passed by the Board of Aldermen, the company proposes to offer this to all the security holders and ascertain if the necessary adjustments in the financial structure of the company can be made to comply with the terms of the ordinance. The initial utility capital will probably be fixed at \$60,000,000 or \$65,000,000 and the face amount of all outstanding securities will probably have to be reduced to a figure approaching a sum as finally agreed upon.

"There are now outstanding on the property \$11,350,000 face amount of underlying bonds, \$9,800,000 of St. Louis Transit 5's due in 1924, \$30,350,000 of general mortgage 4's due 1934, and \$4,500,000 of Suburban Railway general 5's due 1923, making a total in round figures of \$56,000,000 face amount. There are outstanding in the hands of the public \$16,379,900 par value of 5 per cent cumulative preferred stock and \$24,913,800 par value of common stock, a total of \$41,293,700. The total capitalization is accordingly about \$97,000,000. If the finances of the company are adjusted so that the face amount of outstanding securities approximates the \$60,000,000 or \$65,000,000 of initial utility capital proposed by the city in the present franchise negotiations, there will have to be a reduction of \$32,000,000 to \$35,000,000 in the face amount of securities at present outstanding.

"The St. Louis Transit Company 5's, the United Railways general mortgage 4's, and the Suburban Railway 5's, are selling at substantial discounts under par. All these mortgages are closed except in so far as they may be used for the retirement of underlying issues and afford no means for financing capital requirements. All such money during the last ten years has been provided from the earnings of the company.

"Should the franchise negotiations now in progress result in arrangements with the city which the company can properly recommend to its security holders, there will have to be adjustments in the amount of junior bond issues outstanding and in the amounts of preferred and common stock. That it will be suggested to the holders of general mortgage 4's that the face amount of their securities be reduced has been sensed for some time past and has been responsible for the formation of the committee, announcement of which was made on July 9. It is reported that committees to represent the other junior bond issues have either been formed or are in process of formation.

"The preferred shareholders have a committee, but it has not yet asked for the deposit of stock. The North American Company is interested only in the common stock, of which it owns about 72 per cent; it will ask other holders of common stock to join with it in any plans for reorganization which may be promulgated."



## Massachusetts Investigation Opened Special Commission Which Is to Report to the Legis- lature of 1918 Begins Its Work

The street railway investigation commission created by Chap. 129, Massachusetts Resolves, 1917, held its first public hearing on July 10 at Boston. Senator J. W. Martin, Jr., presided. The commission is required to study the general problems of street railway administration and financing and report to the 1918 Legislature in January with special reference to improving the economic condition and usefulness of the companies now in operation in the State. Among counsel who registered were Bentley W. Warren, for the Massachusetts Street Railway Association and the New England Street Railway Club; James F. Jackson, for the Bay State Street Railway, and Robert H. Holt for the Boston Elevated Railway.

### COUNSEL FOR COMPANY STATES CASE

A preliminary statement by Mr. Warren emphasized the freedom of the Massachusetts lines from over-capitalization and the desire of the companies to furnish the fullest possible information to the commission. He pointed out that the present financial condition of the roads was almost a matter of common knowledge. As an instance of the need of improved credit conditions the speaker said that the West End Street Railway (the Boston surface lines) for many years regarded as a most conservative trustees' investment has recently been forced to issue bonds at 6 per cent interest. The Springfield Street Railway, for many years considered one of the strongest companies in the State, was now before the Public Service Commission seeking the right to issue 6 per cent bonds. Its last issue of bonds was fifteen years ago, and a 4 per cent return then easily attracted a market. Boston Elevated Railway stock, representing a paid-in investment of \$110 per share, was selling for \$60, and the company was near the end of its financial resources. These conditions meant a complete cessation of development and also a steady deterioration of plant. Higher charges for the service were absolutely necessary. The investing public was shunning street railways because it felt that the State was not interested in seeing that these public utilities were enabled to earn a proper return.

Mr. Jackson advised the commission that the Bay State company was opposed to the present system of street railway taxation in Massachusetts with reference to the excise and commutation taxes. Evidence bearing upon electric railway freight and express development and possibilities will also be presented later. Mr. Jackson, who was formerly chairman of the Massachusetts Railroad Commission, declared that in general the securities of the Massachusetts railways stood as properly representative of the actual investment.

In a communication to the commission suggesting various lines of inquiry into street railway management and administrative methods, former Senator R. M. Washburn intimated that the commission might find itself, after the investigation, to be the first Massachusetts tribunal unanimously to advocate as perhaps the proper remedy for present conditions a 6, 7 or 8-cent fare. This meant courage and perhaps political suicide. The hearing was adjourned to July 24 at Boston.

## Strike in Lima

Electric railway traffic at Lima, Ohio, has been at a standstill since July 11, when fifty motormen and conductors on the local line of the Ohio Electric Railway went out on strike. The men demanded the abolishment of split runs and a reduction of the workday to nine hours, together with an increase in wages from 24 to 28 cents and from 25 to 30 cents an hour. H. G. Gilpin, general manager, agreed to increase the maximum wages, but said he could make no change in the minimum figure. He also stated that improvements would be made in working conditions. The men refused to accept his offer.

The company attempted to operate cars on July 16. The strikers attacked the cars. The attempt to resume service was finally given up and the cars were run back to the carhouse.

## Four Extensions to Be Built in Cincinnati

At a special meeting on July 13 the Council of Cincinnati, Ohio, ordered extensions to four of the Cincinnati Traction Company's lines. Their construction will mean the expenditure of upward of \$250,000 before the end of the year.

Walter A. Draper, vice-president of the Cincinnati Traction Company, objected to the extension of the North Norwood line at this time, because of the excessive cost involved, but was unable to convince Council on this point. He said the extension would necessitate the construction of a new substation at a cost of \$37,000 and the purchase of power from the Union Gas & Electric Company, or the location of a complete substation equipment and the construction of a new transmission line from the Pendleton power station to Blair Avenue at an estimated cost of \$101,000. He declared that to the cost of either project must be added \$15,000 for additional cars and an annual operating expense of \$37,960.

At a meeting of the Federated Improvement Association on July 12, P. A. Pursell, president of the California Improvement Association, made an attack on the Cincinnati Traction Company because of the terms made to interurban lines for the use of its tracks and power. He declared the company received 3 cents out of each 5-cent fare collected by the interurban lines and thus kept them out of the city. He said further that residents of California, which is now part of the city, are compelled to pay a 10-cent fare between that place and the business section of the city.

## Railway a Political Issue

### Cleveland Mayoralty Candidates Seek to Ride Into Public Favor on the Back of the Cleveland Railway

Mayor Harry L. Davis of Cleveland, Ohio, who is a candidate for re-election on the Republican ticket, insists that everything possible should be done to retain the 3-cent fare, although the increased cost of materials and labor renders it more and more difficult to do so. He says that the company should exert every effort to overcome its present difficulties until the new substation in Cedar Avenue is completed. In his opinion the placing of this plant in operation will tend to keep the expenses down, as the new contract with the Cleveland Electric Illuminating Company for power will then become effective.

Edmund B. Haserodt, Democratic anti-organization candidate, charges that the Davis administration has pushed the street railway question into politics again by exerting every effort to maintain the 3-cent fare. He thinks that with municipal ownership an increase in the rate of fare could be avoided.

### THREE-CENT FARE PROBABLY MUST GO

William A. Stinchcomb, Democratic organization candidate, thinks that it is impossible to preserve the 3-cent rate much longer. He says that the Tayler grant does not provide for 3-cent fare alone, but specifically states that the people shall be entitled to transportation at cost plus 6 per cent for dividends on the company's stock. Mr. Stinchcomb said that under Tom L. Johnson the 3-cent fare became a slogan, but workmen were then receiving \$1.75 a day, whereas their wages are now \$3 a day.

Hugh F. Taylor, president of the Union Wire & Iron Works, and an independent candidate for Mayor, says the 3-cent fare should be preserved. He is having a booklet prepared, reviewing the street railway situation.

John J. Stanley, president of the Cleveland Railway, told the newspaper men that the prospect of continuing the 3-cent rate would be better, if the daily load carried by the road could be more evenly distributed through the twenty-four hours of the day. If the present rate of fare is to continue, the earnings per car mile must be increased, or the cost of operation per mile must be reduced. Cost of operation can be kept down only by not improving the service as traffic increases, or by a better distribution of the load.



## Strike on Syracuse Suburban Lines

Strikes of the employees of the Syracuse, Lake Shore & Northern Railway and the Syracuse & Northern Electric Railway, Inc., Syracuse, N. Y., were called on July 4. The matter of wages had previously been the subject of conferences between the managers of the roads and the representatives of the employees, and in spite of the fact that progress was being made toward a new working contract the union men on July 3 demanded an immediate raise in pay from 32 cents to 35 cents an hour under threat of calling out the men on the holiday. The company offered to arbitrate, but this proposal was rejected and the men quit work.

On July 6 there was a conference in Syracuse between T. C. Cherry and William J. Harvie, general managers of the railways, and members of the State Board of Mediation at which the managers placed before the board the formal statement made previously by them to the public. This statement said that the men were receiving the prevailing wage scale in the vicinity; that their wages had been raised twice within a year and five times within seven years. The financial status of the companies was also gone into and reference made to the appeal of the companies to the Public Service Commission for increases in fares.

At a meeting of the employees on July 9 it was decided to accept the proposal of the companies to arbitrate, which policy the railroads urged from the first. A board of two arbitrators was agreed upon. Service was resumed on July 11.

Carlton A. Chase was chosen to the board of arbitration to represent the railways and Erasmus A. Pellenz was selected to represent the men. They went into conference at once to see if the matter could not be settled by conciliation without the need of choosing an umpire. In this they succeeded, for on July 14 they handed down a decision awarding the men an advance of 1½ cents an hour. This means an increase from 32 to 33½ cents an hour. The original demand of the men was for 7 cents more an hour. The new wages will be written into the contracts to be executed in the near future. The advance in wages is retroactive to May 1.

## Improving Seattle's Municipal Railway

### Four Bills Passed by the City Council Looking Toward Important Changes in the Present System

The development of Seattle's municipal street railway system was provided for by the City Council recently by the passage of four bills, one authorizing the construction of an extension to Division "A" into Ballard; one providing for the connection of Divisions "A" and "C", by an elevated line across the south end of the city; one for the changing of the trolley system on Division "A" from a double to single wire, and the fourth appropriating funds from the city lighting department depreciation fund, as a temporary loan to the municipal street railway bond fund. On each of these four bills the Council received a minority report made by Councilmen R. H. Thomson and Will H. Hanna. The minority held that it would not indorse the railway extension until figures could be produced showing whether the proposed projects would pay. The final vote on the bills was seven to two, Messrs. Thomson and Hanna voting against the measures. The bill for the extension of the municipal railway into Ballard calls for the construction of a new line, beginning at the north end of the Lake Washington Canal bridge, and extending along Fifteenth Avenue N. W., and Leary Avenue. The bill provides an appropriation of \$25,000 for this work. The sum of \$5,000 is appropriated for the changing of the trolley system on Division "A."

The measure for the elevated line provides for the construction of a viaduct, with the necessary grades and approaches on Washington Street, Whatcom Avenue, Railroad Avenue and West Spokane Street. According to estimates of Councilman Oliver T. Erickson, father of the project, the construction alone, minus cost of condemnation proceedings, will approximate the expenditure of \$330,000. Councilman Erickson introduced in Council an ordinance appropriating \$25,000 from the city lighting department depreciation fund to the

municipal street railway bond fund as a temporary loan. In the words of the ordinance, which was referred to the finance and city utilities committees, "there are insufficient money in the municipal street railway bond fund to carry on work heretofore authorized, and to be authorized in the improvement of the city street railway system, and in the purchase and installation of equipment necessary for the proper and economical operation of such system."

The Council has passed an ordinance appropriating \$25,000 for the purchase of eight one-man cars.

A. H. Dimock, city engineer, submitted to the Council a communication estimating the cost of constructing the proposed elevated line at \$330,068, provided the construction is of wood. Mr. Dimock estimated the cost of extending Division "A" into Ballard at \$27,320, with a number of provisos.

## Toronto Strike Settled

### Men Out Two Days and a Half—Temporary Increase of Six Cents Pending Arbitration

The strike of the employees of the Toronto (Ont.) Railway, which commenced at midnight on July 10, was settled on the night of July 12. Service was resumed at noon on July 13. The men, who had been receiving 26, 28 and 30 cents for first, second and third year's service respectively, asked the company last April for an increase of 10 cents all around and a closed shop. The men based their demands on the increase in the cost of living since the war began. The committee of the employees commenced negotiations with the company last April in anticipation of completing an arrangement before the agreement between the men and the company expired on June 16. The company voluntarily increased the men's wages last winter 2½ cents all around. It took under consideration the latest request of the men, and a number of conferences were held with the committee of the employees. Finally an offer was made by the company of an increase of 2 cents all around. This offer was considered by the men at a mass meeting on July 7, and was declined. By an almost unanimous vote the union then presented an ultimatum to the company in which it announced that if the company did not grant the request for an increase of 10 cents as demanded the men would go on strike on July 10. The company refused to better its concession beyond 2 cents all around, but offered to leave the wage and all other questions to a board of arbitration. This proposal was rejected by the men in mass meeting on July 10, and the strike commenced at midnight.

The Ontario government brought about a conference between the officials of the company and the men's union, and, as a result, the company made an offer of a temporary increase of 6 cents an hour all around, pending the submission of all matters in dispute to a board of conciliation under the Lemieux act. This offer was accepted on July 12 by the men, and service was resumed at noon on July 13.

In accordance with the settlement arrived at, the employees' committee selected as their representative on the board of conciliation, D. A. Carey, president of the Labor Temple Company and a well-known labor man throughout Canada. The directors of the railway, at a meeting on July 16, appointed Duncan McDonald, formerly manager of the Montreal Tramways, to represent the company. These two will follow the usual practice and select a third member. In case of their failure to agree upon a suitable person, the Minister of Labor has the power under the act to appoint the third member of the tribunal.

The following table shows how the new temporary wages compare with the old scales:

|                                 | 1912,<br>Old<br>Agreement,<br>Cents | Rate as<br>Advanced<br>January,<br>1917,<br>Cents | Men's Pending<br>Arbitration,<br>Cents | Wages<br>Pending<br>Arbitration,<br>Cents |
|---------------------------------|-------------------------------------|---|--|---|
| Motormen and conductors:        |                                     |   |  |   |
| First six months . . . . .      | 23½                                 | 26  | 36                                     | 32  |
| Second six months . . . . .     | 25½                                 | 28  | 38                                     | 34  |
| Second year and after . . . . . | 27½                                 | 30  | 40                                     | 36  |
| Motor and truck repair men:     |                                     |   |  |   |
| First six months . . . . .      | 23½                                 | 26  | 36                                     | 32  |
| Second six months . . . . .     | 25½                                 | 28  | 38                                     | 34  |
| Second year and after . . . . . | 27½                                 | 30  | 40                                     | 36  |
| Shedmen . . . . .               | 23½                                 | 26  | 36                                     | 32  |
| Foremen . . . . .               | 27½                                 | 30  | 40                                     | 36  |
| Assistants . . . . .            | 22½                                 | 25  | 35                                     | 31  |



## Cleveland Terminal Defeated

The subway and underground terminal ordinance of Mayor Davis of Cleveland, Ohio, was defeated by the City Council on the evening of July 16 by a vote of fifteen to ten. The street railway committee reported adversely on the ordinance. An analysis of its reasons brought out two points. One was that the ordinance would place the whole matter in the hands of an independent committee and the other that it would remove the work from political consideration.

The vote was strictly on party lines, although one Democrat, Councilman Damm, voted with the Republicans for the ordinance. He said he felt that he had no right to deny his constituents the right to an expression on the subway proposition.

Councilman Gahn announced that initiative petitions would be circulated at once and that the question would be placed before the voters at the November election, whether or not the majority of Councilmen thought well of it. The Mayor told the Council that this movement would have his support.

The ordinance called for the construction of a subway from the terminus of the underground bridge approach on Superior Avenue to the Public Square, an underground terminal station for all lines at the Public Square, a bond issue of \$3,500,000 to pay for the construction and a street railway commission to supervise the work. The plan is similar to the one now in operation in Cincinnati. The whole issue would have been submitted to the voters at the fall election.

## Preparing for Operation of New Dallas Franchises

With the understanding that the new franchises will soon become effective in Dallas, Tex., under which the electric railways are to be consolidated and operated under a service-at-cost franchise with city supervision, preparations are being made for the change. The franchise as adopted by the city provides for a supervisor of public utilities appointed by the Mayor. A. C. Scott, C. H. Chamberlain, Sloan Simpson and James M. Terrell have applied to the Mayor for the appointment.

## New Interurban Line for Ohio

### Electric Line Between Youngstown and Niles to Be Constructed at Once

Construction of a new interurban electric railway between Youngstown and Niles will be begun immediately by the Youngstown & Niles Railway. The contract for building the line, which will be 7½ miles in length, has been let to the Republic Railway & Light Company, Engineering Department, and this company has given sub-contracts to J. W. Garland, Inc., for the grading, and to the S. R. Smyth Company, Inc., Pittsburgh, Pa. for the bridge and culvert work.

The line will be built on private right-of-way throughout and will traverse the center of the new town of McDonald, which is being built by the Carnegie Steel Company. The private way is of double-track width throughout, but the line will be single track at first with the one-track laid in double-track position so that the road may be double-tracked in part or throughout as the traffic demands.

The road will connect both in Youngstown and in Niles with the lines of the Mahoning & Shenango Railway & Light Company, which will operate the new line, supplying both equipment and power. Power will be fed in at both the Youngstown and Niles ends of the lines. Eighty-pound A. S. C. E. T-rail will be laid on oak ties with slag ballast. The overhead work will be of the bracket type carried on cedar poles and 4/0 trolley wire will be used. Track circuit block signals will be installed, each block being approximately 1 mile long.

The operating officials of the Mahoning & Shenango Railway & Light Company, which will operate the new line, are R. P. Stevens, president; R. T. Sullivan, general manager, and R. N. Graham, manager of railways.

## Increase in Wages in San Francisco

The United Railroads, San Francisco, Cal., recently announced an increase in the wages of its platform men beginning July 1. The motormen and conductors are to have an increase of 1 and 2 cents an hour as follows:

| Duration of Service | Present Pay Per Hour | Future Pay Per Hour |
|---------------------|----------------------|---------------------|
| First six months    | .27 cents            | 29 cents            |
| Second six months   | .28 cents            | 30 cents            |
| Second year         | .29 cents            | 30 cents            |
| Third year          | .30 cents            | 31 cents            |
| Fourth year         | .31 cents            | 32 cents            |
| Fifth year          | .32 cents            | 33 cents            |
| Sixth year          | .33 cents            | 34 cents            |
| Seventh year        | .34 cents            | 35 cents            |
| Eighth year         | .35 cents            | 36 cents            |
| Ninth year and over | .36 cents            | 37 cents            |

Schenectady Labor Matters Settled.—It has been agreed in conference between officials of the Schenectady (N. Y.) Railway and the representatives of the employees that overtime work in all branches of the service will hereafter be paid for at the rate of time and a half. Nine hours will constitute a day's work.

Increase in Wages in Tampa.—An increase of 2 cents an hour was made on July 1 in the pay of all motormen and conductors employed by the Tampa (Fla.) Electric Company. The reason for the increase is the increasing cost of the necessities of life, according to the announcement of the company. The present scale of wages is from 21 to 28 cents an hour, according to class of service and length of time employed. The new wage scale is from 23 to 30 cents an hour.

Battery Car Operation Considered.—L. J. Cooper, president of the Waycross Savings & Trust Company, Waycross, Ga., who purchased the property of the Waycross Street & Suburban Railway under foreclosure recently, hopes to continue to operate the line. The company bought power in the past. It has been suggested now that the line be converted for storage battery car operation, the local power company having agreed to charge only 1 cent per kw.-hr. for energy after 11 p. m.

Pittsburgh Experts Named.—The Council of Pittsburgh, Pa., has affirmed resolutions providing for the retention of experts in connection with the contests of the city with the Pittsburgh Railways, Duquesne Light Company, Equitable Gas Company and other concerns. The following engineers will be engaged: For the electric railway investigation, Bion J. Arnold and staff of Chicago; for light rate investigation, F. W. Ballard & Company, Cleveland; C. W. Pike, Philadelphia; E. M. Bemis, Chicago, and W. E. Reed, Pittsburgh; for gas cases, Mr. Bemis.

Increase in Wages in Washington.—The Washington Railway & Electric Company, Washington, D. C., has increased the wages of its motormen and conductors 2 cents an hour. The official announcement as posted by the company on July 1 was as follows: "The company has adopted an increased wage scale for motormen and conductors to become effective July 4, as follows: Less than one year, 26 cents an hour; second year, 27 cents an hour; third year, 28 cents an hour; fourth and fifth years, 29 cents an hour; sixth and seventh years, 30 cents an hour; eighth, ninth and tenth years, 31 cents an hour; more than ten years, 32 cents an hour."

Hearing on New Philadelphia Applications on Aug. 2.—Transit Director Twining of Philadelphia, Pa., was informed recently by the Public Service Commission that a hearing would be held on Aug. 2 on the applications of the city for authority to construct the Chestnut Street subway. The commission announced the date of the hearing immediately after receiving from Mr. Twining the requests and the plans and specifications which accompanied them. The applications were made in accordance with the new transit program which the Mayor decided upon, following the defeat of the Salus bill in the Legislature.

Missouri Road to Be Sold.—It is stated that the Southern Traction System, extending from St. Louis to Belleville, Ill., and points south, which never has been operated, will probably be sold to the Michigan Central Railroad. The road originally was intended for passenger and freight service, but was thrown into the hands of receivers shortly after



the tracks were laid. The property could be used by the Michigan Central Railroad to transport coal from the Murphy, Lattmann-Reeb, New National, Schramm and White Rose mines to St. Louis and northern Illinois points.

**Tentative Wage Schedule for Providence.**—It is understood that the Rhode Island Company and the union officials have tentatively agreed upon a new wage schedule under which platform men will receive a maximum of 34½ cents an hour with a minimum guarantee of 6½ hours. This is an increase of 4½ cents an hour. In addition, the guarantee of a minimum is new, the company having refused any guarantee in the last agreement. The conferences between the two sides are said to be rapidly drawing to a close, and it is believed that the union will call a meeting soon to receive the report of its representatives.

**Conditions for Suspending Service in Lincoln.**—In connection with the plan to municipalize the railway at Lincoln, Ill., referred to in the *ELECTRIC RAILWAY JOURNAL* of July 7, page 32, it was stated that "the property lost money as a private venture and after disagreement with the Council of Lincoln the State Public Utilities Commission authorized the company to suspend operations." This statement was correct only in part, as the order of the commission in this case was to the effect that the company could discontinue operation upon receiving the consent of the duly authorized representatives of the city of Lincoln.

**Milwaukee Electric Divisions to Consolidate.**—According to reports, the two electric divisions of the Chicago, Milwaukee & St. Paul Railway are to be consolidated into one division, with Deer Lodge, Mont., as division headquarters. The territory extends from Avery, Idaho, on the west to Harlowton on the east. The division will be under the superintendency of J. J. Murphy, Deer Lodge. At present, Three Forks, Mont., is the headquarters of the eastern division and Missoula, Mont., of the western division. E. H. Barrett, assistant general superintendent of the road, states the move is being made as a matter of economy and will result in better operation of the road.

**City Sues Railway for Part of Bridge Costs.**—The City Council of Seattle, Wash., recently passed a resolution concurring in the action of Mayor H. C. Gill instructing Corporation Counsel Hugh M. Caldwell to bring suit against the Puget Sound Traction, Light & Power Company for \$60,917, the company's share of the cost of construction of the Fremont Bridge across the Lake Washington government canal recently thrown open for use. Corporation Counsel Caldwell has also been instructed to compel the company to pay \$133 per month as its share of the maintenance and operation cost of the bridge, and to buy from the city at the rate of 1 cent per kw.-hr. the current used by the cars in crossing the bridge.

**Court Sustains City Demurrers.**—In a memorandum decision rendered by Judge J. T. Ronald of the King County Superior Court at Seattle, Wash., recently, he sustained demurrers by Corporation Counsel Hugh M. Caldwell to two defenses of the Puget Sound Traction, Light & Power Company against the payment to the city of Seattle of 2 per cent of the gross earnings of the company during 1916. The city sued the company for \$64,876, said to represent 2 per cent of the gross earnings during that year. The company refused to pay it on two grounds, first, the passage by the Public Service Commission of a law stating that it is against public policy to regulate the company, and, second, the passage of an ordinance compelling the company to sell commutation tickets on the cars, causing the company to lose the sum of approximately \$70,000.

**Baltimore Holds Out for Pennsylvania Electrification.**—City Solicitor Field has submitted to the Board of Estimate of Baltimore, Md., the administration amendments to the Pennsylvania Railroad ordinances providing for terminal changes in that city. The amendments are regarded as the minimum that the city will accept for the franchises that the railroad company desires from the city, which include the building of new tunnels so as to give the company a four-track line through Baltimore and extensive freight-yard facilities in the heart of the city. As originally drawn the ordinances contained conditions which the railroad thought to be reasonable. The amendments contain what the Board of Estimate think the city and the public ought

to have. One of the most important things demanded by the amendments is the electrification of the tunnels and terminals of the company in the city within three years after the war with Germany shall have ended.

**Railway Opposed to Buses.**—The Public Service Commission for the First District of New York has voted unanimously to dismiss the application of the Fifth Avenue Coach Company for permission to continue temporary operation of its motor buses from 135th Street north to Broadway and 169th Street, on the ground that the action of the Board of Estimate and Apportionment was not such as would enable the commission legally to approve the application. The Board of Estimate granted temporary permission to operate and the last permit extends the privilege until Oct. 15. The commission holds to the view that the form of temporary consent is not such as would enable it to grant its approval under Section 53 of the Public Service Commissions law, governing related matters. The decision, however, does not stop the operation. The company may continue the service until stopped by court proceedings. The Third Avenue Railway is opposed to the service of the bus company being continued, but no statement has been made as to whether or not it will appeal to the courts.

**Stenographers Needed by the Government.**—The United States Government needs both men and women stenographers and typewriters for service in the departments at Washington, D. C., and in Federal offices outside of Washington. The supply of qualified persons on the lists of the United States Civil Service Commission, Washington, D. C., of which John A. McIlhenny is president, for this class of work is not anything like equal to the demand, and the commission urges as a patriotic duty that citizens with this special knowledge apply for examination for the government service. At present all who pass the examination for the departmental service are certified for appointment. Examination papers are rated without delay. Examinations for the departmental service in Washington, D. C., for both men and women, are held every Tuesday in 400 of the principal cities. Examinations for positions outside of Washington, D. C., are held frequently. The usual entrance salary ranges from \$900 to \$1,200 a year. Advancement of capable employees is reasonably rapid. Applicants must have reached their eighteenth birthday on the date of the examination. Full information and application blanks will be mailed to persons interested upon application to the United States Civil Service Commission, Washington, D. C.

## Program of Association Meeting

### New England Street Railway Club

The annual men's outing of the New England Street Railway Club will be held at Portland, Me., on July 26, 27 and 28. The members of the club will be entertained as the guests of the Cumberland County Power & Light Company. The committee in charge includes Messrs. Hale, Brush, Belling, Gordon and McCray. It is proposed to leave Boston on the Eastern Steamship Company's boat from the Central Wharf, Atlantic Avenue, on July 26 at 6 p. m., arriving in Portland at 4.30 a. m. on July 27. At 7 a. m. cars of the Cumberland County Power & Light Company will take the party to Riverton Park for breakfast. After breakfast a ball game is proposed for the prize of a silver-mounted bat last won by Captain Hale's sluggers. It is also proposed to take those who desire to play golf to the country club, returning at noon. A special golf prize will be offered. In the meantime there will be a performance at the theater. In this will be included a few acts by club talent. At 12 o'clock, after a short ride around the city, the party will be taken to Cape Cottage, where dinner will be served at the casino. Following the dinner a steamer will take the members of the party for a ride around Portland Harbor. At 7.30 p. m. the return trip to Boston will be begun by boat. The rates by steamer from Boston to Portland are \$1 and \$1.50 for inside rooms and \$2 and \$3 for outside rooms. The official notice of the meeting requested that reservations for tickets and staterooms on boats between Boston and Portland be in the hands of the outing committee by July 20 at the latest.



# Financial and Corporate

## Regulation of Industry in War

### Owing to Existence of Regulation in Utility Field, No Sudden or Drastic Readjustment Is Expected

An optimistic view of the effect of prospective increased government regulation of industries resultant upon war conditions in so far as it might bear on public utilities is taken by L. P. Hammond, Bonbright & Company, New York, N. Y. In a recent statement Mr. Hammond said, in part:

"If it becomes necessary for our government to regulate our industries, the question facing the investor, of course, is whether the procedure will involve any radical readjustment of the business situation, particularly with respect to earnings. Under these circumstances, the investor in public utility securities finds great satisfaction in the fact that the industry is and for some time has been upon a regulated basis.

"The public utility corporations have themselves learned a great deal from the commissions, and correspondingly the commissions have learned a great deal from the corporations. There is no longer any mystery about the affairs of a public utility corporation. Nor does there exist on the part of governmental authority ignorance of the affairs of public utility corporations, with consequent danger of drastic and radical legislation hastily designed in misapprehension of true conditions and in suspicion of the good faith of the corporations.

"The holder of public utility securities can therefore look forward confidently to the future. He can rest assured that no sudden or drastic readjustment of corporate activities of the utility will ensue from regulation of its affairs. He knows that the methods of valuation which have finally been worked out are generally fair alike to the utilities and to the communities served. He knows that in most cases earnings are those which have been found sufficient to pay the necessary operating expenses of the utility, to provide for the maintenance of its physical property intact and in good operating condition, and to afford—all things considered—a fair return upon the fair value of the property.

"He is assured that the industry will not be subjected to unwise or unfair regulations and practices through the inexperience or prejudices of those who undertake its regulation, since the existing regulation is the result of deliberate, intelligent action based upon the experience of many years and governed by a mass of commission and court precedents flowing out of carefully considered contest and argument."

## Railway Wins Earnings Tax Case

The State Supreme Court of Washington at Olympia on June 20 affirmed the decision of Judge Frater of the King County Superior Court holding that the city of Seattle was not entitled to collect a 2 per cent gross earning tax from the Seattle, Renton & Southern Railway, subsequent to the passage of the ordinance revoking the company's franchise. The suit was entitled "William R. Crawford vs. the Seattle, Renton & Southern Railway." Mr. Crawford was the plaintiff in the action for a receiver in 1912.

Hugh M. Caldwell, corporation counsel, states that this is the only matter not settled in the agreement reached recently between the city and the Seattle, Renton & Southern Railway, and that this was not taken up because it was on appeal at the time. Mr. Caldwell said the company had renewed payments after the court had held that the city could not revoke the franchise. He expressed the opinion that there was nothing in the decision that would have any bearing upon the difference between the city of Seattle and the Puget Sound Traction, Light & Power Company, which is suing to be relieved of paying a 2 per cent gross earning tax. Mr. Crawford states that the question at issue was merely whether the city could collect a percentage of the gross earnings of the company under a provision of a franchise which it was contended was invalid.

## Annual Reports

### Denver Tramway System

The comparative consolidated income statement of the Denver (Col.) Tramway System for the years ended Dec. 31, 1915 and 1916, follows:

|  | —1916—      |          | —1915—      |          |
|--|-------------|----------|-------------|----------|
|  | Amount      | Per Cent | Amount      | Per Cent |
| Gross earnings.....                                  | \$3,275,876 | 100.0    | \$3,141,906 | 100.0    |
| Operating expenses (including partial depreciation): |             |          |             |          |
| Maintenance .....                                    | \$317,301   | 9.7      | \$366,157   | 11.7     |
| Operation .....                                      | 1,026,268   | 31.3     | 995,054     | 31.7     |
| General .....  | 271,206     | 8.3      | 255,240     | 8.1      |
| Total .....  | \$1,614,775 | 49.3     | \$1,616,451 | 51.5     |
| Net earnings .....                                   | \$1,661,101 | 50.7     | \$1,525,455 | 48.5     |
| Taxes and franchise payments .....                   | 276,440     | 8.4      | 280,731     | 8.9      |
| Operating income.....                                | \$1,384,661 | 42.3     | \$1,244,724 | 39.6     |
| Other income.....                                    | 21,233      | 0.6      | 22,709      | 0.7      |
| Gross income.....                                    | \$1,405,894 | 42.9     | \$1,267,433 | 40.3     |
| Deductions from income:                              |             |          |             |          |
| Interest on funded debt....                          | \$980,488   | 29.9     | \$992,253   | 31.6     |
| Interest on notes and accounts payable.....          | 674         | 0.0      | 929         | 0.0      |
| Total .....  | \$981,162   | 29.9     | \$993,182   | 31.6     |
| Net income.....                                      | \$424,733   | 13.0     | \$274,251   | 8.7      |

The gross earnings of the system in 1916 showed an increase of \$133,970 or 4.26 per cent. In the opinion of the management, this, together with the largely improved business conditions in Denver and in Colorado, would justify optimistic expectations of continued increase of tramway revenues, unless the exigencies of the international situation should exert adverse influence.

Despite the increase of business, operating expenses decreased \$1,675. This, it is said, was accomplished through the introduction of some practical scientific management methods resulting in more efficient and more economical operation. The operating expenses increased \$31,214 or 3.1 per cent, and the general expenses \$15,966 or 6.2 per cent, while maintenance expenses decreased \$48,856 or 13.3 per cent.

As a result of the increased revenues and decreased operating expenses, the net earnings gained \$135,646 or 8.8 per cent. Taxes and franchise payments also decreased, as well as interest charges, so that the net income showed an increase of \$150,482 or almost 55 per cent. The surplus as of Dec. 31, 1916, amounted to \$761,123, as compared to a surplus figure of \$387,999 shown at the close of the preceding calendar year.

No dividends have been paid since June, 1915. In 1916 the bonded indebtedness of the company was reduced \$267,650 by sinking funds and maturities. During the year the expenditures for betterments aggregated \$156,195. The increase of 1 cent an hour granted to employees of the transportation and mechanical departments, effective on Jan. 1, 1917, will mean the expenditure by the company of \$25,000 a year.

The following table presents some miscellaneous statistics for passenger traffic and earnings on the city and the interurban lines of the system:

|  |             |             |
|--|-------------|-------------|
| Passengers carried:                      | 1916        | 1915        |
| City lines.....                          | 75,133,046  | 72,222,850  |
| Interurban lines.....                    | 1,065,451   | 900,395     |
| Total .....                              | 76,198,497  | 73,123,245  |
| Passenger earnings per car mile (cents): |             |             |
| City lines.....                          | 25.86       | 25.61       |
| Interurban lines.....                    | 29.30       | 27.28       |
| Passenger earnings per car hour:         |             |             |
| City lines.....                          | \$2.49      | \$2.42      |
| Interurban lines.....                    | 4.89        | 4.47        |
| Car miles operated, passenger:           |             |             |
| City lines.....                          | 11,427,964  | 11,125,869  |
| Interurban lines.....                    | 389,726     | 366,970     |
| Total .....                              | 11,817,690  | 11,492,839  |
| Car hours operated, passenger:           |             |             |
| City lines.....                          | 1,184,588.2 | 1,175,853.6 |
| Interurban lines.....                    | 23,351.2    | 22,393.8    |
| Total .....                              | 1,207,939.4 | 1,198,247.4 |



### Illinois Traction System

The comparative income statement of the Illinois Traction System, Peoria, Ill., for the calendar years 1915 and 1916 follows:

|  | —1916—       |          | —1915—       |          |
|--|--------------|----------|--------------|----------|
|  | Amount       | Per Cent | Amount       | Per Cent |
| Interurban lines .....                                     | \$3,993,836  | 31.8     | \$3,559,028  | 31.8     |
| City lines .....   | 3,110,811    | 24.7     | 2,871,035    | 25.6     |
| Gas .....  | 923,642      | 7.4      | 905,702      | 8.0      |
| Electric .....   | 3,689,851    | 29.4     | 3,325,410    | 29.7     |
| Heat .....   | 341,379      | 2.7      | 317,579      | 3.8      |
| Water .....  | 14,476       | 0.1      | 14,215       | 0.1      |
| Miscellaneous .....  | 492,450      | 3.9      | 195,022      | 1.7      |
| Total gross earnings.....                                  | \$12,566,447 | 100.0    | \$11,187,994 | 100.0    |
| Operating expenses and taxes                               | 7,489,797    | 59.6     | 6,657,569    | 59.5     |
| Gross income.....  | \$5,076,649  | 40.4     | \$4,530,425  | 40.5     |
| Interest on bonds.....                                     | 3,603,417    | 28.7     | 3,268,607    | 29.2     |
| Net income available for depreciation, dividends, etc..... | \$1,473,232  | 11.7     | \$1,261,818  | 11.3     |

According to the annual report, the gross and the net earnings from all departments showed normal increases. The main increases in gross were \$444,808 or 12.5 per cent for the interurban lines, \$239,776 or 8.4 per cent for the city lines and \$364,441 or 10.9 per cent for the electric department. The total gross earnings gained \$1,378,453 or 12.2 per cent.

The report does not give any details of operating expenses, which as a whole increased \$832,228 or 12.5 per cent. The gross income increased \$546,224 or 12.0 per cent, but this gain was cut into by the rise of \$334,810 or 10.2 per cent in interest charges. The net result was an increase of \$211,414 or 16.7 per cent in net income. After deducting \$505,565 for depreciation and \$65,282 for bond discount, the company had a surplus of \$902,384 for the year.

This result from operation, it is said, was especially gratifying because of the extraordinarily high prices which prevailed throughout the year on substantially all materials. In particular the supplying of fuel for the electric generating stations was a matter of concern. Moreover, all skilled and common labor demanded constantly increasing wages, and it was advisable in some instances to meet this condition in order that the company's permanent organization should not become disrupted. These deterrent influences, however, were partly offset by the operating efficiency and persistent solicitation for new business.

The activity in industrial lines as the result of an abnormal demand for manufactured products at home and abroad contributed to a condition of prosperity in the territory served by the company which had a direct bearing on the gross earnings, especially from transportation and electric power. The street railways benefited from nearly the total disappearance of "jitney" competition and the fact that the effect of privately owned automobiles is not so apparent, although still a considerable detriment.

During the last year new freight equipment for the interurban lines was ordered, as follows: 100 box cars, 80,000 lb. capacity; 60 hopper bottom cars, 100,000 lb. capacity, and 40 flat-bottom gondola cars, 80,000 lb. capacity. Enlargement and extensions of the facilities for handling interurban freight traffic were effected, new connections with grain elevators, manufacturing industries and coal mines were completed, and working agreements were entered into with additional steam railroads.

### Extension of Organization for Selling Securities to Consumers

The bond department of Henry L. Doherty & Company, New York, N. Y., has opened a branch office in Toledo, in charge of Walter J. Young, formerly power salesman of the new-business department of the Toledo Railways & Light Company. This new office is the third step in a comprehensive plan for selling securities to consumers of Doherty service. The plan was inaugurated at Massillon, Ohio, in 1914, by the sale of the preferred stock of the Massillon Electric & Gas Company to the public. Last February a more elaborate campaign was carried on in Denver, where the firm of Barker & Smith was organized to deal in the securities of companies operated by H. L.

Doherty & Company. The bond department hopes, in time, to have either a special representative in every Doherty community, or to conduct an organized security selling campaign under the direction of the local general manager.

**American Water Works & Electric Company, New York, N. Y.**—The stockholders of the American Water Works & Electric Company have voted to increase the capital stock of the company from \$25,000,000 to \$30,000,000. The additional capitalization is to be issued in the form of first preferred stock and will increase the amount of that issue from \$5,000,000 to \$10,000,000. It is proposed to fund the 21 per cent accumulated dividends on the present outstanding issue. The plan to liquidate the dividend is as follows: \$150,000 or 3 per cent, in cash forthwith; \$450,000 or 9 per cent, in first preferred stock at par, and \$450,000 or 9 per cent in common stock at 22½, or \$2,000,000 par value of common stock.

**Boise (Idaho) Railroad, Ltd.**—The Boise Railroad, consisting of city lines and the Natatorium, a famous natural hot-water resort, were bid in recently in the Federal Court by David Miller and W. E. Pierce for \$100,000. Judge Frank S. Dietrich of the federal court has confirmed the sale. H. E. Dalton, former manager, conducted the sale as receiver. Only one other bid was offered, that of J. W. Cunningham for \$60,000. The sale was brought about on account of foreclosure proceedings instituted by the Germantown (Pa.) Trust Company.

**Calgary (Alta.) Municipal Railway.**—Thomas H. McCauley, superintendent of the Calgary Municipal Railway, recently wrote A. G. Graves, street railway commissioner of the city, that the line would face a deficit of \$22,000 on July 1. Mr. McCauley said: "I beg to submit to you herewith reports covering April, and four months to April 30, showing a deficit of \$16,741, to which must be added that of May, estimated at \$2,500; uniforms and caps, \$3,550, so that I estimate we will face a deficit of \$22,000 July 1. A portion of this amount is made up of materials for the year's operations, car wheels, air brakes, electrical equipment for repairs, and stock that had to be purchased for replacements at very much increased cost, also car reconstruction expenses. From the daily reports you will notice that we are still operating 250 car hours per day, with two men, or 74 cents an hour. One man on these cars would save \$60 a day. By July 15 I will have fully equipped with all safety devices cars sufficient to operate the lines, and would recommend that same be approved that, if possible, we may recover the losses before the end of the year."

**Cape May, Delaware Bay & Sewell's Point Railway, Cape May, N. J.**—The West Jersey & Seashore Railroad and the Atlantic City & Shore Railroad are said to have presented to the New Jersey Board of Public Utilities Commissioners a joint proposal to operate the Delaware Bay & Sewell's Point Railway at Cape May to help the government in the construction of the naval base there. The road was sold in the spring under foreclosure to Wilson & Carr, attorneys of Camden, for \$55,000, and is said to have been disposed of since by them to the Walker-James Company, which contemplated dismantling the property.

**Carolina Power & Light Company, Raleigh, N. C.**—Warner, Tucker & Company, Boston, Mass., announce that there has become effective a plan calling for the exchange of the preferred and common stocks of the Carolina Gas & Electric Company for the common and preferred stocks of the Carolina Power & Light Company. The holdings of stock, constituting more than a majority in interest, of Warner, Tucker & Company and associates will be so exchanged, and the minority holders of Carolina Gas & Electric Company are to be accorded the same privilege. With the exchange of stock the control of the Carolina Gas & Electric Company is to be acquired by the Yadkin River Power Company, a subsidiary of the Carolina Power & Light Company, which does a general lighting, power and gas business and operates 13.65 miles of electric railway.

**Charlottesville & Albemarle Railway, Charlottesville, Va.**—The Charlottesville & Albemarle Railway has recently paid a semi-annual dividend of 3½ per cent on its preferred stock and a 2½ per cent semi-annual dividend on its common stock.



**Cincinnati (Ohio) Traction Company.**—An application has been filed with the Ohio Public Utilities Commission by the Cincinnati Traction Company for permission to purchase 100 double-truck, steel, pay-within cars, and to pay for them with \$550,000 of 6 per cent equipment trust certificates, the remainder to be paid in cash.

**Jefferson County Traction Company, Beaumont, Tex.**—The taxpayers of Port Arthur and Beaumont have authorized by referendum vote the merging of the properties of the Jefferson County Traction Company, the Beaumont Traction Company, the Beaumont Electric Light & Power Company and the Port Arthur Light & Power Company, all controlled by the Eastern Texas Electric Company, a Stone & Webster property. The merger is in the interest of intercorporate simplicity.

**Kentucky Securities Corporation, Lexington, Ky.**—The holders of the common and the preferred stocks of the Kentucky Securities Corporation have the right to subscribe to 8.2 per cent of their holdings in new preferred stock of the corporation. The subscription price of the new preferred stock has been fixed at 82½ per cent of par value, plus accrued dividend at rate of 6 per cent from July 1, 1917. Payment is to be made at the Philadelphia offices in full on or before Aug. 15 or on a partial payment plan.

**Mahoning & Shenango Railway & Light Company, Youngstown, Ohio.**—The Ohio Public Utilities Commission issued a formal order on July 12, approving the merger of the Youngstown & Sharon Railway, the Mahoning Valley Railway, the Youngstown Park & Falls Railway, the Poland Street Railway and the Mahoning Valley Southeastern Railway with the Mahoning & Shenango Railway & Light Company in the interest of economy and centralized management.

**New York (N. Y.) Railways.**—The stockholders of the Bleecker Street & Fulton Ferry Railroad, which has been taken over by the New York Railways, will vote on July 25 on a declaration of abandonment of routes adopted by the directors on June 8 last.

**Ohio Electric Railway, Cincinnati, Ohio.**—The Ohio Public Utilities Commission has approved the application of the Ohio Electric Railway for authority to purchase rolling stock equipment to the value of \$130,000, paying therefor in cash \$30,000 and issuing \$100,000 of equipment trust certificates to secure the rest of the funds. The company contemplates the purchase of four motor express cars, sixteen flat trail cars and sixteen box trail cars.

**Orleans-Kenner Electric Railway, New Orleans, La.**—Leigh Carroll has been appointed receiver of the Orleans-Kenner Electric Railway as a result of the application made by J. D. Purcell, trustee, representing certain of the security holders. The affairs of the company have been reviewed briefly several times recently in the ELECTRIC RAILWAY JOURNAL. The receivership proceedings are understood to have been of a friendly nature and are said to have been decided upon as offering perhaps the best means to a speedy and satisfactory readjustment of the affairs of the company.

**Philadelphia (Pa.) Rapid Transit Company.**—A semi-annual dividend of 2½ per cent, or \$1.25 a share, has been declared out of the surplus earnings of the Philadelphia Rapid Transit Company for the fiscal year ended June 30 upon the capital stock of the company, payable on July 31 to shareholders of record of July 23. This is the second semi-annual dividend of the company, 2½ per cent having been paid in January, 1917. In October, 1916, \$1 was paid on the stock, being the first disbursement since the company was formed in 1902.

**Quebec Railway, Light, Heat & Power Company, Quebec, Que.**—The Quebec Railway, Light, Heat & Power Company will be awarded \$275,000 for property known as the Quebec Gas Company's land belonging to the Quebec Railway, which has been appropriated by the federal authorities, according to a decision of the Exchequer Court. The government offered the Quebec Railway some time ago \$125,000, or at the rate of \$2 per foot for the land, but the court made the award \$5 a foot, or \$270,000. To this is added \$30,000 already decided upon by mutual agreement, as a sort of bonus, which makes a total of \$305,000. The crown also will have to pay the cost of the proceedings.

**San Antonio (Tex.) Public Service Company.**—The San Antonio Public Service Company has been incorporated in Texas with a capital stock of \$4,700,000 for the purpose of taking over and operating the properties of the San Antonio Gas & Electric Company and the San Antonio Traction Company, both controlled by the American Light & Traction Company. The new company is also authorized in its charter to construct a system of interurban electric railways out of San Antonio, and it is reported will build a line between San Antonio and Austin, a distance of about 85 miles. The San Antonio & Austin Traction Company has been promoting the construction of this proposed road for some time past. The San Antonio Public Service Company is headed by Emerson McMillin, New York, who is chairman of the board of directors of the American Light & Traction Company.

**Toledo Traction, Light & Power Company, Toledo, Ohio.**—Harris, Forbes & Company, New York, N. Y., Harris, Forbes & Company, Inc., Boston, Mass., and the Harris Trust & Savings Bank, Chicago, Ill., have sold at 100 and interest a block of \$486,000 of first lien 6 per cent five-year bonds of 1913 of the Toledo Traction, Light & Power Company, making the total outstanding of this issue \$7,499,000.

## Dividends Declared

Bangor Railway & Electric Company, Bangor, Me., quarterly, one-half of 1 per cent, common.

Carolina Power & Light Company, Raleigh, N. C., quarterly, one-half of 1 per cent, common.

East St. Louis & Suburban Company, East St. Louis, Ill., quarterly three-fourths of 1 per cent, preferred.

Milwaukee Electric Railway & Light Company, Milwaukee, Wis., quarterly, 1½ per cent, preferred.

New Hampshire Electric Railways, Haverhill, Mass., 1 per cent, preferred.

Public Service Investment Company, Boston, Mass., quarterly, 1½ per cent, preferred.

Trinidad Electric Company, Ltd., Port-of-Spain, Trinidad, quarterly, 1¼ per cent.

## Electric Railway Monthly Earnings

| ATLANTIC SHORE RAILWAY, SANFORD, ME.                        |                   |                    |                  |               |            |  |
|---|-------------------|--------------------|------------------|---------------|------------|--|
| Period  | Operating Revenue | Operating Expenses | Operating Income | Fixed Charges | Net Income |  |
| 1m., June, '17  | \$16,495          | \$11,634           | \$4,861          | \$430         | \$4,431    |  |
| 1 " " '16   | 28,422            | 26,571             | 1,851            | 650           | 1,200      |  |
| BATON ROUGE (LA.) ELECTRIC COMPANY                          |                   |                    |                  |               |            |  |
| 1m., May, '17   | \$17,792          | *\$10,383          | \$7,409          | \$3,498       | \$3,911    |  |
| 1 " " '16   | 17,765            | *8,267             | 9,498            | 3,469         | 6,029      |  |
| 12 " " '17  | 221,329           | *106,159           | 115,170          | 12,274        | 72,896     |  |
| 12 " " '16  | 201,669           | *105,681           | 95,988           | 33,610        | 62,378     |  |
| BROCKTON & PLYMOUTH STREET RAILWAY, PLYMOUTH, MASS.         |                   |                    |                  |               |            |  |
| 1m., May, '17   | \$9,586           | *\$10,916          | †\$1,330         | \$1,222       | †\$2,552   |  |
| 1 " " '16   | 10,076            | *9,663             | 413              | 1,101         | †688       |  |
| 12 " " '17  | 125,193           | *116,962           | 8,231            | 13,653        | †5,422     |  |
| 12 " " '16  | 118,566           | *99,623            | 18,943           | 13,338        | 5,605      |  |
| CAPE BRETON ELECTRIC COMPANY, LTD., SYDNEY, N. S.           |                   |                    |                  |               |            |  |
| 1m., May, '17   | \$36,029          | *\$25,167          | \$10,862         | \$6,683       | \$4,179    |  |
| 1 " " '16   | 30,278            | *20,036            | 10,242           | 6,548         | 3,694      |  |
| 12 " " '17  | 419,412           | *245,679           | 173,733          | 78,741        | 94,992     |  |
| 12 " " '16  | 378,587           | *222,213           | 156,374          | 78,654        | 77,720     |  |
| CLEVELAND, PAINESVILLE & EASTERN RAILROAD, CLEVELAND, OHIO. |                   |                    |                  |               |            |  |
| 1m., May, '17   | \$43,746          | *\$29,011          | \$14,735         | \$12,176      | \$2,559    |  |
| 1 " " '16   | 39,296            | *22,451            | 16,845           | 12,074        | 4,770      |  |
| 5 " " '17   | 195,889           | *120,928           | 74,961           | 58,953        | 16,008     |  |
| 5 " " '16   | 167,088           | *99,043            | 68,045           | 56,695        | 11,850     |  |
| COLUMBUS (GA.) ELECTRIC COMPANY                             |                   |                    |                  |               |            |  |
| 1m., May, '17   | \$84,410          | *\$33,300          | \$51,110         | \$28,444      | \$22,866   |  |
| 1 " " '16   | 66,694            | *28,710            | 37,984           | 28,647        | 9,337      |  |
| 12 " " '17  | 973,048           | *369,711           | 603,337          | 341,975       | 261,362    |  |
| 12 " " '16  | 771,037           | *331,591           | 439,496          | 344,173       | 95,323     |  |
| DALLAS (TEX.) ELECTRIC COMPANY                              |                   |                    |                  |               |            |  |
| 1m., May, '17   | \$170,225         | *\$109,371         | \$60,854         | \$41,262      | \$19,592   |  |
| 1 " " '16   | 151,437           | *100,925           | 50,512           | 36,695        | 15,817     |  |
| 12 " " '17  | 2,102,289         | *1,271,735         | 830,554          | 472,195       | †\$366,501 |  |
| 12 " " '16  | 1,887,791         | *1,166,867         | 720,924          | 420,957       | †\$311,167 |  |
| EASTERN TEXAS ELECTRIC COMPANY, BEAUMONT, TEX.              |                   |                    |                  |               |            |  |
| 1m., May, '17   | \$74,232          | *\$43,957          | \$30,275         | \$11,674      | †\$20,333  |  |
| 1 " " '16   | 65,334            | *36,738            | 28,596           | 8,870         | 19,726     |  |
| 12 " " '17  | 883,414           | *477,162           | 406,252          | 115,991       | †\$293,491 |  |
| 12 " " '16  | 781,095           | *407,974           | 373,121          | 105,923       | 267,198    |  |

\*Includes taxes. †Deficit. ‡Includes non-operating income.



## Traffic and Transportation

### Decision in Connecticut Service Case

#### Public Utilities Commission Holds That Connecticut Company Should Not Be Required to Procure Any Specific Number of New Cars

The Public Utilities Commission of Connecticut on July 3 handed down its decision in the matter of the inquiry by it into the question of the adequacy of the service of the Connecticut Company. The commission is of the opinion that no order should issue at this time requiring the company to procure any specific number of passenger cars. It says, however, that the absence of a positive order is not intended to relieve the company from its obligations to furnish adequate service nor from the exercise and mandate of good judgment to anticipate future traffic needs and reasonably to provide for the same. This decision by the commission was reached after consideration of the facts that were brought out at the hearings in the case, including the information filed by the company in answer to inquiries made of it by the commission, and having in mind the present unsettled industrial conditions and the effect of these conditions upon electric railway requirements.

#### INDEPENDENT INQUIRY BY COMMISSION

Under date of March 6 the commission sent a letter to the company in which it said it had noted that the service of the company had been unsatisfactory. The commission attempted on its own initiative through conferences with representatives of the company and the traveling public and by independent investigations to discover the underlying causes of the alleged unsatisfactory service and to assist in remedying such of these cases as were manifest. The commission concluded after the hearings that while inadequacy of track facilities in some places contributed largely to the defects in the service, the chief cause was a general shortage of cars. In its finding the commission referred to its inquiry during 1915 and 1916 and quoted the statement of L. S. Storrs, president of the company, on March 28, 1916, that in his opinion 100 to 150 new cars would take care of traffic during the winter of 1916-1917 unless extraordinary demands were experienced. On June 21, 1916, the commission approved plans for 100 new convertible type cars, delivery to be made on Oct. 1, 1916. None of these cars, however, were delivered before Feb. 1, 1917, and only four were received by the company prior to March 1, 1917.

The commission expressed the conclusion that adequate service could be secured only by preparation made long in advance. In view of the foregoing the company was directed and required to appear before the commission on March 15 and show cause why an order should not issue directing it to procure additional cars. As a result of the hearing on March 15 the commission formulated a list of questions which it asked the company to answer before March 30, to which date the hearing was continued. The commission required the company among other things to furnish it with a list of passenger cars designated by operating divisions and giving the various types of cars. It also required a statement of the general service conditions of the passenger cars by divisions, an estimate of the number and kind of passenger cars expected to be retired from service from each division during 1917, the total number and kind of passenger cars retired from service in each division during each of the last three calendar years, an estimate of the number and kind of additional passenger cars necessary to render adequate service on each division during the coming summer and the winter of 1917 and 1918. It further required from the company a statement of the number of passengers carried on each division during each of the last five calendar years, the net average and total seating capacity of cars in service on each division during each of the last five calendar years, the latest available count of traffic during rush hours on certain of the lines, what the proposed distribution was of the 100 cars ordered in 1916 and a statement of the redistribution of the existing cars to the various

lines of other divisions. It also asked about the power supply and the shop facilities.

#### COMPANY FILES WRITTEN REPLY

On March 30 Mr. Storrs, counsel, and the entire board of trustees of the company filed written answers to the questions and submitted a statement regarding the financial condition of the company and other matters relevant to the inquiry. It was the commission's original impression that the complaints regarding the service were based upon inadequacy of the company's rolling stock and that the remedy was the acquisition of more cars. The representatives of the company admitted overcrowding during the rush hour, but stated that this was due to the failure to receive on time the cars ordered in the spring of 1916 and promised for delivery in the fall of the same year. Traffic in 1916 ran far ahead of that for any of the five years preceding, and for 1917 had been materially greater than for the corresponding period of 1916. It was asserted at the hearing that in the company's opinion the peak of passenger traffic had been reached, and unless all indications should prove false there would be no increase in the immediate future beyond the year 1916, while a slight decrease could normally be expected.

#### DECREASE IN BUSINESS LIKELY

The commission expressed the opinion that the electric railway situation viewed in connection with the present war conditions may possibly bear out the company's conclusion that while the demands in certain localities will be somewhat increased, they will be at least proportionately decreased in other localities, and the net result will leave the requirements upon the company at no higher level than they have been for the past year. The commission considered that the important question was the adequacy of the company's equipment for handling winter traffic. It said that it was apparently adequately equipped to handle summer traffic. The commission concluded its findings in part as follows:

"The figures showing the increase in passengers carried in 1915-1916 are without question explained by the unusual conditions in the larger cities incident to the production of war materials. This sudden increase in business could not reasonably have been anticipated, and on account of the uncertainty of its continuance the company was reluctant immediately to acquire additional equipment, at constantly rising prices, in order to meet what might be only a temporary demand. There is a possible analogy between the conditions confronting the railway in this sudden state of industrial activity and the conditions existing universally in large cities during the rush-hour periods of the day. It is commonly conceded that no electric railway should be required to furnish seating accommodation for every passenger during such rush-hour periods in large industrial centers, because if this were done the company would be required to maintain a large amount of idle equipment during the portions of the day when traffic is lighter. For the same reason there may be some justice in excusing the company from at once acquiring sufficient equipment to give wholly satisfactory service during the period of unusual industrial activity because of the possibility that upon the cessation of the period of activity the company would have on its hands a surplus of equipment acquired at abnormal prices. The problem confronting the electric railway managers is to forecast the normal future demands upon transportation companies.

"The same conditions which are throwing an unusual burden upon the electric railways operate also to increase the cost of new equipment. The double-truck convertible pay-as-you-enter cars purchased by the Connecticut Company in 1915 are reported by that company to have cost approximately \$5,575 each. Similar cars, according to estimates furnished by car builders, would now cost in the neighborhood of \$8,700 each and the time of delivery would be very indefinite.

#### PRESENT EQUIPMENT PROBABLY ADEQUATE

"While conditions during the last winter in the larger cities were unsatisfactory, there is good reason to believe that the use during the coming winter of the 100 cars which are now being delivered will give material relief except in the unexpected event that the demands should be in excess of those during the past winter."



## Washington Jitney Men Win

Secure an Injunction Against Their Prosecution by the Puget Sound Traction, Light & Power Company on Criminal Warrants

Judge J. T. Ronald in the King County Superior Court at Seattle, Wash., recently filed a memorandum decision granting the injunction sought by twenty-five jitney-bus drivers to restrain the officials and agents of the Puget Sound Traction, Light & Power Company from prosecuting them on criminal warrants charging violations of provisions of the State law requiring jitney-bus drivers to file bonds and procure permits from the Secretary of State for the operation of jitneys. Attorneys for the jitney men ask that the railway be restrained from prosecuting upon the grounds that the company had chosen a court of equity as its forum and should not be permitted to enter a criminal court at the same time.

In the original suit for a temporary injunction which was tried before Judge Ben Sheets of Grays Harbor County twenty-five defendants were named, but the company later came into court with an amended complaint increasing the number of defendants to 195. After Judge Sheets had refused to grant a temporary injunction, holding that the railway was not in need of immediate relief, the traction company dismissed its cause of action as to all of the defendants except the original twenty-five, on the ground that they had not been served with a copy of the complaint. The defendants who were dropped from the original cause, in the Superior Court, were afterward made defendants in an application for an injunction brought by the company in the federal court, and this case is now awaiting a decision by Judge Neterer, on a question of jurisdiction.

The basis of the decision appears to be that the railway, having elected to pursue the remedy of injunction, and having failed to obtain relief in a court of equity, it is now estopped from attempting to achieve the same end by criminal prosecution. Unless the other jitney drivers now charged with criminal violations are brought within the protection of Judge Ronald's decision their cases will be tried.

## Increase for Small Idaho Roads

The Public Utilities Commission of Idaho has denied the application of the large railroads operating in the State for a 15 per cent horizontal rate increase. The thirteen railroads operating in Idaho applied for the increase in rates and filed tariffs with the commission effective July 1. These tariffs the commission suspends as to most of the roads. It makes a few exceptions as to the smaller railroads where the evidence showed that on their receipts they were not paying operating and other expenses. They are the Caldwell Traction Company, Pacific & Idaho Northern, Lewiston, Nez Perce & Eastern, Camas Prairie and the Boise Valley Traction companies. The carriers denied the right to increase their rates are the Oregon Short Line Railway, Oregon-Washington Railroad & Navigation Company, Great Northern, Northern Pacific, Chicago, Milwaukee & St. Paul, Spokane & Inland Empire, Spokane International and the Ogden, Logan & Idaho.

In deciding against the larger carriers the commission says in its order and opinion:

"The commission feels that the world-wide phenomenon of rising prices is by this time no novelty. Since 1906 prices have been rapidly rising. This has mirrored itself in the increased cost of living. This advance in the price level must eventually be reckoned with in railroading. For a time its effect may be overcome by increases in the volume of traffic and economies practiced by the railroads. In justice to the petitioners in this case, we believe that there are some commodities that could rightly stand a reasonable increase without causing any hardship or injustice to the public. The railroads must be maintained at the highest possible standard of efficiency in order to take care of the demands made upon them. Many industrial enterprises are making enormous returns and unless railroad returns bear some reasonable relationship to the returns from these other enterprises, it will be very difficult to secure capital for railroad investment."

## Rate Question in Missouri

Members of the Missouri Association of Public Utilities Being Canvassed in Regard to General Application to Missouri Commission for Relief

The Missouri Association of Public Utilities is considering the advisability of having its member companies apply to the Missouri Public Service Commission for permission to make a general rate increase. The rates committee of the association, of which Hugh Wurdeck, president of the Light & Development Company, St. Louis, is chairman, is asking members of the association for their views on the matter. It is understood that the majority of the gas, water and electric interests are in favor of an appeal to the commission for relief, but that the electric railways are undecided upon action on an application for increased fares. If the companies decide to go before the commission that body will probably be asked to grant the increase as an emergency measure, retaining the right to cancel the concession as soon as it is satisfied that there has been a return to conditions similar to those that existed before the war. Up to July 19 no general application had been made to the commission by any of the classes of utilities.

## Hearing on Baltimore Skip Stops

The skip-stop plan of operation having had more than two months' trial on two lines of the United Railways & Electric Company, Baltimore, Md., and the commission having received a number of communications relative thereto, including letters condemning as well as commending the system, it was decided by the commission to hold a hearing with a view to determining whether that body should sanction the continuance of the system and its extension to other lines. To lay a tangible foundation for a hearing the commission formulated a specific complaint against the railway, embodying an epitomization of all the charges against the skip-stop in the letters received from dissenters. In this formal complaint it is contended that the skip-stop is unjust and unreasonable and productive of inadequate service and creates a much larger measure of public inconvenience, discomfort and hardship than any it removes. The company's answer is about to be filed. The commission will then fix a date for a public hearing. Of the persons opposed to the skip-stop only a small percentage is antagonistic to the principle of operation. The others oppose the skipping of specific points. The hearing will be upon the general principle, but the commission may be expected to pass upon the reasonableness of the selection of skipped points by the company. The answer of the company to the commission's complaint will take issue with each contention made in that complaint, and will be supported by charts and statistics in substantiation of its position.

**Increase in Fare in Pennsylvania.**—The Cumberland Railway, Carlisle, Pa., operating between Carlisle, Mount Holly and Newville, has increased the fare from Carlisle to Mount Holly from 10 cents to 14 cents and from Carlisle to Newville from 20 cents to 28 cents.

**Increase in Zone Fares Authorized.**—The Board of Public Utility Commissioners of New Jersey has granted permission to the Northampton, Easton & Washington Traction Company, Easton, Pa., to add 1 cent to each of the seven zones on its line between Phillipsburg and Port Murray, N. J.

**Suburban Fare Case at Kansas City Closed.**—The arguments in the proceedings concerning suburban and interurban fares on Kansas City (Mo.) Railways were heard in Jefferson City, Mo., on July 12, by the Public Utilities Commission. Decision will probably not be rendered before September.

**Claim Adjuster Injured.**—While adjusting claims on July 11 due to a recent wreck on the road, Fred J. Zink, claim agent of the Toledo & Indiana Railroad, Toledo, Ohio, was seriously injured when the automobile in which he was riding was struck by a car on his own road. Attorney R. L. Starr, who was aiding him, and the Rev. J. A. Jayne, who was driving the automobile, were killed.



**Another Maine Road Increases Its Fares.**—In order to meet the rapidly increasing advances in operating expenses which all the electric railways throughout the country are now experiencing, the Lewiston, Augusta & Waterville Street Railway, Portland, Me., has raised the fare between Lewiston and Bath, a distance of 28.3 miles, from 35 cents to 50 cents, making ten 5-cent zones in the place of seven. The company has also discontinued the use of reduced rate tickets, formerly sold in strips of eleven for 50 cents. Both of these changes became effective on July 1.

**New Fare Tariff Filed.**—The Plattsburg (N. Y.) Traction Company has filed with the Public Service Commission for the Second District of New York the following tariff changes: Local fares for strip tickets good for six 5-cent rides, 25 cents; strip tickets good for ten 10-cent rides between Plattsburg and Bluff Point, 50 cents; and book tickets good for fifty 5-cent rides, \$2; also fares for children five years of age and under twelve, 3 cents where 5-cent fare prevails and 6 cents where 10-cent fare prevails. The changes are to become effective on Aug. 1, 1917.

**California Commission to Investigate Jitneys.**—The Railroad Commission of California has instituted an investigation into rates, rules and regulations of the jitneys and auto truck lines subject to its jurisdiction. The first hearing will be held in Los Angeles before the commission en banc on July 25 and this will be followed by a hearing in San Francisco on Aug. 8. The purpose will be to secure information and suggestions from auto bus men and all interested parties upon which the commission may formulate rules for the regulation of these carriers. The rules will cover quality of service, schedules, filing of bonds, etc.

**Three Accidents in Ohio.**—There were three serious accidents during the week ended July 7 on the interurban electric railways in Ohio. Two of the accidents occurred on July 4. One caused the death of three persons, the result of a rear-end collision at night on the Toledo & Indiana Railway near Stryker. Another death resulted from an accident at Youngstown, when an interurban car entering the city left the track and struck a telephone pole. Fifteen others were injured in this accident. In a head-on collision between two cars on the Cleveland, Painesville & Eastern Railway at Stop 67 on July 5 eleven people were slightly injured.

**Independent Jitney Men in Portland Suspend Operation.**—The Portland Trackless Car Company recently filed acceptance with the City Council of Portland, Ore., of the four jitney franchises which were granted by the voters of that city at the recent municipal election. It is understood that Stephen Carver, head of the Portland Trackless Car Company, is preparing to operate lines of jitney buses prescribed in the franchises. Scores of independent jitney men are going out of business in Portland, since they have found it impossible to secure the \$2,500 bonds made necessary by the ordinance which was passed by the voters at the election. Jitneys and "for hire" cars have until Aug. 1 to produce the \$2,500 bond which each is required to deposit with the city under the jitney bonding ordinance. If the bond is not filed by Aug. 1 the license will be revoked. The bonding provision applies to all autos in the city which operate for hire.

**One Auto for Every Twenty-nine Persons.**—Iowa led the United States in 1916 in the number of motor cars registered in proportion to population. In that State there was one car for every eleven persons. California was a close second with one car to every twelve inhabitants. Nebraska and South Dakota had one for every thirteen. Arkansas could show but one for every 116. The average for the United States is one car for every twenty-nine persons, according to figures presented by the Office of Public Roads, United States Department of Agriculture, in Circular 73, "Automobile Registrations, Licenses and Revenues in the United States, 1916." The New England States were more uniformly supplied with motor cars than any other section. They averaged one car to about every twenty-seven persons. The prosperous corn belt states also showed a fairly uniform distribution of cars. The South, where the roads are not so good, had relatively fewer cars in proportion to population.

## Personal Mention

**E. L. Howell** has been made claim agent for the Salt Lake & Utah Railroad, Salt Lake City, Utah, to succeed E. H. Craddock.

**J. M. Pogue**, formerly assistant secretary and assistant treasurer of the Ohio Electric Railway, Springfield, Ohio, has been appointed purchasing agent of the company, succeeding George L. Mayer, resigned. Mr. Pogue has been with the company for many years.

**George L. Mayer**, purchasing agent of the Ohio Electric Railway, Springfield, Ohio, has resigned to take charge of the Chicago office of Joseph Joseph & Brothers Company, Cincinnati, Ohio, scrap dealers. Mr. Mayer has been with the Ohio Electric Railway as storekeeper and purchasing agent for more than ten years.

**R. J. Byrum**, office manager of the Wheeling (W. Va.) Traction Company, has resigned from the company to become connected with the contracting firm of R. L. Byrum & Sons, Wheeling. Mr. Byrum was connected with the company for twelve years and for two years had been principal assistant to George O. Nagle, formerly vice-president and general manager of the company.

**Clyde Taylor**, general counsel for the Kansas City (Mo.) Railways, has been elected vice-president of the company and will act as president during the absence of Col. P. J. Kealy, president of the company, at camp and in the war. Chester C. Smith, assistant to the president, will take Colonel Kealy's place on the board of control, and will perform certain other duties that formerly devolved upon the president. Colonel Kealy has been granted a leave of absence for an indefinite period, dating from July 14, 1917.

**William Kingdon**, for the last ten years assistant superintendent of the lines of the Connecticut Company at Stamford, has been promoted to the position of superintendent there to succeed J. B. Potter, who, as noted in the *ELECTRIC RAILWAY JOURNAL* for June 30, has become connected with Sanderson & Porter. Mr. Kingdon has been engaged in electric railway work for twenty-three years. He was with the Worcester (Mass.) Consolidated Street Railway for thirteen years before he accepted the appointment to the Connecticut Company at Stamford.

**Karl D. Klemm**, president of the Kansas City, Kaw Valley & Western Railway, Bonner Springs, Kan., has been elected colonel of the Second Missouri Field Artillery, a new regiment which he has recently assisted in organizing to war strength of six batteries. Colonel Klemm was promoted from captain to major of one of the batteries only a week before he was elected colonel. He has had a long experience, however, in military work. He was graduated from West Point in 1905, and has served in the Philippines, where during a part of his stay he held the civil office of president of a district. He was also stationed at Fort Snelling, Minn., for some time. He has had considerable cavalry experience. His service in the regular army ceased in 1911. Mr. Klemm then went to Kansas City. He has since devoted his time to building the interurban railway which was completed and put in operation three years ago between Kansas City and Bonner Springs, and is now operating to Lawrence, Kan. It is likely that Colonel Klemm will be ordered to concentration camp with his regiment about Aug. 4.

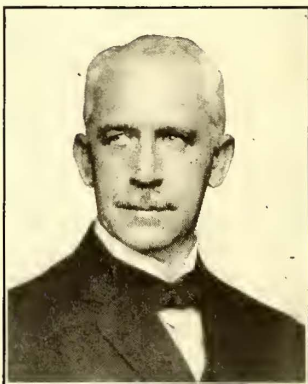
**M. G. Stratton**, whose appointment as general manager of the Shore Line Electric Railway, Norwich, Conn., was noted in the *ELECTRIC RAILWAY JOURNAL* of July 7, has been connected since 1913 with Sanderson & Porter, New York, N. Y., for whom he was engaged on valuation reports and the management of public utility properties, including the New England Investment & Security Company at Springfield and Worcester, Mass. Mr. Stratton is forty-seven years of age. He took the electrical engineering course at Cornell University as a member of the class of 1891. In 1891 and 1892 he was connected with the New York Edison Company in charge of the operation of the Twenty-



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sixth Street station and on outside construction. For four years following this he was superintendent of the electric department of the Lawrence (Mass.) Gas Company, and from 1896 to 1900 was superintendent of the meter department and assistant to the electrical engineer of the Narragansett Electric Lighting Company at Providence, R. I. For one year following this he was superintendent of the Mobile Light & Railway Company, Mobile, Ala., and from 1901 to 1903 was superintendent of the meter department of the Lachine Rapids Hydraulic Company at Montreal, Que. From 1903 to 1906 Mr. Stratton was connected with the Bay State Street Railway, Boston, Mass., as assistant to the electrical engineer in charge of the rehabilitation of the power houses of the Boston & Northern Street Railway and the construction of the Quincy power house and the sub-station and transmission lines of the Old Colony Street Railway. From 1906 to 1908 he was engineer with the Stone & Webster Engineering Corporation at Boston, Mass. During 1908 and 1909 he was engaged in a special investigation and on a report for the Buffalo (N. Y.) General Electric Company. From 1909 to 1911 he also investigated special engineering matters for the Bay State Street Railway. From 1911 to 1913 Mr. Stratton was general manager of the Northumberland County Gas & Electric Company at Sunbury, Pa. Following this began his connection with Sanderson & Porter, from which firm he has gone to the Shore Line Electric Railway.

**George H. Harries**, for years prominent as a public utility executive, has received a leave of absence from the various corporations with which he is connected in order to resume military service. He is now in command of the Nebraska National Guard, at Fort Crook, having been commissioned brigadier general by Governor Neville, as of June 25, and will be recommended by the War Department for similar rank in the regular army. Governor Neville in selecting General Harries to lead the three Nebraska regiments expressed the hope that when they become a part of the regular army on Aug. 5, by application of the draft, General Harries would continue to command the brigade. The Nebraska troops will be trained and brought to war strength at Deming, N. M. Since 1912 General Harries has been a vice-president of H. M. Bylesby & Company. He is also president of the Louisville Gas & Electric Company, the Omaha Electric Light & Power Company, the Arkansas Valley Railway, Light & Power Company and an officer in a number of other large utility organizations. During the past several months General Harries has been engaged in work for the Council of National Defense and War Department, having placed himself at the disposal of the government when war was declared on Germany. The son of an officer in the British army, born in Wales in 1860, General Harries came to the United States when a boy and served as a scout under Generals Miles and Crook in frontier wars with the Indians. He was a member of the government's commission settling the grievances of the Sioux Indians in 1891. In 1888 he went to Washington, D. C., as a newspaper reporter, later becoming president of the Metropolitan Railroad in that city. From 1897 to 1917 he was brigadier general in command of the military and naval forces of the District of Columbia, retiring as major general May 26 of the latter year. During the Spanish-American War he served as colonel of the First District of Columbia Infantry, United States Volunteers, participating in the siege of Santiago, Cuba. He has been a member of the War Department board on the promotion of rifle practice since organization. He has been president of the Association of Edison Illuminating Companies, president of the American Electric Railway Association and national commander of the Order of Indian Wars, composed of army officers.



G. H. HARRIES

## Construction News

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

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

### RECENT INCORPORATIONS

**Boise (Idaho) Railway.**—Incorporated as successor to the Boise Railroad Company, Ltd. Capital stock, \$200,000. Officers: David Miller, president; W. E. Pierce, vice-president, and Thomas R. Hamer, secretary and treasurer.

**\*Iowa & Omaha Interurban Railway, Council Bluffs, Ia.**—Articles of incorporation have been filed by the Iowa & Omaha Interurban Railway to construct and operate electric or steam railroads, furnish electricity or steam for power purposes and to control telephone and telegraph lines in connection with the road. Capital stock, \$25,000. Officers: E. A. Wickham, president; J. P. Greenshields, vice-president; E. F. Danahey, secretary, and J. J. Wickham, treasurer.

**\*San Antonio (Tex.) Public Service Company.**—Incorporated in Texas to take over and operate the properties of the San Antonio Traction Company and the San Antonio Gas & Electric Company, both controlled by the American Light & Traction Company. Capital stock, \$4,700,000. The new company is also authorized in its charter to construct a system of interurban electric railways out of San Antonio, and it is reported will build a line between San Antonio and Austin, about 85 miles. The San Antonio & Austin Traction Company has been promoting the construction of this proposed road for some time past. The directors of the San Antonio Public Service Company are Emerson McMillin, New York, chairman of the board of directors of the American Light & Traction Company; A. P. Lathrop, New York; W. B. Tuttle, R. C. Jones, Walter P. Napier, S. J. Brooks and Howard Templeton, San Antonio.

### FRANCHISES

**Santa Ana, Cal.**—The Pacific Electric Railway has received a fifty-year franchise from the Board of Supervisors of Orange County to construct a line on Lyon Street, Williams Street, Glen Avenue and Sixth Street, from Glen Avenue to the easterly line of D Street or State Highway, Santa Ana.

**Syracuse, N. Y.**—The improvements of the service extended in Syracuse by the New York State Railways have been made possible through the approval by the Public Service Commission for the Second District of New York of the franchises granted that corporation by the Common Council of Syracuse on April 23, and approved by the Mayor and Board of Estimate and Apportionment of that city. The improvements comprise minor changes in the track system to facilitate the operation of the new single-end cars.

**Smithville, Tenn.**—The County Court of DeKalb County has granted the Nashville & Eastern Electric Railway a two years' extension of time from Dec. 31, 1917, on its franchise in which to construct its line from Lebanon to Smithville. [Sept. 9, '16.]

**Dallas, Tex.**—The City Commission of Dallas has granted the Dallas Northwestern Traction Company and the Dallas Southwestern Traction Company three months' extension of time on their franchise in which to begin construction on their proposed lines from Dallas to Slidell and from Dallas to Cleburne. E. P. Turner, Dallas, president. [July 7, '17.]

**El Paso, Tex.**—The El Paso Electric Railway has asked the City Council for a franchise to construct an extension on Campbell Street from Hague Street to Kern Place.

**Petersburg, Va.**—The Petersburg & Appomattox Railway has asked the City Council of Petersburg for a franchise to construct an extension from the present main line at the eastern limits of the city along East Bank, East and Bollingbrook Streets to Second Street.



## TRACK AND ROADWAY

**Northern Alabama Traction Company, Florence, Ala.**—Surveys are being made of this company's proposed line from Florence to Huntsville, with a branch line to Lexington, and it is expected that construction work will be begun about Sept. 1. The Central Construction Company of Indianapolis, Ind., has the contract to build the road and agrees to have it completed and ready for operation by October, 1919. Thurston H. Allen, Huntsville, general manager. [March 17, '17.]

**Rockford (Ill.) City Traction Company.**—It is reported that this company will construct an extension on Seventh Street from Twenty-third Avenue to Harrison Avenue connecting with the line of the Chicago Milwaukee & Gary Railroad.

**Union Traction Company of Indiana, Anderson, Ind.**—This company is reconstructing its line on Third Street from Madison Avenue to Sycamore Street, new 80-lb. rail being used.

**Gary & Southern Traction Company, Crown Point, Ind.**—Work will be begun at once by the Gary & Southern Traction Company on the construction of an extension between Lattaville Junction and Griffith.

**Boston (Mass.) Elevated Railway.**—The Public Service Commission of Massachusetts has ordered the Boston Elevated Railway to build a double-track surface line in Pleasant Street between Washington Street and the southerly entrance of the Tremont Street subway, in order to provide for faster service between the South Boston district and the retail shopping center of the city.

**Duluth (Minn.) Street Railway.**—Work has been begun by the Duluth Street Railway reconstructing its tracks on West Third Street between Twenty-first and Twenty-eighth Avenues, the old rails being replaced with a heavier type of rail.

**United Railways, St. Louis, Mo.**—This company will construct an extension of its Hamilton Avenue line west on Delmar Boulevard to Skinker Avenue, to the north line of Forest Park, and west on the Clayton car tracks to DeMun Avenue.

**Brooklyn (N. Y.) Rapid Transit Company.**—Work has been begun by the Brooklyn Rapid Transit Company on the construction of an extension on Metropolitan Avenue and Dry Harbor Road, Middle Village, to Jamaica Avenue, Richmond Hill.

**Buffalo & Lake Erie Traction Company, Buffalo, N. Y.**—Permission has been granted to the Buffalo & Lake Erie Traction Company by the City Council of Dunkirk to tear up a portion of the lines of the Dunkirk Street Railway, a subsidiary line, which holds the franchise for the system known as the belt line in Dunkirk. The company will continue to operate the line in East Lake Road to the city line.

**Cincinnati (Ohio) Traction Company.**—At a special meeting on July 13 the City Council of Cincinnati, Ohio, ordered extensions to four of the Cincinnati Traction Company's lines. Their construction will mean the expenditure of more than \$250,000 before the end of the year. They are as follows: Warsaw Avenue line from the present terminus out Glenway Pike to Covedale; Sixth Street across the Hopple Street viaduct; McMicken to Dismuth Avenue, and North Norwood to Pleasant Ridge and Kennedy Heights.

**Ohio Electric Railway, Springfield, Ohio.**—The line of the Ohio Electric Railway between Springfield and Dayton runs directly through the ground which has been selected for the Wilbur Wright Aviation Field. The section of the electric line within the camp is to be removed and 3½ miles of new track laid around the border of the camp. This construction work is already well under way, the right-of-way being moved almost a mile at the maximum point and increasing the length of the line about ½ mile. The new line is being laid with 70-lb. rail on an 18-ft. gravel ballast roadbed, with concrete culverts and first-class construction throughout.

**Mahoning Valley Railway, Youngstown, Ohio.**—The New Castle Electric Street Railway and the Mahoning Valley Railway will together pay to Lawrence County 30 per cent of the cost of the construction of the new Mill Street bridge

over Neshahannock Creek. Under the terms of the agreement the bridge is to cost not more than \$66,000, and of this amount the two companies will pay \$19,000. This amount will go into the construction of the bridge and will be exclusive of the trolleys, tracks and extra equipment for the use of the company. The bridge will be 54 ft. wide, with allowance for a double-track system.

**Ardmore (Okla.) Railway.**—Plans are being developed by the Ardmore Railway for the construction of a system of electric interurban lines covering the entire Healdton, Fox and other producing oil fields. It is proposed to have the lines center at the new town of Healdtown. The plan contemplates the inauguration of both freight and passenger service on these lines.

**Johnstown (Pa.) Traction Company.**—Work will soon be begun by this company double-tracking its line on Baumer Street.

**Wisconsin Interurban System, Madison, Wis.**—It is reported that negotiations are under way with the receiver of the Janesville & Madison Traction Company for the purchase by the Wisconsin Interurban System of the 2½ miles of track between Fair Oaks and the town hall of Blooming Grove. J. E. Jones, Madison, president. [July 14, '17.]

## SHOPS AND BUILDINGS

**Public Service Railway, Newark, N. J.**—This company has filed plans for the construction of four one-story carhouses at the Passaic Wharf, each about 50 ft. x 145 ft., to cost \$23,600.

**Northern Ohio Traction & Light Company, Akron, Ohio.**—This company is building a new freight house in Tuscarawas Street W., just west of the company's carhouse.

**Southern Cambria Railway, Johnstown, Pa.**—This company reports that within the next three months it will place contracts for the construction of a small carhouse at Ebensburg to accommodate lay-over cars at the Ebensburg terminal.

## POWER HOUSES AND SUBSTATIONS

**Pine Bluff (Ark.) Company.**—This company reports that within the next six weeks it expects to purchase one 2500-kw. turbo-generator and two 600-hp. boilers.

**Havana Electric Railway, Light & Power Company, Havana, Cuba.**—This company reports that it is erecting a new substation to contain two 1000-kw. rotaries and another to contain three 500-kw. rotaries. The purchase of a new 25,000-kw. turbine generator for the power plant has been authorized.

**Georgia Railway & Power Company, Atlanta, Ga.**—Plans are being prepared by the Georgia Railway & Power Company for the construction of a sixth unit at the Tallulah Falls hydroelectric plant, increasing the output by 12,000 kw., at a cost of about \$330,000.

**Washington, Baltimore & Annapolis Electric Railway, Baltimore, Md.**—Plans are under way by this company for an electric transformer station, from which will be furnished electric light and power for the military encampment at Admiral.

**Vicksburg Light & Traction Company, Vicksburg, Miss.**—A report from the Vicksburg Light & Traction Company states that the company is installing a 1250-kw. G.E. turbine and an Alberger condenser in its power plant.

**Morris County Traction Company, Morristown, N. J.**—Rotaries and other equipment are being installed by the Morris County Traction Company in its new substation at Mine Hill. The New Jersey Power & Light Company furnishes the service at high voltage for step-down and distribution by the traction company.

**Monongahela Valley Traction Company, Fairmont, W. Va.**—Construction will soon be begun by the Monongahela Valley Traction Company of a new power plant at Rivesville. Contracts for the equipment and the bulk of the construction have been let.

**Wisconsin Traction, Light, Heat & Power Company, Appleton, Wis.**—The power house of the Wisconsin Traction, Light, Heat & Power Company was recently damaged by fire, caused by lightning, to the extent of about \$5,000.



# Manufactures and Markets

Discussions of Market and Trade Conditions for the Manufacturer, Salesman and Purchasing Agent  
 Rolling Stock Purchases      Market Quotations      Business Announcements

## Difficulties of the Railway Supply Man Business to Be Had if Railways Were Able to Buy— Relief Expected from Railways Near Army Cantonments

"The business is there if the railways had the wherewithal to buy" are the words which an Eastern railway supply man used in summing up the present situation as regards the accessory business. Continuing, he said: "The dollars which they use in making purchases have been cut in two, but the nickels which they receive for fares have remained the same. At the present time many railways are petitioning for higher fares, and in case these are granted the railways will immediately be in a position to purchase much-needed supplies." As one railway man expressed it, "We are not buying anything beyond that which is absolutely necessary," and this holds true in a good many instances. However, thirty-two army cantonments for the regular army and the National Guard are being constructed in different parts of the United States, and the railways in cities near these camps are in the market or will be in the market for additional equipment. Some of the railways are buying new cars, while others are rebuilding or remodeling old cars, and this, of course, makes a market for a number of accessories. The following suggestions are made by a well-known agent of accessories who is well qualified to comment on this matter:

### RAILWAY OFFICIALS OFTEN WASTE SALESMEN'S TIME

If anything at all can be done to help reduce selling costs it can be done by many railway officials, and the railways will be the ones to benefit. Very often the officials actually want to do business, but instead they simply waste a lot of time. On a certain deal, three days were spent on the railway property by a manufacturer's agent where much less time would have been sufficient. After thoroughly convincing the master mechanic during the first day that the equipment was just what was needed, the matter was put up to the general manager, who was not able for various reasons to give time enough to make a decision or to hear the recommendations of the master mechanic. The deal was finally closed on the third day, when the general manager approached the master mechanic and, calling him by his first name, said, "Well, is this the stuff you need and is it O. K.?" To this the master mechanic answered, "Yes." The general manager then said, "All right, go ahead," or words to that effect, and the deal was closed accordingly.

This is given as an example of many incidents similar in nature which eat into the meager profits of the accessory manufacturer. It is true that the railway men generally mean well, but they often get tied up with other matters and keep the traveling man waiting on account of not realizing the value of the salesman's time. However, when a salesman visits a property, if the railway man and the salesman would get right down to business and finish it, that would be a different matter. With the exception of some parts of the East, traveling expenses have just about doubled for salesmen of most supplies, and delays of the kind mentioned are very discouraging.

It is often the case that a railway supply man representing several lines of equipment will visit a property to talk about a specific order. The salesman may or may not get the order, but any attempts at missionary work on the other lines of accessories are usually frowned upon. The railway executive likes to take up a certain definite proposition and does not care to spend time on any others. If, however, the same official wants information within three or four weeks regarding another accessory, he does not hesi-

tate to tell the railway supply man so, and this may mean another trip out to the property which he had visited probably within a month. In these days of high prices and poor deliveries, the railway executive should be forehanded, and one way of doing this is to get inquiries and delivery quotations while the railway supply man is on the property on every product that he is liable to be interested in within six months.

With a very few exceptions, there is little money to be made in handling repair parts at the present time. It is not uncommon for a railway to write in for perhaps a half dozen repair parts where formerly ten or twelve dozen were ordered. To make up small orders such as the above, it is necessary to set up a machine, and this operation probably will cost more than will be obtained from the whole order.

## Exporters' Contracts Are to Specify Shipping Clauses

Manufacturers Should Quote Delivered Prices—Catalogs with Cable Addresses Needed—Electrical Exports Increasing

In view of the fact that public necessity may in the future require the requisition of vessels by the government, and as this may be done quickly with but little time for adjustment, the Bureau of Foreign and Domestic Commerce has advised that exporters, in making contracts for export, should state in the contracts that shipment is to be contingent on their obtaining shipping space. The bureau also suggests that exporters will save themselves much annoyance and possible claim for damages if a clause is inserted in bills for sale stating that the sale is made subject to the seller's ability to secure an export permit, if such permit is required.

Foreign agents, commercial attachés and consular agents are urging upon American manufacturers the importance of being able to quote delivered prices at the nearest port to which supplies are shipped. It is difficult to imagine the position of the foreign buyer when he attempts to find out what the goods will cost him laid down at some particular port. In almost every case he has few facilities for finding out this information as compared with American firms. Rising freight rates, of course, make this a difficult matter, but there is no question that this information would be of immense value in competing with European firms which have heretofore had the advantage over American salesmen on account of knowing just what goods cost at their destination. Communications recently received assert that a number of directories of American manufacturers have been received, but in no case is the cable address given. It would be useful for the foreign user to know the cable address of manufacturers and merchants, as inquiries are often made by cable.

### ELECTRICAL EXPORTS SHOW LARGE INCREASES

Figures which have been taken from a report compiled by the Bureau of Foreign and Domestic Commerce show that exports of electrical supplies for the month of April, 1917, amounted to \$4,740,995, as compared with \$2,630,169 in April of the previous year. Added to the figures for the three preceding months, the April exports bring the total for the first four months of 1917 up to \$18,379,351, or at an annual rate of over \$55,000,000. During the ten months ended April last the exports of electrical merchandise amounted to \$41,733,199, as compared with \$23,666,267 for the ten months ended April, 1916, and \$15,922,467 for the ten months ended April, 1915.



## Materials Continue to Soar

### Analysis of Costs of Supplies by the Reading Transit & Light Company Shows the Problems Railways Are Facing

This company recently called attention to the great advance in prices of some of the materials necessary in the operation of electric power and railway systems. The latest statement by this company contains a summary of increases in the price of materials used. It follows: "We mentioned coal costing \$200,000 more this year than last and increases of \$80,000 in the annual payrolls of our employees and an advance of 44 per cent in the price of steel rails. But we were merely scratching the surface. Copper wire, electrical machinery and a multitude of other things used in constructing, renewing, repairing, operating and keeping our properties up to the high standard of efficiency which the public demands are costing a whole lot more than they did two years ago. It is also necessary to face the handicap of being compelled to place orders for materials from three months to two years ahead of time of delivery. Some materials can scarcely be procured at any price. Steel car wheels, for instance, have practically disappeared from the market. They were last heard of at \$18 apiece, but for some time it has been impossible to get anybody to quote a price on them. Cast-iron wheels are selling at \$1.80 per 100 lb. on big contracts, compared with \$1.45 two years ago, an advance of about 25 per cent."

#### PRICES PAID FOR MATERIALS AS SHOWN BY FILES

This company has taken figures at random, from its purchasing department, showing the sharp advance in prices of some materials to-day, compared with two years ago. Rails have increased 100 per cent over normal prices. To-day they are quoted at \$55 a ton for delivery a year hence, and for short-time delivery the price is \$75 a ton. Two years ago steel rails were selling at \$38.20, so that what is regarded as the normal price to-day is an advance of 44 per cent. There is an even greater advance in special track work, which means curves, switches and the like, the increase in these materials being fully 200 per cent. Copper that is required in large quantities for repairs to trolley and electric equipment has nearly trebled its normal price. Copper trolley wire is now quoted at 38 cents a pound compared with 17 cents in 1915. Copper feeder cable has advanced from 18 cents to 34¼ cents a pound in the same period.

Motor equipment has advanced over 50 per cent, and following are some of the other advances:

|                                | 1915   | 1917   |
|--------------------------------|--------|--------|
| Track spikes, per 100 lb.      | \$2.15 | \$4.00 |
| Steel trolley poles, each      | 1.10   | 2.10   |
| Track plates, per pound        | 0.02½  | 0.10   |
| Steel and iron bars, per pound | 0.01¾  | 0.04¾  |
| Cotton waste, per pound        | 0.09   | 0.13   |
| Chestnut ties, each            | 0.40   | 0.60   |
| Cement, per bbl.               | 1.29   | 2.09   |
| Gravel, per ton                | 1.25   | 2.00   |
| Crushed stone, per ton         | 0.50   | 1.00   |

## Largest Ball-Bearing Car Order

### 141 One-Man Cars for Stone & Webster Will Have Ball Bearings in Both Motors and Main Journals

In working out the designs for the light-weight one-man cars to be used on a number of its properties, the Stone & Webster Management Association has been consistent in taking advantage of every opportunity to reduce the power consumption and increase the reliability of operation of the cars. As a part of this policy it was decided to equip both the motors and the main journals of these cars with Gurney ball bearings. This type of bearing was chosen because of its great load capacity, and in the case of the journal bearings because it makes special provision for taking care of the thrust loads that are occasioned by going around curves.

This is undoubtedly the largest order ever placed for anti-friction bearings for electric railway service. Another recent large order received by the same company is from the J. G. Brill Company, Philadelphia, Pa., for fifty-four cars for stock.

## Copper Market Quiet

Owing to the uncertainty of the government's action in regard to the price to be paid for the 60,000,000 lb. of copper tentatively arranged for with the copper producers at 25 cents a pound, copper has declined slightly, and is still in a waiting stage. The government has now agreed to pay 75 per cent of the 25 cents a pound as a preliminary settlement, leaving the balance to be adjusted by an investigating committee of the Federal Trade Commission. The copper producers, however, have not accepted the government's offer, and as a result buyers who are known to be in the market for large quantities are still holding off pending a settlement between the producers and the government in order to determine whether the price named will apply to other users of copper. Large producers are not making quotations and it is probable that the market will continue dull until some definite price has been arranged for between the government and the producers.

## Swiss Railways to Purchase Supplies

In connection with the electrification of the Swiss Federal Railways, the government has created a special department, known as Direktion für die Einführung der elektrischen Zugförderung der Schweizerischen Bundesbahnen, Berne, Switzerland. This department, according to a recent report of the Bureau of Foreign and Domestic Commerce, announces that it is prepared to consider proposals for sale and delivery of such electrical material as may be necessary for equipment in connection with this work, and that bids will be received from all countries. A statement by the management shows that large orders for copper wire already have been placed with certain firms in the United States, and that British and German firms are applying for details in order that they may submit offers for supplies and equipment.

## Old Material Prices Drop

With the exception of the drop in copper, influenced largely by the action of the government in regard to the price to be paid for that material, the principal feature of the past week was the heavy decline in old materials. The heaviest reduction was in heavy steel scrap, which dropped from \$40 to \$32 a ton. Railroad wrought iron fell off \$7 a ton, steel car axles \$4, old car wheels \$2, scrap steel rails \$5, and machine shop turnings \$1. As old materials play an important part in steel manufacturing costs, the reaction is not unlikely to have an effect on finished prices. The railways are showing no disposition to sell on account of the present weakness of the market, and there has been very little buying reported.

## Big Demand for Spraying Equipment

According to the Spray Engineering Company, Boston, Mass., sales of its equipment for the month of June were the best in the history of the organization. Inquiries are being received from foreign countries, and recent sales include cooling ponds or equipment for China, Ecuador and Cuba.

In addition to many large domestic orders placed by the steel mills coal companies and other allied industries it has received orders for the following: Minneapolis (Minn.) General Electric Company air washer, capacity 60,000 cu. ft. per minute; United Gas & Electric Company, New Orleans, La., one air washer, capacity 50,000 cu. ft. per minute, and for the Consolidated Gas & Electric Company, Baltimore, Md., the largest washer the company has so far built, having a capacity of 125,000 cu. ft. of air per minute. At the Waterbury (Conn.) station of the Housatonic Power Company a fifty-thousand-dollar spray cooling installation is to be completed within six weeks, and a novel feature of this installation will be the supporting of the spray nozzles by Archbold-Brady structural steel frames 50 ft. over the river edge without supporting piers in the water. This construction was determined upon to avoid difficulties from ice in the neighborhood of foundations.



NEW YORK METAL MARKET PRICES

|  | July 12                        | July 19                        |
|--|--------------------------------|--------------------------------|
| Prime Lake, cents per lb.                  | 30 <sup>3</sup> / <sub>4</sub> | 26 <sup>1</sup> / <sub>2</sub> |
| Electrolytic, cents per lb.                | 30 <sup>3</sup> / <sub>4</sub> | 26 <sup>1</sup> / <sub>2</sub> |
| Copper wire base, cents per lb.            | 36                             | 36                             |
| Lead, cents per lb.                        | 11 <sup>1</sup> / <sub>2</sub> | 10 <sup>1</sup> / <sub>2</sub> |
| Nickel, cents per lb.                      | 50                             | 50                             |
| Spelter, cents per lb.                     | 9 <sup>1</sup> / <sub>8</sub>  | 8 <sup>7</sup> / <sub>8</sub>  |
| Tin, Straits, cents per lb.                | 63                             | 62 <sup>1</sup> / <sub>2</sub> |
| Aluminum, 98 to 99 per cent, cents per lb. | 58                             | 55                             |

OLD METAL PRICES

|   | July 12                        | July 19                        |
|---|--------------------------------|--------------------------------|
| Heavy copper, cents per lb.                     | 27                             | 26 <sup>1</sup> / <sub>2</sub> |
| Light copper, cents per lb.                     | 24 <sup>1</sup> / <sub>2</sub> | 23 <sup>1</sup> / <sub>2</sub> |
| Red brass, cents per lb.                        | 20                             | 19 <sup>1</sup> / <sub>2</sub> |
| Yellow brass, cents per lb.                     | 18                             | 17 <sup>1</sup> / <sub>2</sub> |
| Lead, heavy, cents per lb.                      | 9 <sup>1</sup> / <sub>4</sub>  | 9                              |
| Zinc, cents per lb.                             | 7                              | 6 <sup>1</sup> / <sub>4</sub>  |
| Steel car axles, Chicago, per net ton.          | \$50.00                        | \$46.50                        |
| Old car wheels, Chicago, per gross ton.         | \$38.00                        | \$36.00                        |
| Steel rails (scrap), Chicago, per gross ton.    | \$48.00                        | \$43.00                        |
| Steel rails (relaying), Chicago, per gross ton. | \$59.50                        | \$59.50                        |
| Machine shop turnings, Chicago, per net ton.    | \$20.00                        | \$19.00                        |

CURRENT PRICES FOR MATERIALS

|   | July 12                        | July 19                        |
|---|--------------------------------|--------------------------------|
| Rubber-covered wire base, New York, cents per lb.         | 36 <sup>1</sup> / <sub>2</sub> | 36 <sup>1</sup> / <sub>2</sub> |
| No. 0000 feeder cable (bare), New York, cents per lb.     | 36 <sup>1</sup> / <sub>2</sub> | 36 <sup>1</sup> / <sub>2</sub> |
| No. 0000 feeder cable stranded, New York, cents per lb.   | 33 <sup>3</sup> / <sub>4</sub> | 33 <sup>3</sup> / <sub>4</sub> |
| No. 6 copper wire (insulated), New York, cents per lb.    | 33                             | 33                             |
| No. 6 copper wire (bare), New York, cents per lb.         | 36                             | 36                             |
| Rails, heavy, Bessemer, Pittsburgh.                       | \$38.00                        | \$38.00                        |
| Rails, heavy, O. H., Pittsburgh, per gross ton.           | \$40.00                        | \$40.00                        |
| Wire nails, Pittsburgh, per 100 lb.                       | \$4.00                         | \$4.00                         |
| Railroad spikes, 9/16 in., Pittsburgh, per 100 lb.        | \$5.00                         | \$5.00                         |
| Steel bars, Pittsburgh, per 100 lb.                       | \$5.00                         | \$4.50                         |
| Sheet iron, black (24 gage), Pittsburgh, per 100 lb.      | \$8.35                         | \$8.35                         |
| Sheet iron, galvanized (24 gage), Pittsburgh, per 100 lb. | \$9.55                         | \$9.55                         |
| Galvanized barbed wire, Pittsburgh, cents per lb.         | \$4.85                         | \$4.85                         |
| Galvanized wire, ordinary, Pittsburgh, cents per lb.      | \$4.65                         | \$4.65                         |
| Cement (carload lots), New York, per bbl.                 | \$2.22                         | \$2.22                         |
| Cement (carload lots), Chicago, per bbl.                  | \$2.31                         | \$2.31                         |
| Cement (carload lots), Seattle, per bbl.                  | \$2.60                         | \$2.60                         |
| Linseed oil (raw, 5 bbl. lots), New York, per gal.        | \$1.13                         | \$1.13                         |
| Linseed oil (boiled, 5 bbl. lots), New York, per gal.     | \$1.14                         | \$1.14                         |
| White lead (100 lb. keg), New York, cents per lb.         | 12 <sup>3</sup> / <sub>4</sub> | 12 <sup>3</sup> / <sub>4</sub> |
| Turpentine (bbl. lots), New York, cents per gal.          | 41 <sup>1</sup> / <sub>2</sub> | 40                             |

ROLLING STOCK

Adrian (Mich.) Street Railway is reported to have placed an order for twelve light-weight safety cars.

Cleveland, Southwestern & Columbus Railway, Cleveland, Ohio, is planning to build four new freight trailers.

Long Island Railroad, New York, N. Y., is reported to be in the market for forty motor and twenty-five trailer cars.

Hocking-Sunday Creek Traction Company, Athens, Ohio, has been authorized by the Public Service Commission to purchase two cars.

Pine Bluff Company, Pine Bluff, Ark., is in the market for one 2500-kw. turbo-generator, two 600-hp. boilers and eight small railway motors.

Scioto Valley Traction Company, Columbus, Ohio, is in the market for several second-hand passenger trailers for use in connection with the traffic expected from the military training camp now under construction at Chillicothe, Ohio.

Mason City & Clear Lake Railroad, Mason City, Iowa, noted in the May 19 issue as placing an order for five one-man safety cars with the American Car Company, has specified the following details for this equipment:

|                      |  |                                 |                      |
|----------------------|--|---------------------------------|----------------------|
| Number               | 5  | Fenders                         | Tri-City             |
| Date of order        | June 18, 1917                            | Gears and pinions               | West.                |
| Date of delivery     | Oct. 3, 1917                             | Hand brakes                     | Peacock              |
| Builder              | American Car Co.                         | Heaters                         | Peter Smith Electric |
| Type                 | Light weight safety                      | Headlights                      | Golden Glow          |
| Seating capacity     | 28                                       | Journal boxes,                  |                      |
| Over bumpers         | 30 ft. 9 <sup>1</sup> / <sub>2</sub> in. |                                 | Gurney ball bearing  |
| Over vestibule       | 29 ft. 9 <sup>1</sup> / <sub>2</sub> in. | Lightning arresters             | West.                |
| Width over all       | 8 ft. 0 in.                              | Motors                          | 2 West. 506A, in-    |
| Rail to trolley base | 9 ft. 9 in.                              |                                 | side hung            |
| Body                 | All steel                                | Paint                           | Chicago Varnish Co.  |
| Interior trim        | 1/4 in. oak                              | Sanders                         | Ohio brass           |
| Headlining           | Agasote                                  | Sash fixtures                   | O. M. Edwards        |
| Roof                 | Arch                                     | Seats, style                    | Hale & Kilburn       |
| Air brakes           | Westinghouse                             |                                 | 199-A                |
| Axles                | Hammered steel                           | Seating material                | Rattan               |
| Control              | Type K 10-Q                              | Step treads                     | Feralum              |
| Curtain fixtures     | Rex                                      | Trolley catchers or retrievers, |                      |
| Curtain material     | Pantasote                                |                                 | Ohio Brass           |
| Dest. signs          | E. S. Co.                                | Trucks, type                    | Brill 78M1           |
| Door mechanism       | Safety Car Devices                       | Ventilators                     | Automatic            |
| Fare boxes           | International                            | Wheels                          | 24 in.               |

City of Seattle, Wash., is in the market for eight one-man cars for use on the present municipal railway. The council recently passed an ordinance appropriating \$25,000 toward this order.

Kankakee & Urbana Traction Company, Urbana, Ill., has purchased two interurban cars, one motor and one trailer, from the Wilkes-Barre & Hazleton Railway. Each car is 52 ft. long and has a capacity of 100 passengers.

Washington, Baltimore & Annapolis Electric Railroad, Baltimore, Md., noted in the July 14 issue as being in the market for 100 day coaches for handling troop movements in and out of the government's camp at Annapolis Junction, Md., has purchased fifty-four passenger coaches from the Long Island Railroad for immediate delivery. The company will expend about \$350,000 in extensions, including the grading and laying out of two miles of double track, and the construction of a transformer station for furnishing electric light and power.

Rockford & Interurban Railway, Rockford, Ill., has specified the following details for thirteen vestibuled pay-within cars which are being built for this company by the St. Louis Car Company.

|                          |   |                                 |                                       |
|--------------------------|---|---------------------------------|---------------------------------------|
| Number of cars ordered   | 13                                      | Designation signs               |                                       |
| Name                     | Rockford & Interurban                   | Illuminated                     | St. Louis Car                         |
| Builder                  | St. Louis Car                           | Co.'s box, E. S. Co. mech-      |                                       |
| Type                     | Vestibuled pay-within                   | anism                           |                                       |
| Seating capacity         | 40                                      | Fenders                         | Railway's design                      |
| Weight (total)           | 36,840 lb.                              | Gongs                           | 12 in. bronze pneumatic               |
| Truck centers, length    | 19 ft. 0 in.                            | Hand brakes                     | Ackley                                |
| Length over bumpers      | 41 ft. 4 in.                            | Hand straps                     | Rico sanitary                         |
| Length over vestibule    | 40 ft. 4 in.                            | Heaters                         | Peter Smith No. P-2                   |
| Width over posts         | 8 ft. 2 in.                             | Headlights                      | Crouse-Hinds                          |
| Height, floor to ceiling | 7 ft. 6 in.                             | Journal boxes                   | St. Louis Car                         |
| Sill to trolley base     | 8 ft. 5 <sup>1</sup> / <sub>4</sub> in. | Lightning arresters             |                                       |
| Body                     | Steel sides with wooden superstructure  | Westinghouse                    |                                       |
| Interior trim            | Honduras mahogany                       | Motors                          | West. 532-B, outside hung             |
| Headlining               | 3/16 in. Agasote                        | Paint                           | Murphy ABC                            |
| Roof                     | Turtle deck                             | Registers                       | International R-5                     |
| Underframe               | Steel valve                             | Sandbox with Reliance sand trap |                                       |
| Air brakes               | Westinghouse                            | Sash fixtures                   | O. M. Edwards                         |
| Axles                    | St. Louis Car                           | Seats                           | Cross and longitud-                   |
| Bumpers                  | Rico anti-climbers                      |                                 | inal, Hale & Kilburn                  |
| Cable                    | St. Louis Car                           | Seating material                | Rattan                                |
| Car trimmings            | Bronze                                  | Springs                         | Pittsburgh Steel Spring               |
| Conduits                 | St. Louis Car                           | Step treads                     | Mason                                 |
| Couplers                 | St. Louis Car                           | Trucks, type                    | St. Louis Car                         |
| Curtain fixtures         | Forsyth No. 88                          | Co.'s 106 A maximum traction    |                                       |
| Curtain material         | Pantasote                               | Ventilators                     | Automatic                             |
|                          | No. 77                                  | Wheels                          | 32 in. driver, 21 in. pony, cast-iron |
| Door                     | Hand operated                           |                                 | Special devices. Faraday buzzers      |
|                          | St. Louis Car                           |                                 |                                       |

TRADE NOTES

Cutler-Hammer Manufacturing Company, Milwaukee, Wis., announces the removal of its New Haven office to 962 Chapel Street.

Blaw Steel Construction Company, Pittsburgh, Pa., and the Knox Pressed & Welded Steel Company have consolidated under the name of the Blaw-Knox Company. The personnel of the two organizations will remain unchanged.

Robert E. Rae, for many years with the Western Electric Company, and for the past four years sales manager for Stanley & Patterson, New York, manufacturers of electric signal apparatus and lighting specialties, has resigned from the latter concern.

Anaconda Copper Company, Butte, Mont., has already started construction on a wire and rod mill at Great Falls, Mont., to cost between \$500,000 and \$1,000,000. It will have a capacity of 200,000 lb. of copper rods daily, and about 100,000 lb. of copper wire.

Ray D. Lillibridge, Inc., New York, N. Y., announces that the entire firm are going to "vacation" from Aug. 11 to Aug. 27, except one clerk, who will remain to explain the situation to any one who may call. This plan was followed last year and proved satisfactory to all concerned.

Duquesne Electric & Manufacturing Company, Pittsburgh, Pa., dealer in new and used electrical apparatus and power equipment, has opened a branch office in the Marshall Building, Cleveland, Ohio. William L. Moorehead, vice-president of the company, is in charge of the Cleveland office.

S. G. Swigert, consulting engineer, has reopened an office in Akron, Ohio, having closed his office in Missoula, Mont. Mr. Swigert located and built several of the early suburban



electric railways near Akron, Ohio. Recently he has been engaged in consulting civil and hydraulic engineering in the West. From 1912 to 1916 he was irrigation manager of the Flathead project, United States Reclamation Service.

Walter A. Zelnicker Supply Company, St. Louis, Mo., and affiliated companies are now represented in the Birmingham district by Thomas A. Hamilton, who for the past fourteen years has been connected with Crane Company, prior to which he was superintendent of the East St. Louis plant of the Zelnicker car shops. Mr. Hamilton will be stationed at 1018 Woodward Building, Birmingham, Ala., and will have charge of both buying and selling in the Southeastern district.

General Electric Company, Schenectady, N. Y., announces that it has closed a contract for one 10,000-kw. turbo-generator for the Rochester Railway & Light Company. It is also in receipt of an order for two 2500-kw., 600-volt rotary converters complete with transformers, etc., for the New York Central Railroad Company's electrified division. One of the rotaries will be installed in the Fiftieth Street substation, while the other one has been ordered for the Ossining substation.

Western Electric Company, Chicago, Ill., announces several changes in its sales and warehouse organization. W. H. Quirk has been appointed manager of the company's house at Cincinnati, Ohio. W. L. Sioussat will succeed Mr. Quirk as stores manager in the company's Cleveland house. S. Greenfield of the Philadelphia house will head the sales force of the new Baltimore branch at 425 East Oliver Street. The company will be represented in Charlotte by a warehouse and a sales office at 238 West First Street, with R. H. Boulogny in charge. An office and warehouse has also been opened in New Haven by Tyler L. Holmes at 135 Wood Street.

Richard Russell, manufacturer of the well-known trigger-lock reversible controller fingers, has recently moved into a new factory at Niagara Falls, N. Y. The building is constructed of steel and concrete on a plot 102 ft. x 60 ft. Large storage fireproof vaults for bar copper and finished goods are included in the construction of the building. These are conveniently located for handling raw bar copper for the machine shop and for shipping the finished goods. The machine shop is equipped with the latest automatic machinery for economical and efficient production. Trigger lock reversible controller fingers are now standard on more than 200 electric railways in the United States.

F. H. Tackaberry, the general agent of the American Steel Export Company, sailed from New York City on Saturday, July 7, on the Lamport & Holt steamer Vestris for South America. Mr. Tackaberry will cover a large portion of the Latin-American countries, visiting the following important cities: Rio de Janeiro, Sao Paulo, Buenos Aires, Montevideo, La Plata, Rosario, Valparaiso, Santiago, etc. Primarily, the reason of Mr. Tackaberry's trip will be to collaborate with the company's various agents throughout South America, lending every possible aid and acquainting them more thoroughly with the facilities available at the home office, and also with the market conditions in this country for iron and steel and engineering and contracting.

Chester F. Gailor has been elected president of the Atlantic Welding Company (formerly the Atlantic Welding Corporation), 30 Church Street, New York City. Mr. Gailor has been associated with this company for several years past since he resigned as assistant chief engineer of the United Railways & Electric Company of Baltimore. Previous to his work at Baltimore he was roadmaster of the Connecticut Company at Hartford and prior to that he held positions in other railway companies and with rail welding interests. Mr. Gailor therefore has an unusually well-rounded experience for developing the class of business in which he is now engaged. E. Walter Jansen has been elected treasurer of the company. He has been connected with this company ever since its organization in 1914. Previous to the commercial exploitation of this company's product he spent a considerable period in this country and abroad in laboratory research work involving metallurgical, thermodynamic and static problems entering into rail welding and other metallurgical work.

## NEW ADVERTISING LITERATURE

Corliss Carbon Company, Bradford, Pa., has issued a discount sheet applying to its catalog No. 4.

Laclede-Christy Clay Products Company, St. Louis, Mo.: A wall card warning, "Look Out" for your future delivery inquiries.

V. V. Fittings Company, Philadelphia, Pa.: A bulletin descriptive of four types of safety switches, each containing a high grade slate base and an air-break knife switch.

Westinghouse, Church, Kerr & Company, New York, N. Y.: A bulletin, "A Floor Every Six Days," descriptive of the progress made on a recent building containing a 6000-hp. boiler plant. This reinforced concrete building of the flat slab type of construction was formed and poured at the rate of a floor every six working days.

American Steel Foundries, Chicago, Ill.: A calendar containing a large illustration at the top of each page, depicting the several branches of the steel industry. The arrangement of the calendar is convenient, the current month being in the center of the sheet, while the preceding month is shown above and the succeeding month below.

Oakley Chemical Company, New York, N. Y.: Bulletin No. 8 on Oakite Platers' Cleaner. Contains a description of this company's product which represents a new principle in cleaning by emulsifying oils and greases, thus destroying their adhesive nature by means of a purely physical action. Methods of cleaning, plating, lacquering and tinning are given.

General Electric Company, Schenectady, N. Y.: Bulletin No. 48,900, on CR-9500 automatic solenoid brakes and CR-9500 solenoids, contains interesting data for both a.c. and d.c. solenoid brakes possessing automatic or self-adjusting features. Each brake is a self-contained unit and is usually mounted on the driving shaft or bolted to the floor.

Gold Car Heating & Lighting Company, New York, N. Y.: A booklet on electric thermostatic control of steam heating for all passenger train cars. Describes and illustrates this company's equipment and explains the system of maintaining a predetermined uniform temperature in cars. Also contains diagrams and test data showing the even temperature obtained and the saving effected by application of this equipment.

Railway Utility Company, Chicago, Ill.: A forty-eight-page booklet, "The Solution of the Problem," which is the story of the events which led up to the awarding of a \$200,000 contract by the Chicago Surface Lines to the Railway Utility Company for equipping its cars with this company's "Exhaust" type ventilators. The story of the summary of the problem, its solution attempted, the ventilating problem solved and how tests were made are subjects which will be of interest to all railway equipment men. The last half of this booklet is devoted to the Utility compensating system of natural ventilation and Utility control for street, elevated and interurban cars.

## New Publications

Principles of Economics. By Edward R. A. Seligman, LL.D. Longmans, Green & Company, New York, N. Y. 711 pages. Cloth, \$2.50 net.

This is the seventh edition of a book published originally as recently as 1905. In addition to the seven editions in English, the work has been translated into Russian, Japanese and French. In the present edition the introductory matter has been rewritten. In the body of the book chapters have been added on the control of trusts, labor legislation and labor insurance. Room has also been found for treatment of the federal reserve act. In other respects the discussion and references have been brought down to date. The work has been deservedly popular, and the reading of it in the light of the trend of present-day events should be distinctly profitable, for very important changes in our economic structure would appear to be inevitable. Sections of Professor Seligman's work that particularly deserve the attention of railway men are "International Trade," "Transportation," "Principle of Railway Charges," "Discrimination," "Railway Regulation" and "Socialism and Public Ownership."