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Trolley Express Service in Connecticut and Elsewhere

IN many sections of the country electric railways may be in a position to add to their income, without increasing their expenses proportionately, by doing a high-grade trolley express business. This is a strongly competitive field because the steam railroads and the commercial express companies, as well as the government post-office department, are all engaged in the transportation of merchandise. If the electric railways are to get the business which is legitimately theirs it must be on a basis of superior service and not through rate cutting, which makes the service really unprofitable when all elements of cost are considered. The growth of the business indicates that the circumstances are appreciated, and this growth should be stimulated by the military transportation which is bound to be an important factor of the military operations generally. The work of a number of typical express and freight departments has been described in the columns of the ELECTRIC RAILWAY JOURNAL from time to time, and in the present issue is some information regarding this department of the Connecticut Company. On this property the work is in charge of a man who has been trained in the commercial express business and has but recently come into the electric railway field. He is trying to apply the principles of the express business to the operation of his department, and a recent inspection of all of the important traffic centers on the property by a representative of this paper indicates that his methods are effective. To be sure, the Connecticut Company is very fortunately located for the building up of express service as it ties together with comparatively short lines some of the most prosperous manufacturing communities of the country. Many roads could not support so elaborate an organization. However, the experience of this company should prove in some way suggestive to managers of other properties where express traffic already exists or can be developed.

Another Supporter Gained for Policy of Educating the Public

THE New Jersey Utilities Association has just taken a praiseworthy step in indorsing the policy of educating the public as to the real situation confronting public utilities. The stirring call for action in Professor Conway's address, abstracted on another page, met with instant response at the Atlantic City convention last week. The association unanimously voted to have the address printed in pamphlet form and to urge each member company to include a copy with every

gas and electric light bill sent out next month. In addition, it was agreed by all that utilities must cease being secretive. They must seek publicity, furnishing facts freely and openly and endeavor in every way and at all times to keep their situation and problems constantly before the public. This is in line with one of the stated objects of the new American Electric Railway Association committee of which Mr. Choate is chairman, and shows that the publicity movement is finding converts. Others, we hope and believe, will follow quickly. Indeed, it is not over-sanguine to predict that before a year rolls around, utilities the country over will be actually fighting to get the facts of higher operating costs before the people. A movement of this character, however, as Professor Conway well says, can succeed only in case the companies are entirely frank and truthful. They must convince the public that they are "on the level." At times this may involve unpleasant admissions. We all know that operation cannot be faultless or mistakes unknown. Yet the only policy which will win is a full and frank statement of the unfavorable as well as the favorable facts. The bad features in your case will eventually be probed. Meet them in advance and gain the great advantage of having the public learn the facts rather than a garbled version put out by some ill-informed or insincere and unfair critic.

Pointing Out to the Public the Responsibility of the Commissions

ANOTHER feature of Professor Conway's address which evoked general indorsement from the New Jersey convention was the suggestion that the utilities must see to it that the responsibility for unfair, capricious or short-sighted action on the part of the commissions must be clearly pointed out to the public. The utilities must see that the public understands what unwise decisions will accomplish and must unceasingly point to the evil results after they have accrued. There is nothing sacrosanct about commissions. Perfection of judgment is impossible even with the most learned courts, possessing the advantage of centuries of experience, as codified in the rules of law and the precedents of earlier decisions. The public service commissions are blazing a trail through an uncharted land. They have few precedents and little experience. The construction now placed upon their powers by the higher state courts leaves them practically the sole arbiter as to the facts and the interpretation to be placed thereon. Their power is infinitely greater than that of any minor court. A commission can so phrase its

opinion as to leave a company little chance of a successful appeal. Under these circumstances, the only method of securing any adequate check upon an inefficient commission is through intelligent, fair-minded, constructive criticism of its decisions. Such criticism must largely emanate from the utilities themselves, for they alone are in constant touch with the situation and intimately acquainted with the facts. Criticism of a particular court or commission decision by the unsuccessful litigant is of limited value, but criticism of a policy, as disclosed by a decision or a line of decisions, by all of the utilities after mature deliberation and careful investigation would be of tremendous value. No commission could afford to ignore a well-deserved indictment of this character. A successful democracy is dependent upon the existence of intelligent and fair-minded criticism of the work of the several instrumentalities of government. Even the United States Supreme Court cannot escape this corrective—indeed, it is very unlikely that it would desire so to escape even were it possible. The public service commissions must expect and receive similar treatment. Upon such criticism depends the eventual success of the experiment of regulation of public utilities.

Cut Rate Tickets Are Unjust to Public and Road

IN the discussion which is going on throughout the country concerning the necessity for revising the basis of fares for electric railways, little attention has thus far been given to the cut-rate ticket. It is true that electric railway companies in many instances have endeavored to abolish the sale of strip tickets, such as six for a quarter, as a part of their campaign for higher revenues. The tendency manifested in certain quarters to grant to a company a higher rate for a cash fare, and at the same time largely neutralize the resultant financial advantage by making provision for tickets to be sold at a rate of approximately 5 cents a ride, is most discouraging. Such a practice places a premium upon dishonesty of conductors and largely prevents the company from securing what it is striving for. A relatively small reduction in the average rate of fare for those purchasing tickets—such as the sale of seventeen tickets for \$1, together with a 6-cent cash fare, as in the case of the Connecticut Company—is justifiable. The premium upon dishonesty of conductors is so small that no serious abuse will probably develop, while at the same time no undue burden is placed upon those who, for any reason, do not see fit to invest a dollar in car tickets.

Some companies are compelled by municipal ordinances to sell workmen's tickets, good either on certain cars or on all cars during certain hours of the day, at rates much below the standard fare. This practice was largely copied from Europe, where it originated at a time when the average workman's earnings were very small as compared with present-day American standards. The workman of to-day is well paid. His earnings are frequently in excess of those of clerks

and other office employees. Under such circumstances a special rate for workmen is indefensible as an economic policy, and it is grossly unfair to the company because the cut-rate service must be provided at a time when operation is more expensive than at any other period of the day.

An illustration in point is furnished by the situation of a certain electric railway operating in a mining district. This company has been selling miner's tickets under certain restrictions at the rate of 3 cents per ride. The practice has been one of long standing. The average miner in this district who works steadily is earning about \$35 a week. The mere comparison of the wages earned by these men with those of other workers in the same community exposes the fallacy of a cut rate to this class of rider.

Special rates of fare, such as workmen's tickets, are undemocratic. They are in direct contravention of the spirit of the public service law in every state and constitute a relic of the days in which the average worker's earnings were but a small fraction of what he is making to-day. They are also contrary to the spirit of this country in which nearly every citizen is a workman, and to be capable of useful work and not to perform it is not a badge of honor but of dishonor. If there was ever a necessity for such rates it has long since passed. They should have disappeared with the passes which railways used to issue to politicians and others supposed to be influential in the community. In the general revision of the electric railway charges which is about to occur the companies should make determined efforts to effect the elimination of this most unfair provision.

Help the Country by Hauling Freight

NO doubt, one of the most pressing military and industrial needs of the present day is more transportation, particularly of freight. It is well known that the steam railroads are congested, but we have not yet reached the maximum demand on our transportation systems. When the munitions and other supplies now being manufactured for the use of our troops abroad come to be shipped in increasing volume, as they will be as more troops cross the Atlantic, our internal system of transportation will have an even greater burden than at present to bear. This is where the electric railway companies can and should give practical help. To assist in this work is the purpose of the American Association committee on military transportation, whose meeting in Washington last week was mentioned in our issue of Oct. 27.

To get the maximum of results, every agency capable of efficient service in interior transportation will have to be utilized in the kind of freight transportation for which it is best fitted. Necessarily a great deal of the haulage required by the military authorities will be through traffic to the seaboard, but this can be undertaken by the steam railroads to better advantage if the electric railway lines will take over some of the short-

haulage business, especially that which otherwise would have to pass through large city freight terminals.

Much has already been done in the way of cataloging and charting the facilities for electric railway freight transport by the American Electric Railway Association and the Central Electric Railway Association, so that the ground work has been laid. But the railways themselves must realize their responsibilities in the matter, both to advance the general plan and to develop the possibilities on their individual systems. The truth is that most companies have so long ignored these that it is not surprising that shippers and the public in general should also be largely unaware of the advantages of electric railway freight transportation and should think first of motor trucks as a supplement to the steam railroads.

Undoubtedly the motor truck has an important place in the field of freight haulage. There is a dividing point, however, as regards distance where haulage on highways by gasoline power is less economical than haulage on rails with coal as the primary power. This point varies with the number of transshipments necessary in the rail transportation, the condition of the highways, the cost of fuel, maintenance, etc., for each motive power, as well as other factors. But under average conditions we believe that electric railways should be seriously considered as against the motor truck for all distances exceeding about 10 miles, and often will be more economical than the motor truck for distances less than that. The possibilities of electric railway freight transportation are shown by some facts in this issue about what has been done in Connecticut, as well as by the package express business about Cleveland, Detroit and a number of other cities of the Central States.

A special opportunity for electric railway freight transportation is now being afforded by the cantonments located in different parts of the country. Many of them are in close proximity to cities from which they must obtain the greater part of their supplies. Most of them have temporary steam railroad sidings entering the cantonment, but the commissary requirements of an organization of 20,000 to 40,000 individuals are so great that some other system or several systems could well supplement any service which the steam railroads can put in temporarily. This is especially true with regard to the receipt of provisions, because, with its quicker service, an electric road could often carry meat, fruit, milk and other perishable goods from cities to cantonments without the necessity of refrigeration.

In our opinion two things are necessary for the further development of electric railway freight haulage under the present conditions. (1) Each electric railway company should study how best it can undertake this work and what changes in its equipment or extensions of its lines are necessary and should then make an effort to develop its own freight business. (2) The association should co-operate with this work, especially to bring the possibilities of electric railway freight transportation to the attention of the War Department and assist different companies to secure freight and extension rights where they are necessary.

Avoid Half-Hearted

Measures with One-Man Cars

WHEREVER a discussion arises on the merits of one-man cars, as at the Oct. 26 meeting of the New England Street Railway Club, it is brought out that the revolutionary difference between the automatic and manual types of one-man cars is not yet as clear to all railway operators as it should be. To talk about one-car stub or shuttle lines is one thing; to talk about services from ten minutes down to five minutes or less is quite another thing. One-man cars of automatic type were not invented to handle one-tenth of 1 per cent of the car-miles on a system, but to handle a large enough proportion of the car-miles to make a real difference in the company's finances. In fact, within certain limits the automatic type is capable of handling all the car-miles of most electric roads.

Therefore, it is a needlessly half-hearted policy to initiate one-man car operation on the routes that are of least importance and to use for them slightly rebuilt cars that have no attractions for either the car operator or the car user. The place to initiate one-man operation is on a line of real revenue value, and the cars to do it with should have all the accessories that are necessary to insure safety and to make the schedule speed appreciably excel the service superseded. To follow the policy of playing around the fringes is simply to waste precious time and to create a natural prejudice against the extension of poorly-camouflaged cars to the through routes. In the now classic Fort Worth case, the Northern Texas Traction Company boldly selected one of its hardest lines for the inauguration of safety car service, and car men and the public approved this choice so heartily that more equipment of the same type were recently demanded by long-distance telephone!

The greater equipment complexity of the automatic type one-man car is no more a valid objection than is the complexity of the air brake or of indirect control as compared to hand brakes and direct control. Every function transferred from the man to the device naturally increases the complexity of the device, but that greater complexity is justified if the functions so transferred—as braking, sanding, door opening and door closing—are carried out with greater speed and certainty than was possible by hand. It is immaterial whether it does or does not cost two or three times as much to maintain such automatic equipment because the increased revenue value of the car is far more important than a few dollars more for maintenance.

To conclude: This is no time for half-way measures or for half-way cars. Better do one line at a time and do it right than fuss with home-made hand-operated equipment that cannot meet such fundamental conditions of the new electric railway operation as high rate of acceleration, high rate of braking, pneumatic door and step control, normal and emergency safety interlocking, low steps, cross-seating, accurate time point running and headways which are short enough to eliminate competition and to create as well as hold the patronage of the public.



CONNECTICUT COMPANY EXPRESS TRAFFIC—TEAM SIDE OF NEW HAVEN TROLLEY EXPRESS STATION

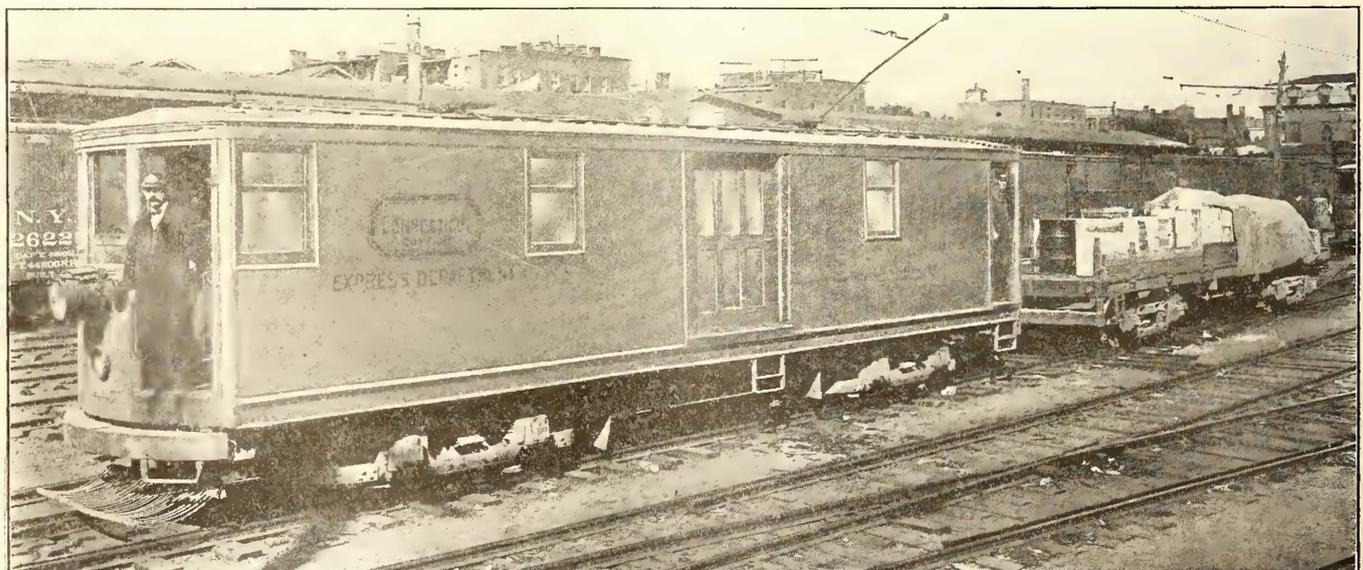
Trolley Express Service in a Busy Industrial Community

The Connecticut Company Has Built Up an Express Business Along Modern Lines, Utilizing as Far as Possible the Experience of Express Companies in Making Its Service Attractive and Profitable

IN common with many other electric railway systems having interurban lines the Connecticut Company has for many years been developing its freight and express business with a view to making a reasonable profit and providing a proper share of the fixed charges on the company's investment. The company's property is favorably situated for express traffic, as it is in a section closely dotted with prosperous manufacturing communities. The activities of the section were greatly stimulated by the European war, and these activities have been increased by the participation of the United States in the conflict. With its nearly 700 miles of track the company covers and connects New Haven, Hartford, New Britain, Waterbury, Bridgeport, Ansonia, Nor-

walk, Stamford, Middletown and numerous less important cities and villages. A circle 50 miles in radius will cover practically all of the cities which require extensive express service, which indicates the compactness of the territory from the transportation standpoint.

In its freight and express business the company is giving not only the regular service covered by timetables, but is also developing a number of special services for individual industries. In the regular express work twenty-eight double-truck box motor cars and nine double-truck flat motor cars are employed, and there are also twenty-four dump cars for carrying sand, gravel, broken stone, etc. An example of special service is in transporting concrete for use in a road-building



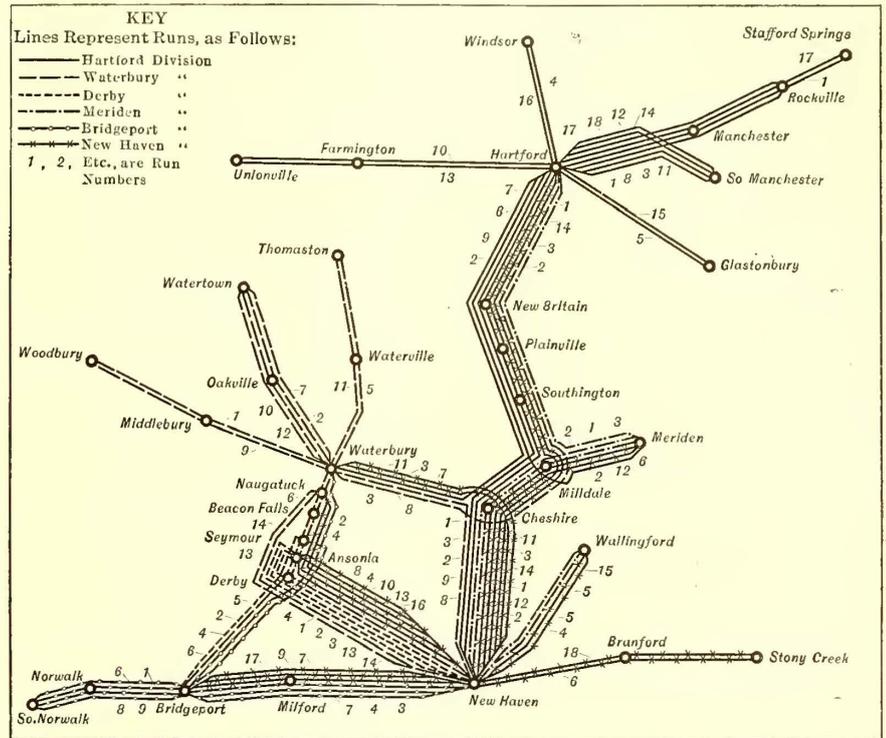
CONNECTICUT COMPANY EXPRESS TRAFFIC—TYPICAL EXPRESS CAR AND TRAILER

operation carried out this fall. The contractor equipped with bins the concrete-carrying car shown in one of the illustrations on page 804, and the railway company undertook to haul it back and forth between the mixing plant and the job in the limited time permissible with mixed concrete. The company was put to no extra investment expense in this case. On this same job the sand and stone for the concrete were received at the railway company's wharf in New Haven, loaded by derrick from the barges to the dump cars, and transported to the mixer, the railway having a complete equipment for such service. The railway thus performed for the contractor several of the most important elements of his contract, leaving him to concentrate attention on the mixing and placing of the concrete.

Another example of such service is the furnishing of transportation between two parts of the plant of the Chase Rolling Mill Company in Waterbury. This company has two yards, separated about 2 miles, between which much material must be carried. With little new construction the Connecticut Company was able to furnish direct connection between the yards and has done a satisfactory business over the "Chase Rolling Mill Branch." On another part of the system is a large peach orchard. By furnish-

ing special fast service to this industry it has been possible to deliver peaches in fine condition and a large seasonal traffic has been developed.

At present there are thirty-five stations to and from which regular service is given, located as shown in the accompanying diagram of runs. Merchandise is also, of course, picked up along the routes. At some points



CONNECTICUT COMPANY EXPRESS TRAFFIC—DIAGRAM OF EXPRESS CAR RUNS

HARTFORD DIVISION

Run No.	Leave	Arrive	Miles
1	Hartford 7:25 A.M.	Stafford Springs..... 11:00 A.M.	29.89
*2	Hartford 8:00 A.M.	New Haven 3:00 P.M.	42.97
3	Hartford 8:00 A.M.	So. Manchester 8:45 A.M.	8.57
4	Hartford 9:30 A.M.	Windsor-Rainbow 11:00 A.M.	6.68
5	Hartford 9:55 A.M.	So. Glastonbury 11:30 A.M.	6.12
6	Hartford 10:00 A.M.	Meriden 2:00 P.M.	29.48
*7	Hartford 12:00 M.	Waterbury 5:00 P.M.	37.95
8	Hartford 2:25 P.M.	Rockville 4:00 P.M.	17.18
*9	Hartford 3:00 P.M.	New Haven 9:00 P.M.	42.97
10	Hartford 3:55 P.M.	Unionville 5:00 P.M.	13.24
11	Hartford 4:00 P.M.	So. Manchester 4:45 P.M.	8.57
12	So. Manchester 6:15 A.M.	Hartford 7:00 A.M.	8.57
13	Unionville 8:00 A.M.	Hartford 9:00 A.M.	13.24
14	So. Manchester 9:15 A.M.	Hartford 10:00 A.M.	8.57
15	So. Glastonbury 12:00 M.	Hartford 1:00 P.M.	6.12
16	Windsor-Rainbow 1:00 P.M.	Hartford 2:00 P.M.	6.68
17	Stafford Springs 12:00 M.	Hartford 2:30 P.M.	29.89
18	Rockville 5:00 P.M.	Hartford 6:30 P.M.	17.18

WATERBURY DIVISION

1	Waterbury 7:30 A.M.	Woodbury 8:30 A.M.	12.38
2	Waterbury 8:45 A.M.	Watertown 9:30 A.M.	5.13
*3	Waterbury via Chesbire	10:30 A.M. Hartford 3:00 P.M.	37.95
4	Waterbury via Derby	10:45 A.M. New Haven 4:00 P.M.	29.82
5	Waterbury 12:00 M.	Thomaston 1:15 P.M.	10.10
6	Waterbury 3:30 P.M.	Bridgeport 9:00 P.M.	34.02
7	Waterbury 4:00 P.M.	Watertown 4:45 P.M.	5.13
8	Waterbury via Chesbire	6:30 P.M. New Haven 8:30 P.M.	24.59
9	Woodbury 9:30 A.M.	Waterbury 11:30 A.M.	12.38
10	Watertown 9:45 A.M.	Waterbury 10:30 A.M.	5.13
11	Thomaston 3:00 P.M.	Waterbury 4:00 P.M.	10.10
12	Watertown 5:00 P.M.	Waterbury 5:30 P.M.	5.13
13	Naugatuck 9:00 A.M.	New Haven 11:00 A.M.	22.27
14	Naugatuck 4:00 P.M.	New Haven 6:30 P.M.	22.27

DERBY DIVISION

1	Ansonia 11:00 A.M.	New Haven 2:30 P.M.	11.15
2	Ansonia 5:30 P.M.	New Haven 6:30 P.M.	11.15
3	Ansonia 6:30 P.M.	New Haven 7:30 P.M.	11.15
4	Seymour 3:30 P.M.	Bridgeport 7:00 P.M.	20.03

*Crews change at New Britain.

MERIDEN DIVISION

1	Meriden 8:15 A.M.	New Haven 10:00 A.M.	24.45
2	Meriden 3:00 P.M.	Hartford 7:00 P.M.	29.48
3	Meriden 6:15 P.M.	New Haven 8:30 P.M.	24.45
4	Wallingford 9:15 A.M.	New Haven 10:30 A.M.	14.08
5	Wallingford 5:00 P.M.	New Haven 6:15 P.M.	14.08

BRIDGEPORT DIVISION

1	Bridgeport 5:00 A.M.	So. Norwalk 9:00 A.M.	16.34
2	Bridgeport 6:00 A.M.	Waterbury 10:30 A.M.	34.02
3	Bridgeport 8:00 A.M.	New Haven 11:00 A.M.	22.25
4	Bridgeport 11:30 A.M.	New Haven 2:00 P.M.	22.25
5	Bridgeport 11:30 A.M.	Seymour 3:00 P.M.	20.03
6	Bridgeport 2:30 P.M.	So. Norwalk 6:00 P.M.	16.34
7	Bridgeport 6:30 P.M.	New Haven 9:00 P.M.	22.25
8	So. Norwalk 6:00 A.M.	Bridgeport 10:00 A.M.	16.34
9	So. Norwalk 2:30 P.M.	Bridgeport 7:30 P.M.	16.34

NEW HAVEN DIVISION

*1	New Haven 4:00 A.M.	Hartford 10:00 A.M.	42.97
2	New Haven 4:00 A.M.	Meriden 6:15 A.M.	24.45
3	New Haven via Chesbire	5:00 A.M. Waterbury 7:30 A.M.	24.59
4	New Haven 5:00 A.M.	Naugatuck 7:30 A.M.	22.27
5	New Haven 6:50 A.M.	Wallingford 8:00 A.M.	14.08
6	New Haven 8:00 A.M.	Stony Creek 11:00 A.M.	14.97
7	New Haven 8:00 A.M.	Bridgeport 11:00 A.M.	22.25
8	New Haven 9:00 A.M.	Ansonia 10:30 A.M.	11.15
9	New Haven 11:00 A.M.	Bridgeport 2:00 P.M.	22.25
10	New Haven 12:30 P.M.	Naugatuck 3:30 P.M.	22.27
11	New Haven via Chesbire	1:00 P.M. Waterbury 3:00 P.M.	24.59
12	New Haven 1:00 P.M.	Meriden 3:45 P.M.	24.45
13	New Haven 1:00 P.M.	Ansonia 3:00 P.M.	11.15
*14	New Haven 1:30 P.M.	Hartford 6:30 P.M.	42.97
15	New Haven 1:30 P.M.	Wallingford 3:00 P.M.	14.08
16	New Haven 4:00 P.M.	Ansonia 5:30 P.M.	11.15
17	New Haven 9:00 P.M.	Bridgeport 11:00 P.M.	22.25
18	Stony Creek 11:30 A.M.	New Haven 3:00 P.M.	14.97

*Crews change at New Britain.

CONNECTICUT COMPANY EXPRESS TRAFFIC—TIME-TABLE OF EXPRESS CAR RUNS



CONNECTICUT COMPANY EXPRESS TRAFFIC—TRACK SIDE OF NEW HAVEN TROLLEY EXPRESS STATION

commodious but inexpensive buildings are provided, the newest one being at Waterbury. Plans have also been completed for an up-to-date station at Bridgeport. The traffic centers in New Haven, Waterbury, Bridgeport and Hartford. These serve as checking points, a function which will be explained later.

To simplify the upkeep of the rolling stock of the express department a separate repair shop has been assigned to it in New Haven and here all ordinary overhauling is done. This arrangement will also aid in the segregation of maintenance costs.

ADMINISTRATION OF THE EXPRESS DEPARTMENT

All freight and express business comes under the direct supervision of V. S. Curtis, general traffic agent and secretary of the company. At each station is a local superintendent, who hires the necessary help locally. The agents are men of high grade, capable of meeting the local business men on a plane of reasonable equality and of studying the local opportunities for business.

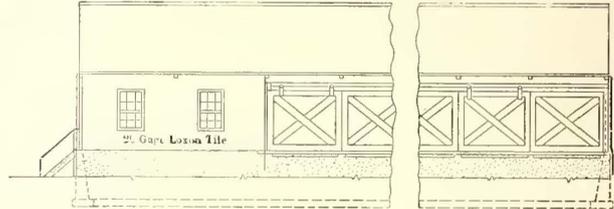
The cars are operated by the six divisions shown in the time-table on page 803, the runs and divisions but not the times of arrival and departure being represented diagrammatically also. Blueprint copies of the time-table and the diagram, with the division lines on the latter indicated by different colors, are posted at a number of points.

At the checking points, already referred to, the times of arrival and departure of cars are entered on forms like the one reproduced. These serve together as a complete record of the operation of the express system from day to day. For use in determining mileage on which charges are to be based large mileage charts have been prepared, showing the distance between any two points

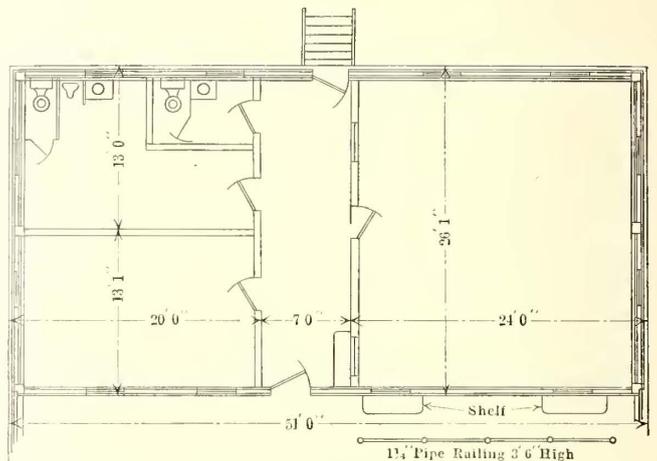
on the system. For special cases blueprint diagrams, prepared by the engineering department, have been provided to show graphically the distance from some point which is the origin of a great deal of traffic. An example is reproduced opposite, namely a mileage chart showing the distance from the Connecticut Quarries Company quarry at Mount Carmel to any point on the system.

TARIFFS AND VOLUME OF BUSINESS

The company believes that the high-class express service furnished by the electric railway should bring a reasonable return. A new set of rates were put into

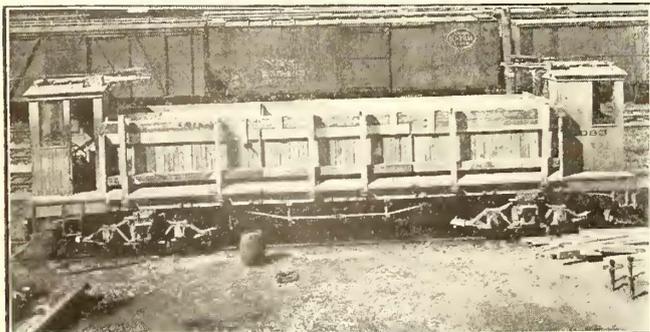


CONNECTICUT COMPANY EXPRESS TRAFFIC—SIDE ELEVATION OF NEW WATERBURY STATION



CONNECTICUT COMPANY EXPRESS TRAFFIC—PLAN OF OFFICE END OF NEW WATERBURY STATION

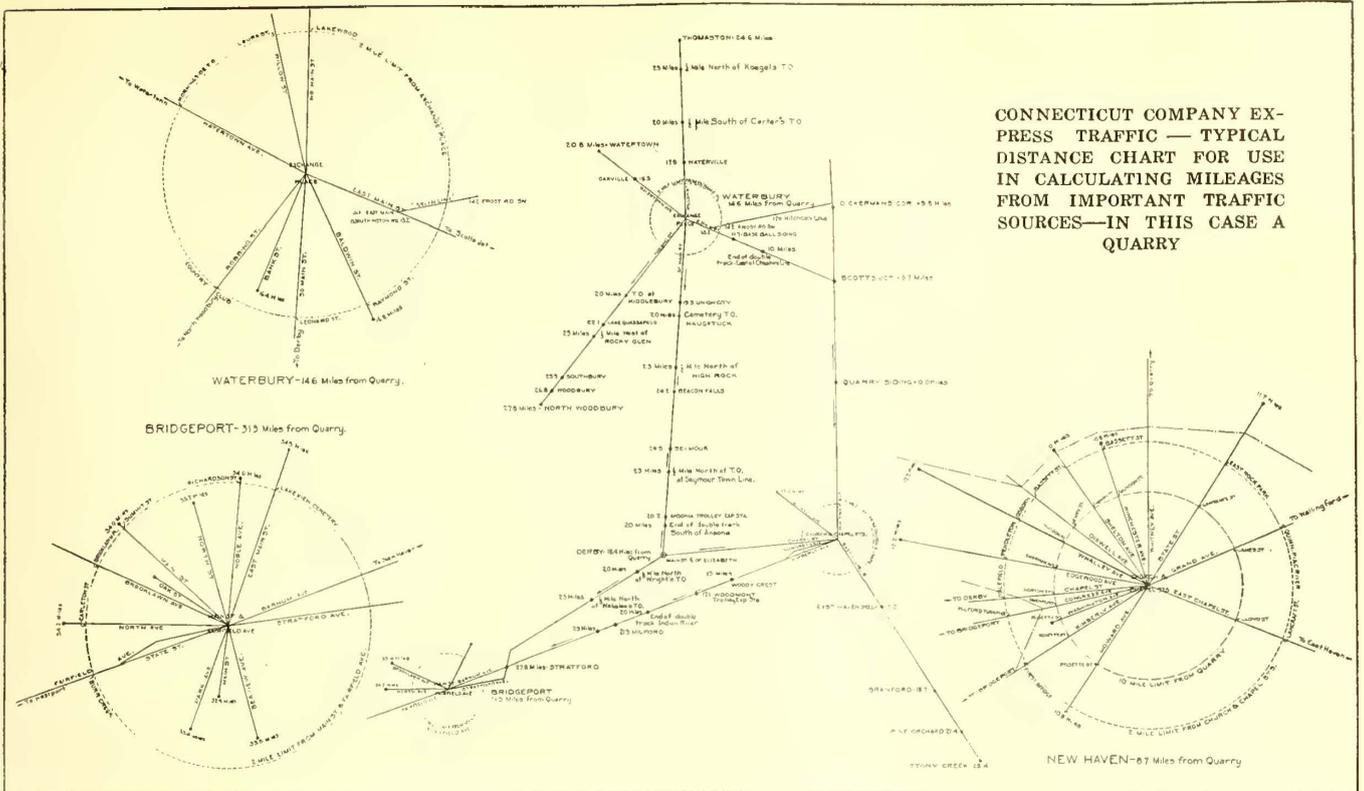
effect last May. As these have not yet been confirmed by the Public Utilities Commission they will not be discussed at this time. That the service is appreciated by the community is evidenced by the volume of business which now brings in as much as \$65,000 a month. One of the most troublesome features of the work at the stations was the accumulation of goods due to slowness of owners in removing them. A considerable storage charge, with daily increase in rate, was therefore assessed when goods were left more than twenty-four



CONNECTICUT COMPANY EXPRESS TRAFFIC—MOTOR FLAT CAR WITH TEMPORARY BINS FOR CONCRETE



CONNECTICUT COMPANY EXPRESS TRAFFIC—TEAM SIDE OF OLD WATERBURY TROLLEY EXPRESS STATION



hours. This matter, however, together with the general subject of charges, will be taken up in a later article.

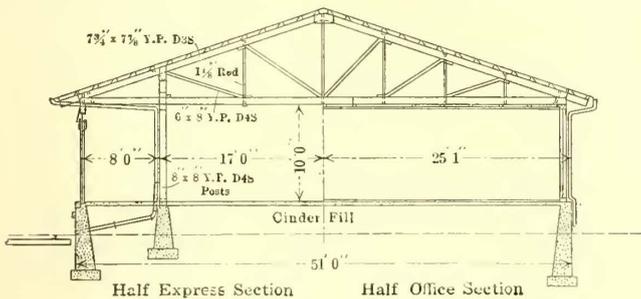
SOME TYPICAL FREIGHT STATIONS

For the purpose of illustrating the methods of handling express matter more definitely two present stations and a proposed one have been selected for brief description.

The station at New Haven, the appearance of which is shown in the photographs, pages 802 and 804, is located close to the New Haven Railroad. It is an old

the shed is wider than necessary and that there should be provision for supporting a trolley from the roof trusses. As the trusses were not designed for this purpose it will not be possible to add the trolley. At the time the building was designed it was considered feasible to heat the offices electrically from the adjoining Housatonic Power Company's power plant. This did not prove to be economical and it has been necessary to install stoves for the coming winter. In the proposed Bridgeport plant the shed platform will be narrower, the roof trusses will be stronger and a trolley will hang therefrom, and a steam-heating plant will be provided.

The Waterbury building is approximately 228 ft. long and 51 ft. wide over foundation piers. The floor is laid



CONNECTICUT COMPANY EXPRESS TRAFFIC—CROSS-SECTION OF NEW WATERBURY TROLLEY EXPRESS STATION

structure but serves reasonably well on account of its excellent location. It comprises two sheds, one for incoming and one for outgoing freight, and a wide paved roadway is available for the accommodation of trucks. At one end of the sheds is a two-story brick building containing the offices. In the second floor a large window provides a view of the interior of the next shed.

The station at Waterbury which was completed last year illustrates in a general way what is considered by the company to be an ideal layout from the standpoint of economy and convenience in handling, combined with low cost. Experience with the building has proved that

SHEET No. 1
REPORT OF ARRIVAL AND DEPARTURE OF EXPRESS CARS. 191

		From		To and From		To				
		New Haven		New Haven						
RUN NO	CAR NO	LEFT	MOTORMAN	MESSANGER	LOAD	A M	ARRIVED	MOTORMAN	MESSANGER	A M
						4:00		Hartford		10:00
						4:00		Meriden		8:15
						5:00		via Cheshire	Waterbury	7:30
						5:00		Naugatuck		7:30
			Naugatuck	9:00		11:00				
			Bridgeport	8:00		11:00				
						P.M.				
						12:30		Naugatuck		3:30
						1:00		Waterbury		3:00

Remarks:

CONNECTICUT COMPANY EXPRESS TRAFFIC—FORM FOR USE IN CHECKING MOVEMENT OF EXPRESS CARS

about 4 ft. above the surrounding ground surface, exactly 3 ft. 9 in. above the top of the track which stretches along one side. The floor is of concrete 4 in. in thickness. In the express section the uppermost inch is finished with hardener and lampblack. In the office section, which occupies 75 ft. at one end, a wooden floor is laid on top of the concrete. The concrete floor is on a filling of cinders from the adjacent power house, well compacted. Fire got into this filling after the completion of the building and consumed a considerable proportion. A fire wall has now been provided to prevent a recurrence of this accident.

The building is framed of wood in a simple manner, as shown in the line cuts on page 805. The shed sides are closed with a continuous row of sliding doors 10 ft. 3 in. wide by 8 ft. 4 $\frac{3}{4}$ in. high, and a brick fire wall divides the shed into two practically equal parts. The roof and sides where not occupied by doors are covered with No. 26 gage "Loxon" tile of galvanized iron. This comes in strips about 3 in. wide provided with interlocking joints.

The office section contains a large office for the handling of waybills, etc., a private office for the agent, and toilet rooms for men and women. A hallway leads from the entrance at the end of the building through the office section to the freight shed, with entrances to all rooms looking out from it.

The proposed station at Bridgeport is essentially like that at Waterbury except that the building is but 40 ft. wide. The roof trusses are to be stronger so they can carry a suspended load on the trolley of 1 $\frac{1}{2}$ tons. A double-bead steel track will extend lengthwise of the shed in the center with four cross tracks placed so that they can be used in loading four express cars at once. A cross-track switch is provided at each junction point, which permits the turning of a short section of rail with its load into line with the longitudinal track or the cross track. Differential hoists will be used in lifting pieces of merchandise to be carried by the trolley. The length of the Bridgeport station will be the same as that of the Waterbury station.

Publicity Plan for Increased Fares

BY T. W. MOFFAT

Treasurer The J. G. White Management Corporation,
New York, N. Y.

A DISCUSSION regarding the increasing of rates of fare prompts the following suggestion in regard to spreading the doctrine of the inadequacy of the nickel as a standard unit of compensation for carrying passengers on electric railways.

The chairman of the board of directors or president of every company in the country should call a "get-together meeting" of the executive officers of his company and carefully explain to them the difficulties and hardships the companies are facing on account of their increasing expenditures and restricted revenues. They may have been told of this before and may know it from their own observation, but it will do no harm to tell it to them again.

Let this meeting be the basis of conducting a personal campaign of publicity to show the people the pressing needs of the electric railways and public utility corporations generally for adequate rates that they may be able properly to serve the communities in which they

are situated and not be forced out of business by increasing operating costs and taxes without increased revenues.

This campaign or "drive" should be delegated to each employee of the company according to his standing and ability. To the chairman of the board or chief executive of the company should be allotted the task of spreading the doctrine to banking interests, the mayor and chief officers of municipalities, the senators and congressional representatives of the districts in which his company is situated.

The general manager should preach the same gospel through his heads of departments to the rank and file of the employees. It should be carefully explained to conductors and trainmen that the companies cannot afford to pay the increased wages they demand and need with which to buy the necessities of life, unless the company in its turn shall receive adequate compensation for the service it renders. This should also be told to the shop and track men and all other forms of skilled and unskilled labor, and they should be asked to repeat it as far as possible to their friends and others with whom they come in contact.

The secretary of the company should send a letter signed by the president to each stockholder of record enumerating the same conditions and saying that under existing conditions companies cannot hope to pay dividends, and unless adequate relief is speedily obtained it is not improbable that they will be forced into receiverships and bankruptcy.

The treasurer should send a printed statement on similar lines inclosed with every check sent out by the company in payment of its bills. This statement may also well be inclosed with every letter written by any official of the company to reach the general public.

The auditor of the company should follow the same lines with his clerks, the day and night receivers and other employees.

The purchasing agent should preach the same doctrine to his friends, the manufacturers from whom the company buys its products and supplies and whose interests are so vitally allied with the success of utility companies, so that they in their turn may carry the publicity campaign among their friends and associates, who might not be reached directly by the utility companies themselves.

A concerted, combined, advertising newspaper campaign might also be successfully inaugurated. As Mr. Brush has said, "the American public is fair, the American public is just, and the American public is generous," and if the controlling facts and conditions are properly placed before the public by the companies, speedy relief from the present ruinous state of affairs will no doubt be obtained.

The companies should ask, not so much for the remission of a few paltry paving and franchise taxes, nor even for a 6-cent fare, but for just and adequate pay for services rendered. Not until this has been made plain to the public in general and to interstate, state, municipal and other regulatory bodies in particular will the companies obtain the relief necessary to enable them to render efficient service, properly maintain their ways, equipment and rolling stock, provide for proper and adequate depreciation and pay such dividends as will invite the investment of capital in the public utility business.

One-Man Car Operation Discussed

Stone & Webster Experience, as Described Before New England Street Railway Club, Most Favorable—Complete Automatic Equipment Recommended—Pay-as-You-Leave Plan Followed on Brockton & Plymouth Cars

AT a largely attended meeting of the New England Street Railway Club at Boston, Mass., on Oct. 25 the advantages of the one-man car were discussed at length by representatives of manufacturing and operating organizations familiar with this latest development in the industry. The meeting was held at Young's Hotel and was the first of the season. President A. H. Ford occupied the chair, and the business session was preceded by a buffet supper. Before the topic of the evening was taken up the resignation of H. A. Faulkner as secretary of the club was accepted and Charles H. Hile of Boston was unanimously elected to fill the office. Upon being escorted to the officers' table Mr. Hile received a most enthusiastic welcome, and in a brief speech of acceptance pledged his best efforts to the welfare of the club and the industry in New England, thanked the membership for their confidence and asked for the co-operation of every man in the organization in the important work ahead of the club. It is expected that with the inauguration of the new secretary's administration, the club will become a greater factor in public affairs than in the past.

The principal speakers of the evening were C. H. Beck of the Westinghouse Electric & Manufacturing Company and J. C. Thirlwall of the General Electric Company. Mr. Beck emphasized the service and economic situation that led to the development of the one-man car, pointing out the influence of high average speed as a factor in determining patronage. With former standard electric cars, he stated, an average speed of 8½ m.p.h. was difficult to exceed in city schedules, compared with 14½ m.p.h. in jitney service and about 15 m.p.h. with private automobiles. By utilizing the one-man car and operating at an average speed of about 12 m.p.h. the traffic flows back to the electric car in many instances. The author touched upon the vital importance of utilizing the now well-developed safety features of the one-man car and said that by the use of these more economical operation and faster service are simultaneously attained. The one-man car can hold its place in the procession of traffic through the street. By its use there is no intention to force employees out of present jobs, but the one-man car offers an opportunity to earn higher wages, save money and increase net earnings for the company and thus benefit employees and the public, as well as the stockholder. If the labor shortage becomes sufficiently acute women should be useful in the operation of the safety car, on account of the light physical requirements of the work with the present automatic features.

Mr. Thirlwall gave a number of reminiscences of the genesis of the one-man car, outlining his observations of jitney traffic in the Southwest in company with C. O. Birney of the Stone & Webster Management Association, the originator of the present one-man car standard type. It was noted that on short-haul traffic the public patronized the vehicle first appearing, regardless of its

character. On long-haul traffic it appeared that the higher speed of the jitney was the controlling element in its selection. Speed and frequency of service thus were seen to be most important points. The light construction of the one-man car permits accelerations exceeding 2½ to 3 m.p.h.p.s., compared with a maximum practical rate of 1¾ m.p.h.p.s. for double-truck cars. The absence of a pendulum effect in the one-man car is an important feature of its successful high acceleration. The speaker reviewed various aspects of the speed-time functions of the one-man car and outlined savings effected on a typical line along the general course of his article in the *ELECTRIC RAILWAY JOURNAL* of Sept. 22. He held that even in very large cities a field for the one-man car exists on many lines.

OPERATING EXPERIENCES RECOUNTED

In the discussion following the papers it was pointed out by Mr. Thirlwall that the collection of fares offers no hindrance to speed in safety car operation. With smaller rolling stock units on more frequent headway, the number of passengers boarding or leaving per stop decreases, even though the average time elapsed at stops per person increases slightly. In Fort Worth, Seattle and Bellingham 80 per cent of the passengers had the exact fare ready on entering the one-man cars. Present practice is to start the car as soon as the last passenger boards it. The fare box is in line of the operator's vision, and, when necessary, the operator can make change from a belt without removing his hand from the controller or looking away from the track. In congested districts, of course, this practice is not followed. Transfers are issued from a pad hanging on a post directly in front of the fare box. The operator reaches up and pulls one off as required. He punches the transfers at the end of the run and when he is changing ends during layovers.

Mr. Beck conceded that the maintenance of equipment on a one-man car with automatic features would be somewhat greater than without such parts but held that even if the total maintenance expense came to three or four times that of air brake equipment on ordinary cars, it would not make any material difference in the economic value of the one-man car as a revenue producer and money saver. Transfer issuing devices, mechanically or otherwise operated, are being worked out, and automatic features predominate. Any railway having the opportunity to put a considerable number of these cars into service must be prepared to speed up its organization as a whole. Quick replacement of cars when temporarily thrown out of service on the line is very important. The Birney car is so light that in some cases a Buick automobile has been used to haul a derailed one-man car back to the track.

President Ford suggested that time would be saved in the operation of one-man cars if passengers paid as they left. Such a plan has been tried in car opera-

tion in Cleveland and Detroit, he stated, and the Brockton & Plymouth Street Railway, in Massachusetts, is using this method. Edward Graham of Bangor, Me., said that the merits of the one-man car appealed to him so much on a recent trip to St. Louis that he has ordered three units from the American Car Company. He inquired whether trouble from freeze-ups can be prevented in winter, the temperatures at Bangor running as low as 30 to 35 deg. below zero. Mr. Beck said that by the use of two main air reservoirs per car and carefully designed piping it is hoped to avoid difficulties resulting from condensation.

R. B. Stearns, vice-president Bay State Street Railway, said that credit should be given to the Massachusetts Public Service Commission for its early and wise determination that the one-man car has come to stay, or at least should be introduced into New England. The one-man car is probably a life-saver to many companies. The Bay State company hopes soon to be able to operate about fifty one-man cars. Mr. Stearns commented upon the present cost of complete units, saying that fifty represent an investment of about \$300,000, or \$6,000 apiece, compared with an estimated cost on former price levels of about \$3,800. To convert single-truck cars with substantially all the advantages of new cars into one-man units would cost about \$1,250. The weight would be somewhat greater, however. The speaker queried the need of power-operated equipment for door and step operation, intimating that this might be performed manually at lower cost.

C. D. Emmons, general manager Boston & Worcester Street Railway, said that entirely new cars produce a far better effect on the public and may make all the difference between success and failure from the standpoint of public opinion. Mr. Beck explained that the air-operated equipment for door and step service is not complex and is an important factor of success.

ADDITIONAL STONE & WEBSTER EXPERIENCE

L. R. Nash of Stone & Webster, Boston, stated that more than 300 safety cars are either on order or in operation on the properties of this organization. Over 75 per cent of these units are of the Birney type, the remainder being thoroughly rebuilt cars. Full automatic equipment is always provided, no makeshift alterations being approved. The remodeled cars have a seating capacity slightly greater than the Birney cars, about thirty-six passengers being accommodated. These cars weigh from 20,000 to 24,000 lb. compared with 13,000 lb. in the Birney car. For all-day operation the power saving of the Birney car justifies its use. For rush-hour service the reconstructed single-truck car would show some economy.

The average increase in service by one-man cars on Stone & Webster roads is about 50 per cent. In studies that have been made of fairly large properties, after complete change-over to Birney cars has been made, the total figures show that it is unnecessary to increase the service to the extent of 50 per cent. In one case entirely satisfactory service was given by an increase in car-hours of less than 32 per cent and an increase in car-miles of over 40 per cent. It is not always possible to obtain from the use of such cars a large margin over fixed charges on the additional investment. Regarding labor, the policy has been either to shorten the working day and continue the same pay per day or else

to raise wages in one-man car operation. The necessary differential has not been established as yet on all the Stone & Webster properties, but it is never less than 10 per cent. In nearly all cases the men are anxious to operate the safety cars, and there is usually a considerable waiting list. The varied duties and increased alertness required attract the men.

Mr. Nash said that there need be no serious difficulty from the public standpoint in introducing safety cars, if the public is clearly given to understand that it is to receive an improved service, with more frequent car movements and safer operation. No trouble is to be apprehended from the public utility commissions if safety appliances are fully applied. So far no trouble has been experienced with trainmen. The organization's confidence in introducing the Birney car is so great that large numbers have been ordered for the various properties without undertaking to secure the formal approval of the public authorities, except in cases where franchises or ordinances prohibit the operation of cars by less than two men. Sometimes politicians attempt to make capital out of the introduction of one-man units, claiming that the rights of the "poor workingman" are jeopardized, but the experience of one city where a number of municipally owned cars were operated as well as private company cars is illuminating. The operation of safety cars showed such advantages that the community saw that it was to its benefit to adopt the one-man type of car itself, and there was no logical reason thereafter for refusing the private company permission to equip its lines in this way.

The increase of earnings from the use of safety cars varies widely from a maximum of 35 per cent on a 15 per cent service increase to a minimum of 10 per cent on a 35 per cent service increase. Eight cents per car-mile is a practicable operating figure for the safety car, compared with 15 cents under the two-operator plan. Part of this gain comes from the increase in car-miles secured. If the total expense of one-man operation is applied to the car-mileage previously operated on the 15-cent basis, the operating expense comes to about 12 cents.

Stone & Webster expect to introduce the Birney car and to reconstruct single-truck cars for one-man service on a very much larger scale on their properties than has so far been realized. This will take time, because under present conditions it is difficult to raise money in large amounts and also to insure that no competent man will lose his job on account of the change in equipment. On some properties a foot valve is used in order that the operator need not be subjected to the fatigue of holding his hand on the controller button throughout the entire day's run.

G. H. Tontrup, American Car Company, St. Louis, said that the manufacturer has been trying for fifteen years to produce a standard car. This desirable status has now been reached in the one-man unit. The speaker said that his company at present has on hand a number of stock cars of the one-man type for reasonable delivery, say about Feb. 1, 1918. About two weeks ago an order of twenty cars was shipped to Fort Worth and soon after a long-distance telephone call was received asking how soon the company could deliver fifteen more units. The above delivery date includes the completely equipped car with all electrical and safety devices.

Mr. Beck said that a few one-man cars are operated

without air brakes or safety features on fifteen or thirty minutes headway, but not on city lines. He strongly urged the use of the full automatic equipment.

The discussion closed with the statement that on the Brockton & Plymouth Street Railway the pay-as-you-

leave plan is working well. When pasteboard tickets were used, women passengers sometimes caused inconvenience by wrapping six cents in the ticket and dropping it into the fare box. This disadvantage was done away with by the use of metal tickets.

Task of Utilities Is Public Education

Before Convention of New Jersey Utilities Association, Dr. Conway Emphasized Importance of Publicity and Outlined Desired Results of Educational Campaign—Financial and Operating Problems Under War Conditions Discussed by Other Speakers

AT the convention of the New Jersey Utilities Association, held in Atlantic City on Oct. 26-27, the discussion centered on the need of wider publicity for utilities and on various financing and operating problems that are of serious moment in these war days. Abstracts of the addresses most directly connected with electric railway operation are published below.

ELECTRIC RAILWAY RATE BASIS UNSCIENTIFIC

The problem of higher operating costs and commission control over rates was covered in a paper by Thomas Conway, Jr., Ph.D., professor of finance, University of Pennsylvania, Philadelphia, Pa. The fundamental difficulty with the electric railway industry, he believes, is that its rates are fixed upon an unsound and unscientific basis, and relief can only be had through courageous action by the public service commissions.

With a few commissions, said Dr. Conway, the disposition seems to be to treat the advance in operating costs as a purely temporary matter which may be allowed to continue without any remedial steps being taken to offset its influence. There are two periods in recent history, however, which furnish situations similar to that now prevailing. The first is covered by the French Revolution, the Napoleonic struggle and the years of reconstruction following it. The second is the period of almost universal war from 1851 to 1871. If the history of these periods is any guide, it would appear that there is a strong probability of abnormally high prices prevailing over a period of years.

The public service commissions, Dr. Conway asserted, must make a choice between gambling upon the speedy passing of high prices and the adoption of a conservative policy which assumes that high prices will prevail for some years. The latter alternative would allow the utilities to advance rates until the recession actually occurred. There can be no question that the spirit of the public utility law in every state is that these corporations shall be permitted to earn a reasonable return under all conditions. Theirs is not a speculative business in which they must take long chances and in which success is to be rewarded by very large profits. Public utility profits are closely limited in good years, and because of this limitation they must be sustained in years of adversity.

According to Dr. Conway, public utilities are face to face with the question of a choice between (a) failing to earn a reasonable return upon the investment with the existing standard of service; (b) decreasing the

standard of service, in the hope that it will show larger profits, or (c) asking for a higher rate, in order that the standard of service may be preserved and a fair return earned. To the credit of the utilities, practically every company has not faltered in maintaining its standard of service. This is the proper course, for the utilities accurately appreciate the psychology of the American people when they conclude that this country will not tolerate poor service. The public is willing to see useless passenger service curtailed when track capacity is necessary for the movement of food, fuel and materials of war, but it is not willing to see public utilities retrograde in the absence of some imperative national necessity. It is characteristic of Americans to expect and demand good service, and at heart they are not niggardly. They willingly pay for what they get.

This conclusion, Dr. Conway stated, seems so obvious that it is hard to understand the foginess which apparently exists in the minds of members of many public service commissions. Some commissions have shown courage and vision, but others have demonstrated a desire to shirk responsibility and to "play to the galleries" with a so-called popular decision rather than to face squarely facts and conditions. Moreover, the situation is complicated by the interminable delays in securing action of any sort from practically all the commissions. A recent study made in Massachusetts shows that the average time elapsing between the filing of a petition for higher rates and the decision of the commission is approximately one year. Delays of this length are frequently fatal to a sorely-pressed utility. The real facts are that the provision of law requiring action by the commission on every proposed rate places such a burden on the commission that expedition is impossible. The public utility law should allow a utility to institute higher rates on its own motion, giving to the commission the power to reduce the rates, after investigation, in case the necessity for larger revenues cannot be established by the carrier.

PUBLIC EDUCATION IS NEEDED

Looking at the question from a selfish standpoint, Dr. Conway said, one can readily understand why commissioners, with a comparatively insecure tenure of office, have an intense desire to cultivate public approval. After all, the utilities cannot expect the public utility commissioners to commit political suicide. They cannot expect a large measure of courage from a commission until public opinion will support it in advancing rates

where necessary. The task of the public utility, therefore, is essentially that of public education.

There are no longer any secrets in the public utility business, but the difficulty is that the public does not understand the facts. It is too often misled by those who have a selfish interest to advance or who are ignorant of real conditions. It is the duty of the utility to see that through educational publicity the facts concerning its business, its finances, its problems and its needs are forced upon the attention of every person in its community. If this is accomplished, the difficulties of securing courageous and far-sighted action by the commission will automatically disappear.

The educational campaign, in Dr. Conway's opinion, should endeavor to accomplish the following results:

1. The public must be convinced of the sincerity of the utility and of its desire and its intention to be fair. No campaign can succeed unless the public believes that the utility is telling the exact truth in presenting its plea for relief.

2. It is the task of the utility to convince the public that investors in public utility enterprises must be protected because this course of action is to the selfish interest of the community. Ample protection to capital and the insurance of a reasonable return invite new capital into public utility enterprises, and new capital is essential to healthy growth and progress of utilities.

3. The public must be convinced that it is the chief loser through a financially crippled utility because an impoverished company cannot continue to furnish good service, provide additional facilities necessary to meet the growth in population, and keep abreast of the progress of the art through the introduction of new methods and facilities.

4. The people must be shown that the essential question is the cost of good service, which they demand and to which they are entitled. They must see that the problem is essentially whether they desire an inferior service at the present rate or the highest standard of service, paying therefor whatever rate is necessary to cover operating expenses, depreciation and a fair return upon an honest investment.

5. Finally, the responsibility for the future of privately-owned utilities rests with the commissions. If utility plants stop growing, if capital forsakes the industry and if service deteriorates because of unwise commission action, the companies must make it very clear where the responsibility rests and what is necessary to restore health and vigor to the industry.

UTILITIES DOING THEIR BIT

The part public utilities are playing in the present war period was described in detail by J. L. O'Toole, assistant to the president Public Service Corporation of New Jersey, Newark, N. J. After pointing, in a spirit of patriotic pride, to the calling of utility leaders to carry on administrative work for the government and to the growing roster of utility men in active service, Mr. O'Toole discussed the special war work that is being carried on by each class of utility.

From the nature of their business, he said, electric railways do not come in direct contact with the government war boards to the same extent as other utilities. In many sections, however, electric railways have been pressed into service for the transportation of troops over short distances, and their facilities have been

drawn upon to no small extent for the movement of materials. Another task that has tested their mettle has been that of providing transportation for the immense industrial plants that have sprung up to meet the essential war needs of the government. As many of these are of a temporary character, in that they are likely to cease or greatly curtail their output at the close of hostilities, electric railway operators indeed have a war problem on their hands.

MAINTAINING ADEQUATE FACILITIES UNDER WAR CONDITIONS

Service under war conditions was discussed by George W. Fuller, consulting engineer, New York, N. Y. All utilities, whether publicly or privately owned, are now experiencing real difficulty in maintaining adequacy of service. In Mr. Fuller's opinion government ownership is not a cure-all for existing conditions. In fact, there is probably less reason at present for this than during times of peace. There is no mystic wand by which the government, especially municipalities, can cause the real difficulties encountered by privately owned utilities to vanish.

No utility, Mr. Fuller averred, can long exist without a reasonable margin of profit. Regulatory commissions can increase the earning capacity of utilities to the extent necessary through exercising a greater liberality in arriving at the rating base, or by allowing a higher rate of return, or by authorizing contingent reserves for unusual operating expenses. Corrective measures are needed so as to attract capital to the privately owned utilities. This is largely a problem of proper rate-making—the providing of earning capacity which will guard against disasters. Belief is needed in a practical way, Mr. Fuller said, and it is the results as to earning capacity which count in the rate problem, rather than a perfunctory adoption of any favorite policy or procedure without regard for its remedial effect.

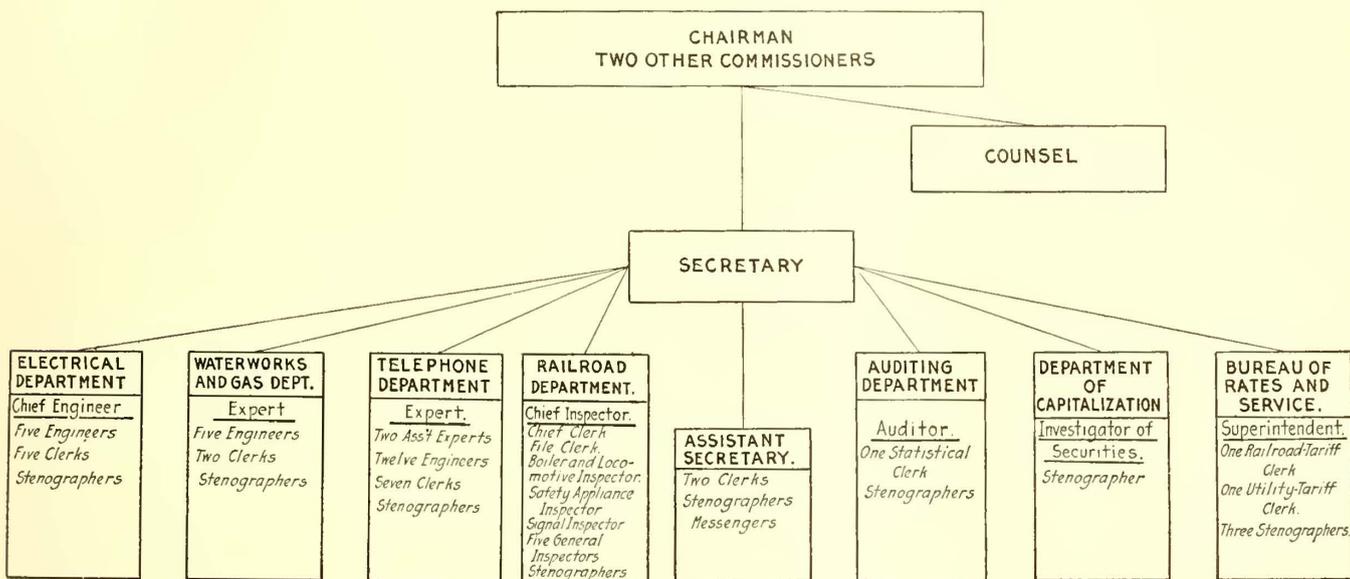
FINANCING OF UTILITIES

In discussing the financing of public utilities, T. H. Dudley Perkins, of Bioren & Company, Philadelphia, Pa., mentioned briefly the fundamental requirements in regard to franchise life, territory, record of earnings and character of management which govern the financing of public utilities in normal times. In regard to franchise life, Mr. Perkins said that owing to legislation, judicial decisions and the growth of commission regulation, the absence of a perpetual franchise is no longer a bar to successful financing.

With reference to financing under present conditions, Mr. Perkins said that it is practically impossible to put out new issues. The periods of quiet between the placing of Liberty Loans are fully covered by such necessary financing as renewals of maturing obligations. In his opinion, such renewals in themselves offer a most serious problem. With each new piece of financing being done on a higher interest basis, it becomes a serious question whether the government should not consider the advisability of extending maturing obligations (which had been made for a period of more than one year and the maturity of which was not provided by such installment payments as car trust rentals, etc.) so that at least during the period of the war public service corporations would not be embarrassed by this expensive and difficult operation.

Regulating Utilities in Ohio

This Article Deals Briefly with the Organization of the Ohio Public Utilities Commission and Shows the Varied Kinds of Work Being Carried On



OHIO COMMISSION—CHART SHOWING ORGANIZATION OF REGULATORY FORCE

THE Ohio Public Utilities Commission has almost absolute control over utilities as far as service, rates and other matters of public interest are concerned. The commission's task may be judged from the fact that in the State there are 1165 utilities representing an investment of more than \$2,000,000,000 and having an annual gross income in excess of \$300,000,000. This total includes seventy-eight interurban railways and eighteen city and suburban railways.

The hearing of rate cases and the appraisal of property in connection therewith have thus far constituted the main tasks of the commission. Cases involving the valuation of the utilities in nearly all of the large cities of the State have come before it. Matters relating to car shortage, traffic congestion and grade-crossing accidents, however, are now occupying no inconsiderable portion of its time.

SIZE AND COST OF THE COMMISSION

The commission has a staff of about eighty persons. The actual number fluctuates considerably from time to time, according to the amount of work on hand. Last year the operation of this regulative force cost the State \$178,350, of which \$101,715 was for general office work and \$76,635 for appraisal work. The law provides that for the maintenance of the commission a sum not exceeding \$75,000 shall be levied against utilities in proportion to their intra-state gross earnings.

The commission itself consists of three members who serve for six years and end their terms in rotation at two-year intervals. The salary is now \$4,500 per annum. Only two members may be of the same political party. Every two years the incoming Governor appoints one commissioner as chairman. All expenditures must be approved by this member, and questions of new policy may be decided by him. Anything of im-

portance, however, may be decided only with the concurrence of at least one other commissioner. The present commissioners are Oliver H. Hughes, chairman; Beecher W. Waltermire and Charles C. Marshall.

HOW THE STAFF IS ORGANIZED

With the exception of the secretary, all employees of the commission are under the State civil service system. They are organized into nine different departments. Aside from the legal staff and the secretary's office, the departments may be grouped into two classes, technical and general. The technical departments, which deal with special utility groups, are railroad, electrical, water works and gas, and telephone. The general departments—the bureau of rates and service, the auditing department and the bureau of capitalization—are more or less concerned with all kinds of utilities.

All department heads are responsible directly to the commission. All correspondence, complaints, etc., however, pass through the secretary's office, and the accompanying diagram of the organization was drawn with such a point in mind. This diagram shows the personnel of the staff.

While not so designated officially, the secretary's office is the administrative department of the commission. The secretary is appointed by the commission and holds office during its pleasure. He is required to record all proceedings, issue all necessary papers, keep the files and superintend the clerical business. He acts as the go-between for the commission and the various departments, and also meets the public, answers general inquiries for information and is often able to satisfy informal complaints.

The attorney-general of the State is the legal adviser of the commission, but he also designates one or more of his special counsel to act as attorneys for the

THE PUBLIC UTILITIES COMMISSION OF OHIO

Station..... Date.....191...
Official in Charge.....Title.....
Of the.....R. R.
You are hereby notified that.....Car No.....has been

CONDEMNED

on account of the following defects:
and ordered out of service until repaired and put in condition to meet the requirements of the law.

Inspector Automatic Couplers and Air Brakes

THIS CARD MUST NOT BE REMOVED UNTIL THE CAR IS REPAIRED

OHIO COMMISSION—FORM 1—"BAD-ORDER" CARD USED BY A GENERAL INSPECTOR

commission. The legal aids so appointed have their offices at commission headquarters. The attorney-general, at the request of the commission, takes the necessary legal action to secure enforcement of the law or its orders.

Railroad Department

The work of this department has to do with the operation of railways, both steam and electric interurban. The chief inspector has general supervision and is responsible for the technical policy of the department. The boiler-and-locomotive inspector inspects all railway boilers and locomotives, and investigates locomotive failures, causes of wrecks and the damages caused by accidents to engines and boilers. The safety-appliance inspector inspects couplers, brakes, fire extinguishers and all other safety devices used in connection with rolling stock. Similarly interlockers and signals must be inspected by the interlocker-and-signal inspector. A "bad order" card is shown in Form 1. All safety devices both for rolling stock and roadway must have the approval of the commission before being placed in service.

The general inspectors go out on service complaints of all kinds and to the scenes of all railway accidents. The accompanying sheet (Form 2), which with a duplicate is bound up in pocketbook style, is used in notifying railroads of points where the lateral clearance is insufficient for safety. Another sheet (Form 3), similarly bound, is carried by all inspectors. They are required to fill out one for each railway trip taken while on duty. A good check is thus obtained on every-day operation over the State.

The commission receives many complaints as to grade crossings, and in each case an inspector is sent to make an investigation. One commissioner recently said: "If all the flagmen-at-crossing requests were granted, there would be a standing army along each railroad."

Records are kept of all dangerous grade crossings, wrecks, fatal accidents, clearances of overhead structures and wires, lateral clearances and interlocker plants. The railways are required to file monthly reports of all engine inspections. In case of locomotive failures, they are required to isolate and guard the

machines until commission inspectors arrive. In case of fatal accidents or serious injuries all steam and electric railways are required to send immediate telegraphic notice and also within ten days to report on the sheet shown in Form 4.

In connection with adequacy of service the railroads are required to report daily all train movements and indicate the disposition of freight cars on their lines. During the present heavy traffic inspectors are being sent to all points of congestion. The department keeps track of all empty cars, and all loaded cars that stand still for any length of time. The commission has almost unlimited powers in connection with railway operation, and at present it is exercising these very widely in an effort to keep trains moving. Indirectly the commission is also exerting pressure on shippers and consignees in an effort to relieve the car shortage and keep the freight houses clear.

Electrical Department

Primarily this department has charge of the supervisory and the appraisal work related to those utilities furnishing electrical energy for light and power purposes. It also has charge, however, of the work on steam and electric railroads in matters relating to the authorization of securities or the fixing of rates.

The handling of complaints against service does not take up nearly so much time as do appraisals for rate and security cases. This department appraised \$46,-

Form No. 36. The Public Utilities Commission of Ohio NOTICE
No. 758
Gentlemen: You are hereby notified that
located adjacent to track No. Yard of the
Railroad does not comply with this Commission's Administrative Order No. 9.
Kindly notify the Commission at once, on the form attached, that you will correct the conditions herein described within days from this date, so as to comply with said order, and follow with advice when this work is completed.
(Signed) Inspector.
No. 758
The Public Utilities Commission of Ohio, Columbus, Ohio.
Gentlemen: The conditions described in above notice dated have been corrected so as to comply with Administrative Order No. 9.
(Signed)
No. 758
The Public Utilities Commission of Ohio, Columbus, Ohio.
Gentlemen: The conditions described in above notice dated will be corrected within days from this date so as to comply with the Commission's Administrative Order No. 9.
(Signed)

OHIO COMMISSION—FORM 2—LATERAL-CLEARANCE NOTICE TO BE FILLED OUT BY A GENERAL INSPECTOR

INSPECTOR'S REPORT

Inspector..... Date.....
 Train No..... Railway.....
 Between..... and.....
 Due to Lv..... A. M. Due to Ar..... A. M.
 P. M. Due to Ar..... P. M.
 Train Left..... A. M. Arrived..... A. M.
 P. M. Arrived..... P. M.
 Cause of Delay.....
 Marked..... Hr..... Min. Late
 Re-marked.....
 Consist of Train.....
 Adequacy of Cars.....
 Condition of Cars..... Toilets.....
 Treatment of Passengers.....
 Calling Stations.....
 Train Crew.....
 Protecting Rear End.....
 Diner and Sleeper Service.....

	Departure Station	Arrival Station
Announcing Trains		
Station Adequacy		
Sanitary Condition		
Toilets		

MISCELLANEOUS REMARKS

Care at R. R. Xings.....
 Junction Connections.....

R. R. File No. Form 7 Com's File No.

WEATHER CONDITIONS
 Clear
 Foggy
 Snow
 Rain
 Collision
 Derailment
 Miscellaneous

THE PUBLIC UTILITIES COMMISSION OF OHIO
COLUMBUS
 This report to be made within ten (10) days after the accident.

FATAL ACCIDENT REPORT

Railroad.....
 On..... Division..... miles..... of..... Station.....
 (M. S. E. or W.)
 (Pass. or Freight) Train No..... Engineer.....
 Conductor.....
 Accident occurred..... day of..... 19..... at..... M.
 The accident was caused by.....

KILLED
 See other side for instructions

	NAMES	Age	Residence	How Killed	Occupation
PASSENGER:					
EMPLOYEE:					
OTHER PERSONS (See Instructions):					

Date of this Report..... 19.....
 Name and Title of Officer making Report.....
 Address.....
 (COVER)

OHIO COMMISSION—FORM 3—NOTE BOOK FORM CARRIED BY ALL GENERAL INSPECTORS WHEN TRAVELING. FORM 4—FATAL ACCIDENT REPORT REQUIRED FROM RAILWAYS

964,155 of property for twenty-five different companies during the last fiscal year. The expenditures were \$22,620 for investigating service and \$67,120 for appraisal work.

On complaint the department makes field tests to check the calibration of meters or to determine whether the commission's standards of service are being followed. Indicating and graphic recording meters for making field tests are a part of the departmental equipment. All standardization work is done in the engineering laboratories of Ohio State University, which are conveniently located at Columbus.

Waterworks and Gas Department

In this department are handled all technical matters relating to waterworks, natural gas, artificial gas, pipe line and heating and cooling utilities. If any such utility is operated in conjunction with an electric power utility, this department still has charge of all valuation work connected therewith. As in the electrical department, much time is spent in valuation work. Moreover, in cold weather from twelve to eighteen inspectors are kept in the field to watch natural gas shortages. Where necessary these inspectors cut off industrial establishments using natural gas in order that a sufficient supply for domestic use may be available.

Telephone Department

The telephone expert in charge of this department assigns work and checks the final physical valuations, adding on the necessary overhead items. His assistants investigate complaints and security applications and in-

spect service. The engineers are divided into three special groups—central office, overhead construction and underground construction. In making appraisals each group handles its specialty.

The law forbids telephone companies to merge without a valuation of property being made and rates fixed. This requirement has thrown a heavy burden upon the telephone department. During the last fiscal year it appraised property of \$3,500,000 in connection with capitalization petitions and \$14,000,000 in connection with rate cases. About eighty investigations of service were made to adjust complaints. The field men are constantly making secret service tests to check up the general efficiency of service.

Just now the department is something like a year behind with its valuation work, there being seven merger and three rate cases upon which no work of this character has been done. Several engineers are engaged in observing the costs of new work now in process of construction in order to secure more accurate data for unit costs.

Bureau of Rates and Service

From the standpoint of frequent contact with all utilities the bureau of rates and service is one of the most important departments. All new schedules must be passed upon by this bureau. At the head is a traffic expert. Under him are a railroad-traffic clerk, a public-utility tariff clerk and a stenographer.

The railroad-traffic clerk checks all new railroad tariffs, schedule changes and orders of suspension, and he handles informal complaints. The utility-tariff clerk

checks rate schedules, operating rules and regulations, and he conducts the correspondence in regard to standards of service and informal complaints. He also keeps on file municipal ordinances and franchises relative to public utilities.

Auditing Department

The accounting and statistical end of the commission's work is handled by the auditing department. It devises all classifications of accounts not taken care of by the Interstate Commerce Commission's classifications. It has already prescribed systems for the electric light and power utilities and is at present preparing a suitable classification for the gas utilities. It checks the annual reports of the utilities and compiles the annual statistical report of the commission. It assesses the annual \$75,000 levy against the intrastate gross earnings of the utilities and provides the budget for the commission's maintenance. It also audits commission expenditures and makes up the payroll.

When securities are issued, a utility is required to furnish to the auditing department a detailed statement showing the nature of the securities sold, the selling price and the amount sold. This statement is checked up to see whether it corresponds with the commission's authorization.

Department of Capitalization

The department of capitalization is comparatively new. The duties of the investigator of securities are very similar to those of a security examiner for a financial institution. In an application for securities, the original application, together with any technical department reports regarding cost of improvements, is referred to this department for report. The investigator goes over the matter, studies the past financial history of the utility and looks up its present commercial standing. His report to the commission states whether in his judgment the price at which the utility proposes to sell the securities is fair.

HOW THE COMMISSION WORKS

While the commission has the right to challenge rates and of its own initiative to require the utilities to adhere to certain prescribed standards both of construction and of service, by far the greater part of its work originates from complaints. It recognizes two kinds of complaints, formal and informal.

Informal complaints may be made by letter, telegram, telephone message or personal visit. Sometimes the complaint is of such nature that it can be adjusted by the secretary. Otherwise, if the complaint refers to rates or service, it is sent to the bureau of rates and service. There an attempt is made to adjust the matter by correspondence. Many informal complaints are so settled.

In case the bureau decides that it is necessary to use an inspector to investigate the complaint, it is sent back to the secretary, who in turn sends it to the technical department concerned. If this department through its field engineers or by correspondence is not able to adjust matters, the complaint is referred to the commission itself. In such event the complainant is usually requested to file a formal complaint.

Informal complaints pertaining to matters other than rates or service are, upon their receipt, sent by the secretary to the technical department to which they belong. From then on the procedure is as before described.

Of formal complaints, which must be in writing, there are two kinds, adversary and application. The first is a complaint against a utility. The second is an application by a utility for permission to do something—as, for instance, to issue securities.

Ordinarily the utility must file an answer to an adversary complaint within ten days. If it satisfies the complaint before making answer, the complainant is required to file a written acknowledgement. If the complaint is not satisfied, it is docketed for public hearing.

If the complaint is with reference to rates, the commission after hearing the case may decide that a valuation is necessary. At the discretion of the commission this may be made entirely by its staff or a "barebone" inventory may be required from the utility. This inventory is simply a list of the physical property. The technical experts of the commission fix the unit prices of the various items and determine the value. The inventory is also checked by the field men connected with the technical department concerned.

Applications for securities must set forth the amount, nature, rate of interest, price and purpose of sale. All such applications except by unanimous vote of the commission must lay over ten days. No notice of the application is given to the public except through the daily press. The matter is then heard. If the securities are for extensions or betterments, the record is submitted to the proper technical department for a report as to whether the estimates are fair and reasonable as to cost and the amount of material necessary. If the improvements have been paid for out of earnings, a field force is sent out to see whether they have been made as represented. If the securities are desired for refunding purposes, the matter is referred to the investigator of securities. If all the reports are favorable, the commission issues a formal order authorizing the sale of the securities.

Hearings on formal complaints are usually held in Columbus, although at the discretion of the commission they may be held elsewhere. For all hearings of importance at least two of the commissioners are present, although one commissioner may be designated to act, and his finding if confirmed by the commission is deemed its decision. In the hearings the commission exercises good business judgment and disregards many of the little technicalities which so often delay the case and confuse the real issue in court proceedings.

Just as commissions need to know more about electric railways, so the carriers need to know more about the regulatory bodies. The foregoing Ohio article and those on the New York Second District Commission in the issues of Dec. 30, 1916, and Feb. 3, 1917, have described the plans of organization which these commissions have found most effective in the administration of their duties. To these in the future will be added articles describing special work carried on by various commissions—all designed to foster a better understanding of the precepts and practices of public utility regulation.—EDS.

Rhode Island Company in Unsound State

Preliminary Survey of Engineers for Investigating Commission Shows Upward Trend of Costs—Credit Not Good and Operating Expenses Must Be Reduced or Revenues Increased—President Potter Predicts \$600,000 Deficit for Year Ending June 30, 1918, Unless Relief Is Granted

THE special legislative commission investigating the finances of the Rhode Island Company held a hearing on Oct. 24 in Providence at which detailed discussion was carried on in regard to the preliminary report of its consulting engineers. This report, as shown in the following abstract, deals with the operations of the company for the last decade and its present financial difficulties.

On Oct. 25 additional statements relative to the company's need of immediate relief were made to the commission by Rathbone Gardner, chairman of the federal trustees of the property, and A. E. Potter, president of the company. These are also published in part herewith.

OPERATING EXPENSES MUST BE REDUCED OR REVENUES INCREASED

The detailed examination carried on by the commission's engineers, Sloan, Huddle, Feustel & Freeman, enabled them to make various observations that indicate the need of financial relief for the company. For example, it is explicitly stated in their report that the credit of the company is not good. There is not sufficient revenue after operating expenses and taxes to make a safe margin for rentals and bond interest, and either operating expenses must be reduced or revenues increased.

In order properly to maintain the property, however, larger yearly amounts are needed than those expended during the last ten years, and the present advance in both material and labor costs makes it unlikely that any saving can be made by improved methods of handling the work. Moreover, the expenditures for new pavements to replace pavements previously provided by the company, together with the labor cost on track replacements in those cases where the tracks had some years of useful life remaining, totaled \$520,439 for the last six years, or an average of \$86,740 a year. This amount, the engineers say, is an indirect tax on car riders, for the benefit of property owners and vehicular traffic, that the public will do well to consider.

The transportation and power costs will be further increased, it is stated. The average speed, while it

appears somewhat slow, is the result of numerous stops, narrow streets and traffic congestion. The observed speed in outlying districts appears high. The taxes in recent years have been unduly high, and careful consideration should be given to the possibilities of reducing this burden.

In regard to revenues, the engineers say that these would be materially increased by the complete abolition of jitney operation. The increase in gross for the last two years has been much greater than the average for the last ten years, largely owing to industrial activity, but it is doubtful that the increase should be expected to continue at the present rate. A charge of 1 cent for transfers would mean \$150,000 more revenue a year, if the same number were issued. It is certain, however, that they would be considerably reduced and patrons would call for through lines. A transfer charge, the engineers believe, is only satisfactory as an arbitrary method of increasing revenues regardless of discrimination between patrons. No calculations have been made regarding a flat increase in fare, but the results are said to be easy to compute, allowances being made for a decrease in business. The possibilities of a zone system will require considerable study, which has not been given at present.

GENERAL SHOWING OF THE COMPANY

The general financial results of operation for the ten fiscal years ended June 30, 1917, are given in Table I. The Narragansett Pier Railroad, a small steam line operated by the company, is not covered by this and the following tables. Since 1902 the company has paid dividends in only five years, the rate ranging from 3 to 6 per cent. Since 1913 no dividends have been declared. In the last fiscal year the net earnings applicable to dividends were only 0.39 per cent. The company has outstanding \$5,120,887 of notes and \$9,685,500 of stock—total, \$14,806,387.

On the property owned plus improvements to leased lines (Table II), the average amount available for surplus or dividends, after deducting total charges (including rentals and interest) from the total income obtained from all sources, was 3.32 per cent on the cost

TABLE I—GENERAL FINANCIAL SHOWING OF RHODE ISLAND COMPANY FOR LAST DECADE (Narragansett Pier Railroad Excluded)

Year Ended June 30	Total Operating Revenue	Total Operating Expenses	Taxes	Rentals	Interest Charges	Other Miscellaneous Charges	Total Charges	Available for Surplus or Dividends	Non-Operating Income	Available Plus Non-Operating	Dividends	Surplus for Year
1908.....	\$4,194,503	\$2,573,674	\$282,847	\$1,065,792	\$116,288	.....	\$4,038,601	\$155,902	\$22,520	\$178,422	.....	\$178,422
1909.....	4,160,785	2,313,954	289,294	1,065,792	54,711	.....	3,723,751	437,034	32,173	469,207	\$425,520	43,687
1910.....	4,440,809	2,537,686	300,683	1,065,792	25,196	.....	3,929,357	511,452	62,114	573,566	510,624	62,942
1911.....	4,675,943	2,779,990	309,984	1,065,792	18,902	.....	4,174,668	501,275	100,282	601,557	581,130	20,427
1912.....	4,989,610	3,147,733	370,758	1,142,792	28,209	.....	4,689,492	300,118	94,934	395,052	290,565	104,487
1913.....	5,264,025	3,085,180	417,602	1,142,792	73,721	.....	4,719,295	544,730	129,532	674,262	581,130	93,132
1914.....	5,329,934	3,387,228	449,997	1,149,792	125,572	.....	5,112,589	211,345	144,658	356,003	.....	356,003
1915.....	5,031,333	3,386,084	465,075	1,149,792	255,083	\$1,460	5,257,494	*226,161	121,756	*104,405	.....	*104,405
1916.....	5,432,273	3,525,618	483,614	1,149,792	243,797	4,476	5,407,297	24,976	119,783	144,759	.....	144,759
1917.....	5,853,730	3,968,250	530,943	1,156,792	267,291	11,056	5,934,332	*80,602	117,926	37,324	.....	37,324

*Deficit.

TABLE II.—TOTAL INCOME OF RHODE ISLAND COMPANY EXPRESSED AS RETURN ON COST OF REPRODUCTION OF PROPERTY OWNED, PLUS IMPROVEMENTS ON LEASED PROPERTY, AND ON CAPITAL STOCK (Narragansett Pier Railroad Excluded)

Year Ended June 30	Reproduction Value of Property Owned Plus Improvements on Leased†	Capital Stock	Total Income—		Total Charges—		Available for Surplus or Dividends					
			Operating Plus Non-Operating		Operating Plus Taxes, Rentals and Interest		With no Additional Allowance for Depreciation			After Deducting Additional Depreciation‡		
			Amount	Per Cent on Reproduction Value	Per Cent on Capital Stock	Amount	Per Cent on Reproduction Value	Per Cent on Capital Stock				
1908.....	\$7,736,626	\$7,780,400	\$4,217,023	\$4,038,601	\$178,422	2.31	2.29	*\$36,038	*0.47	*0.46		
1909.....	7,865,309	8,510,400	4,192,958	3,723,751	469,207	6.11	5.51	253,688	3.23	2.98		
1910.....	7,989,504	9,685,500	4,502,923	3,929,357	573,566	7.18	5.92	357,025	4.47	3.69		
1911.....	8,556,437	9,685,500	4,776,225	4,174,668	601,557	7.03	6.21	380,350	4.44	3.93		
1912.....	9,044,021	9,685,500	5,084,544	4,689,492	395,052	4.37	4.08	155,517	1.72	1.60		
1913.....	10,039,207	9,685,500	5,393,557	4,719,295	674,262	6.72	6.96	426,536	4.25	4.40		
1914.....	11,606,532	9,685,500	5,468,592	5,112,589	356,003	3.07	3.68	95,378	0.82	0.98		
1915.....	12,247,845	9,685,500	5,153,089	5,257,494	*104,405	*0.85	*1.08	*370,308	*3.02	*3.82		
1916.....	12,461,061	9,685,500	5,552,056	5,407,297	144,759	1.16	1.49	*122,899	*0.99	*1.27		
1917.....	12,678,125	9,685,500	5,971,656	5,934,332	37,324	0.30	0.39	*232,120	*1.83	*2.40		
Total.....	\$100,224,667	\$93,774,800	.....	.....	\$3,325,747	3.32	3.55	\$907,129	0.91	0.97

*Deficit.

†Ford, Bacon & Davis cost of reproduction for property owned as of date Nov. 1, 1916, taken as applicable to June 30, 1917, and adjusted to earlier years by deducting improvements on property owned as reported by the company for each year. To the adjusted reproduction value of property owned as thus found for any year was added the improvements on leased property to the end of that year as reported by the company.

‡Ford, Bacon & Davis estimated an additional allowance for annual depreciation of \$273,880 to be necessary for all property either owned or leased, which is equal to 0.823 per cent on the total cost of reproduction. The additional depreciation for each year was computed by taking this percentage of the adjusted total cost of reproduction of all property either owned or leased for that year.

of reproduction and 3.55 per cent on the capital stock. With the Narragansett Pier Railroad included, the percentages are 3.26 and 3.49. After deducting additional depreciation charges deemed necessary, the average return on the reproduction cost becomes 0.91 per cent and on the capital stock 0.97 per cent. With the steam line included, the percentages are 0.82 and 0.88. The reproduction cost and depreciation estimates are based on the figures in the report of Ford, Bacon & Davis filed by the company. These were accepted for the purpose of the commission engineers' preliminary report, since a thorough check was not possible in the time available.

On the basis of the reproduction cost of property owned and leased, the average annual amount available for rentals and interest and for surplus or dividends, after providing for only operating expenses and taxes, was 5.05 per cent; and after deducting the additional depreciation necessary, 4.23 per cent. With the Narragansett Pier Railroad included, the percentages are 5 and 4.18.

FACTORS AFFECTING THE REVENUE

From 1909 to 1913 the annual increases in total revenues were fairly regular, but in 1914 there was a marked falling off in the increase over the preceding year. In 1915 there was an actual decrease of almost

5.5 per cent from the operating revenue of the previous year. Since then there have been exceptional gains, doubtless to be attributed to the growth of industrial activity. The average annual increase for ten years was 3.99 per cent.

According to the engineers, approximately 14,840 automobiles are operated in territory served by the Rhode Island Company. By considering the automobile as used every day in the year the losses in revenue were calculated as follows: 5 cents for each automobile, \$270,830; 10 cents, \$541,660; 15 cents, \$812,490, and 20 cents, \$1,083,320. It is difficult to say which figure represents the actual conditions, but it would seem as though 10 cents a day were not an unreasonable amount to assume. Nothing can be done to change these conditions, it is said, and the figures are given only to indicate one of the economic problems which the company has to meet.

The number of jitneys operated at any one time has varied from sixty to 550. At the present time about 100 are in regular operation. An all-day count of the passengers carried on the three principal jitney routes on Aug. 8, 1917, indicated that \$637 a day was collected on these routes. For all the operation, \$300,000 a year is a reasonable estimate of the loss in revenue to the company through the jitneys. This factor, it is said, is within the hands of the public as far as control is

TABLE III.—OPERATING EXPENSES OF RHODE ISLAND COMPANY EXPRESSED IN PER CENT OF TOTAL OPERATING REVENUE AND IN CENTS PER PASSENGER CAR MILE (Narragansett Pier Railroad Excluded)

Year Ended June 30	Total Operating Revenue		Way and Structures		Maintenance of Equipment		Power		Conducting Transportation		Traffic		General and Miscellaneous		Express Department		Total Operating Expenses	
	Per Cent	Per Car Mile	Per Cent	Per Car Mile	Per Cent	Per Car Mile	Per Cent	Per Car Mile	Per Cent	Per Car Mile	Per Cent	Per Car Mile	Per Cent	Per Car Mile	Per Cent	Per Car Mile	Per Cent	Per Car Mile
1908.....	100	32.13	7.62	2.45	8.29	2.66	9.48	3.05	25.25	8.11	.....	.....	9.08	2.92	1.64	0.53	61.36	19.72
1909.....	100	33.01	4.76	1.57	6.37	2.11	8.85	2.92	24.24	8.00	.....	.....	9.72	3.21	1.67	0.55	55.61	18.36
1910.....	100	34.34	8.36	2.87	5.54	1.90	9.14	3.13	22.36	7.69	0.01	0.00	10.03	3.45	1.70	0.58	57.14	19.62
1911.....	100	35.08	9.42	3.30	5.62	1.97	9.76	3.42	22.91	8.04	0.02	0.01	10.05	3.53	1.67	0.59	59.45	20.86
1912.....	100	34.53	8.01	2.76	5.79	1.99	13.47	4.64	23.40	8.06	0.03	0.01	10.26	3.53	2.10	0.72	63.09	21.71
1913.....	100	34.40	8.01	2.75	5.48	1.88	10.24	3.53	23.29	8.01	0.05	0.02	9.32	3.21	2.22	0.76	58.61	20.16
1914.....	100	33.68	9.02	3.04	5.65	1.90	11.30	3.81	26.47	8.91	0.03	0.02	8.66	2.91	2.49	0.84	63.62	21.43
1915.....	100	31.71	10.84	3.44	6.64	2.11	10.25	3.25	27.89	8.84	0.04	0.01	8.95	2.84	2.69	0.85	67.30	21.34
1916.....	100	33.97	9.89	3.36	6.30	2.14	9.34	3.17	27.57	9.37	0.02	0.00	8.97	3.05	2.81	0.96	64.90	22.05
1917.....	100	35.69	8.66	3.09	6.26	2.23	12.49	4.46	27.03	9.65	0.01	0.00	10.11	3.61	3.23	1.15	67.79	24.19

concerned. The convenience of jitney service for certain distances is without question, but that it cannot take the place of electric railway service completely under present conditions is equally without question.

TREND IN MAINTENANCE AND POWER EXPENSES

The operating expenses, expressed in percentages of operating revenues and cents per passenger car-mile, are shown in Table III. The average yearly amount expended for maintenance and depreciation for the last decade was 4.95 cents per car-mile, or 14.65 per cent of the gross revenue. This amount, the engineers state, is less than what is deemed necessary by other first-class systems.

In 1912 the total cost of power reached the maximum, being 4.64 cents per car-mile. The high cost for that year was due to heavy renewal charges which were carried into the operating accounts. Moreover, the changes being made in generating equipment very likely reduced the operating efficiency of the station for that year. In the years following the costs were materially reduced and remained normal until the high price of coal became effective. Fig. 1 shows the average cost of power per kilowatt-hour.

The average rate paid for coal during 1917 was \$6.07, being almost double the rate for the years previous. This increased the cost of operation 1.29 cents per car-mile or about \$211,600. During the late winter, when a coal shortage seemed imminent, the company bought large amounts of coal in the open market at prices between \$8 and \$11 per ton. As a result it had on hand 23,920 tons of coal on July 1, 1917, which had cost an average of \$8.26 per ton. The new contract for coal provides for purchase at the mine at whatever price is established by the federal government; to this price must be added rail freight to tidewater and finally water transportation to Providence, which is at a higher rate than the barge contract which just expired. The net result will be that contract coal will be at least \$1 higher than it was the last year; and with the high priced coal now in storage, it is certain that the coal cost for 1918 will be even greater than for 1917.

HOW LABOR AND MATERIAL COSTS HAVE JUMPED

Of the total revenue obtained from all sources nearly 39 per cent was expended in 1917 for labor necessary for operation. The total expenditure for labor in eight of the last ten years was materially greater than for the preceding year. Fig. 2 shows the rates paid per hour over the same period. This chart shows an increase for every year in the average rate paid to all employees. For the whole period the increase totaled 6 cents or 27 per cent more than the average rate in 1908. An increase was awarded on June 1, 1917, the effects of which are not reflected in either of the charts. The total amounts for the year, therefore, will be increased slightly, and there will also be an increase in the average rate. It is evident, the engineers assert, that the expenditure for labor will continue to increase year by year.

Computing a weighted average for materials actually bought in 1917 which had also been bought in any of the four preceding years, and using as a basis 1917 prices and 1913-1916 average prices, both of which prices were actually paid by the company, the engineers

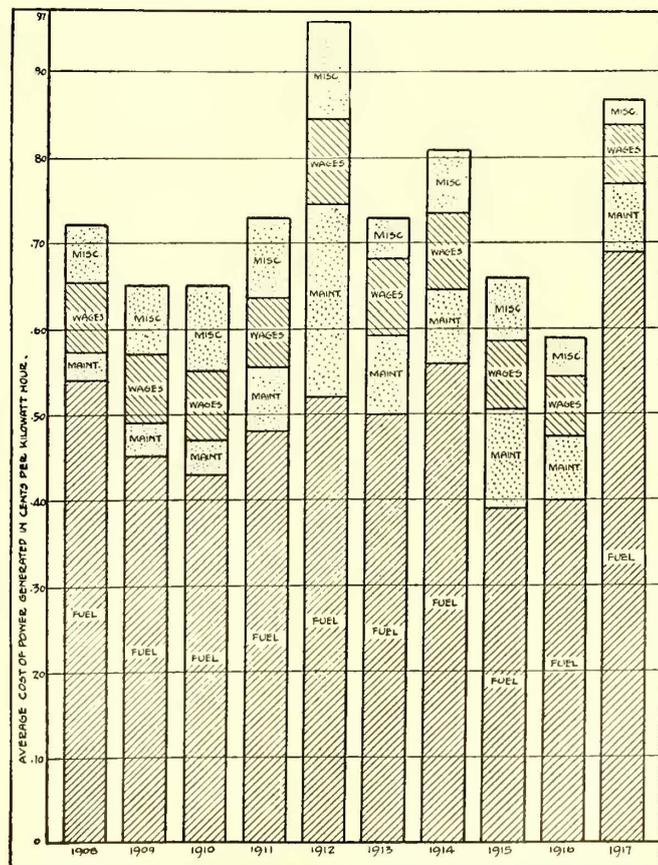
found that, estimating on the basis of the average consumption of these materials over the last five years, the cost index figure for 1917 was \$0.5011 as compared with \$0.4010 for the four preceding years, or an increase of practically 25 per cent. At the present time prices are still up, and it is impossible to forecast where they will be in the future.

OTHER EXPENSES, TAXES AND RENTALS

The reserve set up for injuries and damages makes up the major portion of the total general and miscellaneous expense account, having averaged 62 per cent of it for ten years. For the last four years the company has been setting aside 6 per cent of its total operating revenue to take care of this item. Since injuries and damages show a general trend toward an increase, it is scarcely to be expected that any radical reduction can be looked for in the account.

The expenses for the express department have shown a steady increase since 1908, but the department is more than self-supporting and the revenues have increased more rapidly than the expenses.

The percentage that the total taxes were to the operating revenue was 6.74 in 1908. The percentage reached its lowest point of 6.63 in 1911, from which it increased every year but one up to 1917, when it mounted to 9.04. If the percentage were based on the revenue obtained from passengers only, it would equal 9.82, which means that of every nickel taken in practically 10 per cent or 0.5 cent has to be paid out in taxes. To express the total change over ten years, the taxes in 1917 were 89 per cent greater than in 1908, although the operating revenue had increased only 41 per cent



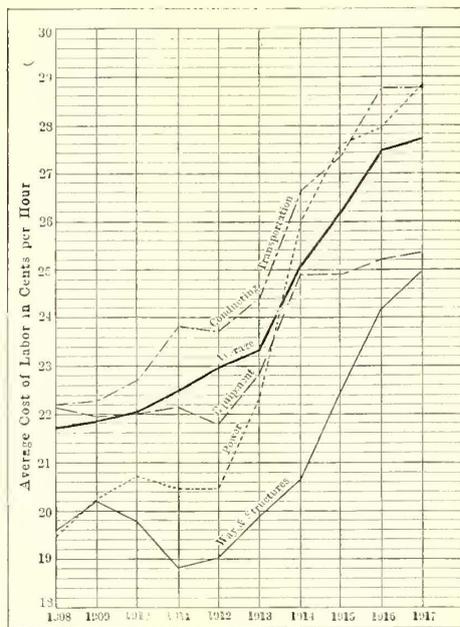
RHODE ISLAND—FIG. 1—AVERAGE COST OF POWER PER KILOWATT-HOUR FOR LAST DECADE

and the cost of reproduction of all companies only 28 per cent. The growth of the tax burden is shown in Fig. 3.

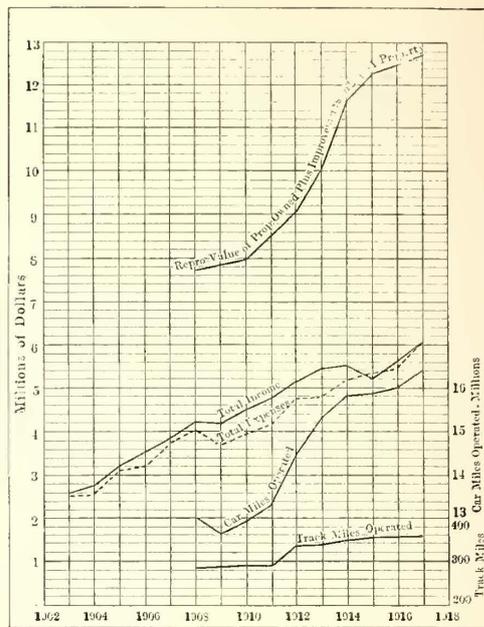
The engineers prepared a statement of rentals paid for all leased properties, their outstanding securities and total cost of reproduction adjusted to the time they were taken over, together with the per cent return that the rentals were of both these values for the last ten years. The average rate of return on securities in 1917 was 5.16 per cent, and on the cost of reproduction 5.66 per cent. The highest rates in the decade were 5.90 per cent and 5.47 per cent respectively. These rates, the engineers state, indicate that either on total securities or cost of reproduction the rentals are moderate as compared to those for similar properties elsewhere.

Fig. 4 shows the relation between value, income, expenses, car-miles and track-miles in recent years. From 1908 to 1917 the track mileage operated increased from 285.01 to 351.16, and the car-miles per track-mile from 45,809 to 46,311. The miles of track increased 24.2 per cent and the car-miles 26 per cent, indicating that approximately the same service per mile of track was maintained. Operating revenue per mile of track increased from \$14,717 to \$16,528, and the revenue passengers per car-mile rose from 6.07 to 6.65. The oper-

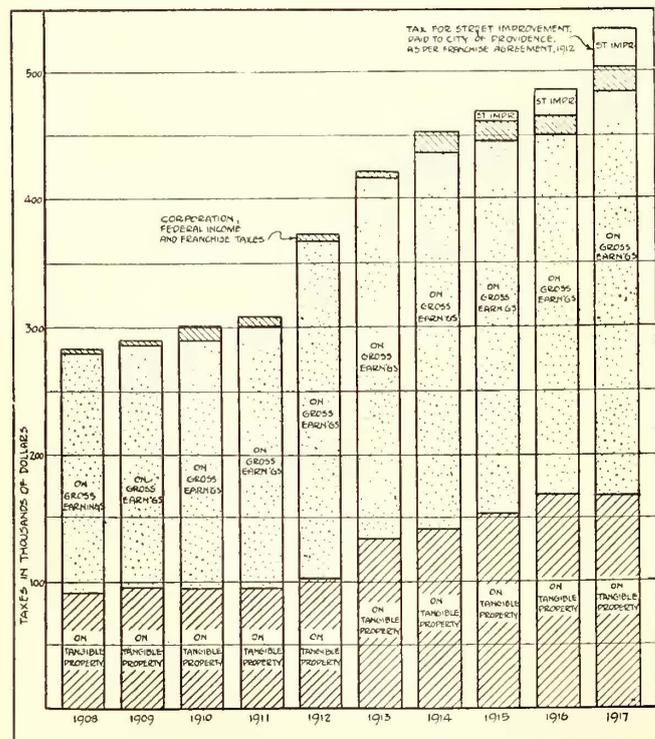
ating revenue per car-mile increased from 32.13 cents to 35.69 cents. In 1908 the revenue passengers were 79,175,629 and the transfer passengers 11,579,015, the corresponding 1917 figures being 109,084,546 revenue and 15,590,691 transfer passengers. The transfer ratio was held within close limits during the period.



RHODE ISLAND—FIG. 2—AVERAGE COST OF LABOR IN CENTS PER HOUR FOR LAST DECADE



RHODE ISLAND—FIG. 4—INCREASES IN VALUE, INCOME, EXPENSES, CAR MILES AND TRACK MILES



RHODE ISLAND—FIG. 3—GROWTH OF TAX BURDEN DURING LAST DECADE

The passenger revenue per revenue passenger in 1917 was 4.96 cents, a decrease from 5.01 cents in 1909.

MR. GARDNER URGES IMMEDIATE RELIEF

In commenting upon the foregoing report of the engineers for the investigating commission, Mr. Gardner spoke for the federal trustees of the property (under the New Haven dissolution plan) in part as follows:

“Any candid examination of the affairs of the company was found to show that it has been heading for disaster. The greatest troubles seem to be two: (1) Increased cost of carrying on the business; (2) the greatly increased use of automobiles. The company has to-day no borrowing power. At any moment its financial weakness may compel radical curtailment of service. We say then, fully conscious of our trust, that the company needs relief and needs it immediately. We had hoped against hope that conditions confronting the company would improve, but conditions have been working not for but against the company.

CONDITIONS GROWING WORSE, SAYS MR. POTTER

Since June 30, 1917, which is the end of the period covered by the engineers' report, the financial condition of the Rhode Island Company has grown worse. This fact was emphasized by President Potter before the commission. There has been a total increase of only \$47,020 in the operating revenue for July, August and September of this year, while the operating expenses have increased \$183,762, an excess of \$136,742.

The rise in expenses was due to the fuel and supply costs and the increase in wages. The August and September operating costs were affected largely by wages, concessions having been granted which amount practi-

cally to 15 per cent of the entire payroll. It is estimated that the payroll for the next year will be increased approximately \$360,000 for the same hours of labor. The present price which the company is obliged to pay for coal, including marine and war insurance, is now in excess of \$7.79 a ton. In spite of a constant effort to keep the supply up, the storage pile on Oct. 6, 1917, had been reduced to 15,004 tons, with only 2150 tons available from the overhead pocket of the station. Moreover, the company, in order to keep its lines in a safe condition, has been obliged to hire outside track labor at a higher rate than it is paying its own force.

For the nine months ended Sept. 30, 1917, after paying its operating expenses and fixed charges, the company had an actual deficit of \$119,743. From present indications, said Mr. Potter, this deficit by the end of the calendar year will amount to at least \$300,000, even without allowing for any depreciation reserve as recommended by Ford, Bacon & Davis. And for the fiscal year ending June 30, 1918, with the present prices of labor and material continuing, the company will fall short at least \$600,000 of the amount necessary to meet its operating expenses and fixed charges, unless some relief is granted.

St. Paul Orders Equipment for the Cascade Electrification

New Types of Locomotives Especially Designed for Passenger Service Will Be Used—Delivery Specified to Begin About the Close of the Year 1918

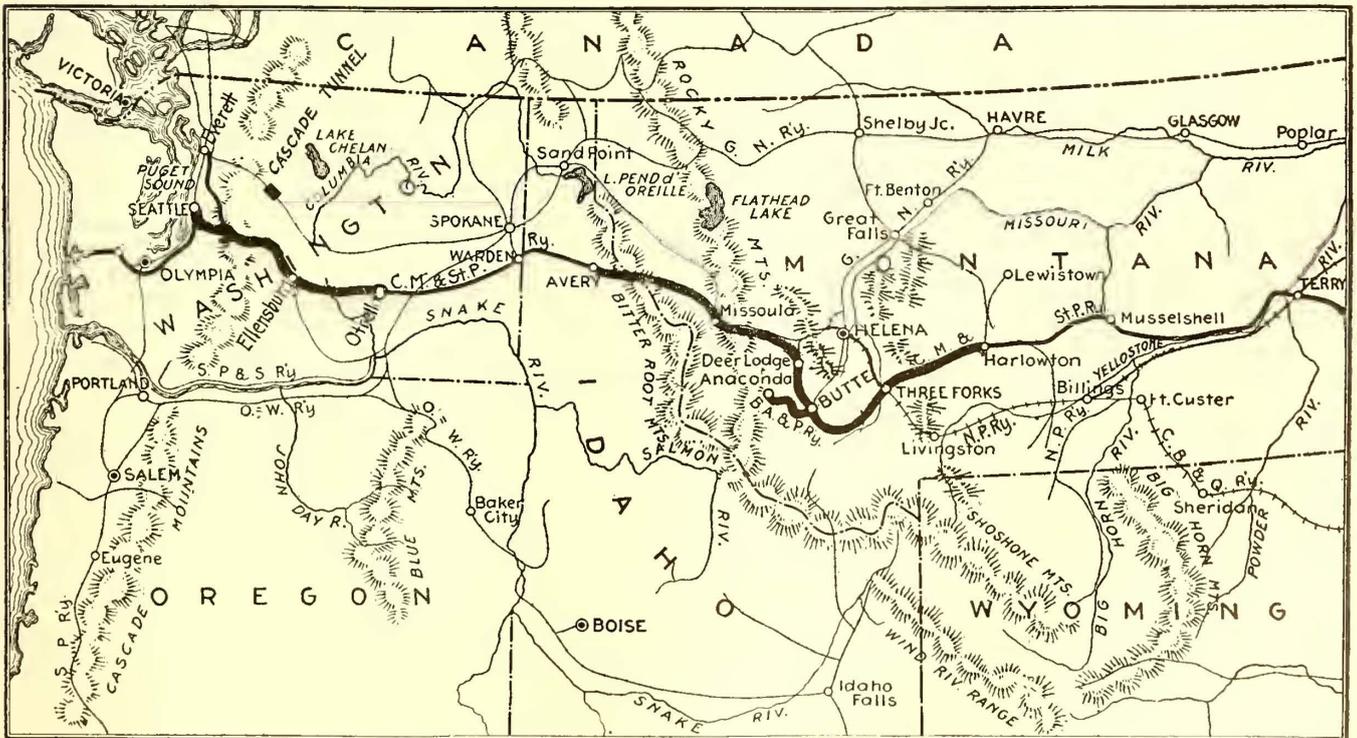
THE Chicago, Milwaukee & St. Paul Railway on Oct. 29 placed orders for the substation equipment of the 216.9 (route) mile Othello, Seattle and Tacoma division, and also for seventeen locomotives to be used on either the first or second electrifications as hereinafter detailed. To hasten delivery dates on account of the high cost of fuel oil the orders were divided between the Westinghouse and General Electric companies as follows: To the Westinghouse Electric and Manufacturing Company, ten locomotives and three substations, namely those at Kittitas, Doris and Taunton. To the General Electric Company, seven locomotives and five

substations, located at Tacoma Junction (formerly Tacoma Shops), Renton (including former Black River Junction), Cedar Falls, Hyak and Cle Elum. Each substation includes one or more 2000-kw. motor-generator sets and corresponding high-tension apparatus.

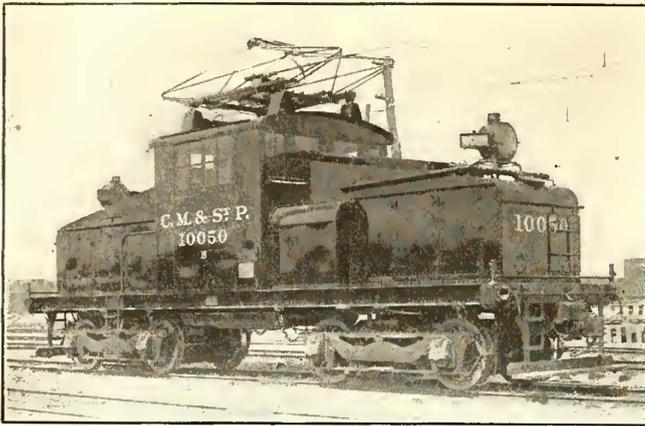
The passenger locomotives were guaranteed by the manufacturers to provide a capacity sufficient to haul twelve all-steel cars at 25 m.p.h. on a 2 per cent grade.

The locations of the substations, the numbers of units per station, and the mileage between stations are given in the table on page 820.

The general features of the extension of the St. Paul



ST. PAUL ELECTRIFICATION EXTENSION—MAP OF PRESENT AND PROSPECTIVE ELECTRIFICATIONS
 Heavy line east of Avery shows present electrification, heavy line west of Othello shows electrification under way for which locomotives have just been authorized



ST. PAUL ELECTRIFICATION EXTENSION—75-TON SWITCHING LOCOMOTIVE

electrification of which this new equipment will form a part were covered in an article in the issue of the *ELECTRIC RAILWAY JOURNAL* for July 21, 1917, page 92. The present electrified section, that now in process of electrification, and the relation of these two to the company's trackage in Montana and Washington, are indicated on the accompanying map. The route mileage of electrified road between Harlowton and Avery is 437.6, and this added to the new mileage makes a total of 654.5 route-miles.

SUBSTATION APPARATUS

The 3000-volt d.c. motor-generator sets to be supplied will be similar to those previously furnished by the General Electric Company, namely, the combination

LOCATION OF SUBSTATIONS, NUMBERS OF UNITS AND MILEAGE BETWEEN STATIONS		
Substation	No. of 2000-kw. Motor-Generator Sets	Mileage Between Stations
Tacoma Junction	2	
Renton	1 (room for 2)	28.7
Cedar Falls (foot of 20-mile, 1.7 per cent grade)	2	27.2
Hyak (other side of grade)	2 (room for 3)	21.7
Cle Elum	1 (room for 2)	29.0
Kittitas	1 (room for 3)	31.6
Doris (on 2.2 per cent grade)	2 (room for 3)	23.0
Taunton (end of line)	2	34.9

of a 2500-kva., 2300-volt, 60-cycle motor and two 1000-kw., 1500-volt d.c. generators connected in series. These sets will carry three times their rated load, *i.e.*, 200 per cent overload, for five minutes. The efficiencies of the General Electric sets are to be: at 50 per cent overload, 92.6 per cent; at full load, 92.4 per cent; at one-half load, 88.8 per cent. The Westinghouse sets will be substantially the same in regard to capacity and efficiency.

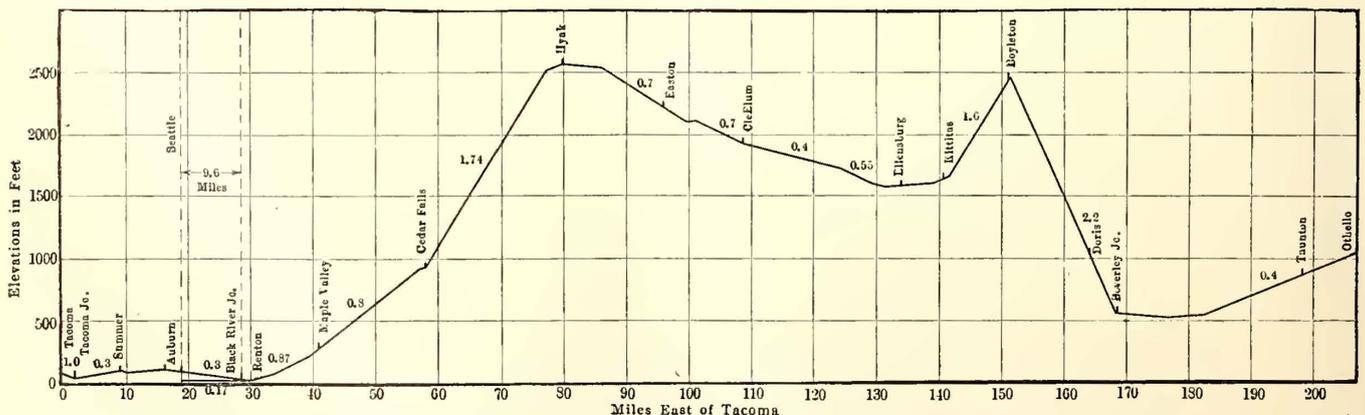
At Tacoma and Renton, 55,000-volt power covering about one-third of the requirements will be received from Stone & Webster plants, while the remainder, at 102,000 volts, will come from the Washington Water Power Company. There will be installed one 2500-kva. transformer for every 2000-kw. motor-generator set.

LOCOMOTIVES

Of the seven locomotives ordered from the General Electric Company, two are switching locomotives of the steeple-cab type illustrated. These are duplicates of two already in use, the details of which appeared in the issue of this paper for March 4, 1916, page 465. Each weighs 75 tons, and has a tractive effort of 22,000 lb. and a rating of 200 amp. at 3000 volts, corresponding to about 550 hp. The heavily braced and reinforced underframe is mounted on swivel trucks, each carrying two GE-225 motors, nose suspended. The endeavor has been to use parts of the switching locomotive equipment which would be interchangeable with the corresponding parts on the road locomotives. Thus, for example, a compressor much larger than necessary is installed in order to obviate the necessity for carrying extra parts.

The passenger locomotives will be the first St. Paul machines designed especially for passenger service. While the details of design are not yet ripe for disclosure, it may be stated that the drive on the General Electric locomotives will resemble in many respects the bi-polar gearless design of the New York Central locomotives. The St. Paul locomotives, however, will have twelve motors instead of eight. They will be capable of hauling a 960-ton train at 25 m.p.h. over a ruling grade of 2.2 per cent and at 60 m.p.h. over level track. The continuous output rating, 860 amp. at 3000 volts, is equivalent to 3100 hp. The Westinghouse locomotive drive will be of the quill type.

The General Electric passenger locomotives will go directly into service on the new Cascade electrification, but the ten Westinghouse locomotives will probably replace ten out of twelve General Electric locomotives on the present electrification. The latter locomotives will enter freight service, as they can be made similar to the regular freight engines merely by changing the gear ratio. They were really designed for freight service but were geared for passenger service as it was not certain as to the use to which the locomotives would be put. This brings to mind the fact that the only important differences between the locomotives for the two services heretofore were the gear ratio and the pro-



ST. PAUL ELECTRIFICATION EXTENSION—PROFILE OF OTHELLO, SEATTLE AND TACOMA DIVISION

vision of a heater for passenger trains. In the future, however, freight and passenger machines will be widely different. The passenger locomotives must not only provide for heating equipment but must also be capable of operating at the highest speeds without regard to water, snow and other weather conditions. For local passenger service the company will continue to operate the split halves of two existing locomotives.

As to deliveries it is provided that the Westinghouse Company is to deliver the first two locomotives in fifteen months from the signing of the contract, and the remainder thereafter at the rate of two locomotives per month, completing the entire order of ten in four months. Delivery of the General Electric equipment is specified at fourteen months. This important extension of the electrification is, like the preceding work, being carried out under the supervision of C. A. Goodnow, vice-president Chicago, Milwaukee & St. Paul Railway.

Public Utility Management*

How the Public, the Employee and the Investor Are All Concerned in a Partnership Arrangement with Mutual Responsibilities

BY C. NESBITT DUFFY

Vice-President and General Manager Manila Electric Railroad & Light Corporation, Manila, P. I.

THE management of a public utility will here be discussed from the standpoint of the public, the employee and the investor. These points are taken up in the order named not because of their respective importance or chronological precedence but simply in turn in the light of their joint relationships and mutual partnership responsibility.

MANAGEMENT FROM THE STANDPOINT OF THE PUBLIC

The public has the right to expect from a utility the best service practicable at the lowest cost possible under efficient management, taking into consideration the conditions under which the service is furnished and all of the elements of cost involved. The cost should include not only that of operating and maintaining the property used in furnishing the service, but all investment charges as well, including insurance, taxes, depreciation, provision for extraordinary contingencies and a fair return on the investment. A utility should provide and maintain reasonably adequate facilities and furnish reliable, safe and sufficient service. It should have its employees thoroughly trained in the performance of their duties, which should be done, with due regard for their responsibility to the public.

The management should conduct the business according to a wise, progressive, fair and liberal policy. The company should take part in all public movements looking to the benefit of the community served. It should cultivate and establish friendly relations with government officials, the newspapers and business interests, co-operating with them in every way possible in order to deserve, win and retain the confidence and good-will of the public. The management should not only be willing to receive but should invite fair and constructive criticism. All complaints, no matter how trivial, should be thoroughly investigated and the results explained to the complainants in a conciliatory and courteous man-

ner, regardless of whether the complainant or the company is at fault.

The opportunity of discussing its business with the public promotes not only a better understanding between the company and the public, but a better knowledge of the mutual obligations resting on both. "Service" has been defined as "giving value received." The utility which serves the public best, all things considered, serves itself best.

The employee of a utility in return for honest, faithful and loyal service has the right to equitable wages, consistent with the conditions obtaining and the character and the importance of the work performed. He is entitled to fair and impartial treatment, with the opportunity to advance solely on merit. He has the right to expect independence in his employment without regard to political, religious, social, business or personal influence. The company should take an interest in his well-being from a moral, educational, social and economic standpoint, consistent with its obligations to the public and the investor.

FROM THE STANDPOINT OF THE INVESTOR

The investor has the right to expect that the public accord to the company fair and impartial treatment, with due consideration for the conditions obtaining and the problems involved in the conduct of the business, the protection of the investment therein and its mutual responsibility for the success or failure of the enterprise. The investor has the right to expect proper co-operation on the part of the public in the use of the facilities provided. It is the duty of the company to operate its property for the convenience and best interests of the public as a whole, but due allowance should be made for the "human equation" in the work of employees. The public is obligated to observe the rules of the company, formulated for its protection, and to do its part in order to secure good service.

The investor has a right to demand that the property be operated in the most efficient manner possible, consistent with good service, good wages and good dividends, and the safeguarding of his investment. In the investor's interest the employees should be required to render honest, faithful and loyal service in return for equitable wages and fair treatment, and they should be required to perform their duties with a full realization of their responsibility to the company and to the public. They should be made to understand that they are partners in the business, that they and the company will be judged by the manner in which they perform their duties and that the success or failure of the business depends very largely upon them.

The investor is entitled, because of the risks and hazards assumed in the investment as well as the value of the service to the public, to a fair return, with adequate provision for the maintenance and the depreciation of the property.

In the conduct of the business of a utility the public is entitled to good service; the employee to good wages; the investor to good dividends. Anyone who assumes the management of a utility is responsible for the accomplishment of these things, but they can be secured only through co-operative effort and the proper discharge of the mutual responsibility of the parties at interest. This is true of the ownership and operation of all public utilities.

*Abstract of paper recently delivered before A. E. R. A.—N. E. L. A. joint company section No. 5.

"So the People May Know"

Series of Advertisements Being Used on Doherty Traction Properties to Aid in the Securing of Higher Fares—Already Proving Their Worth

ANOTHER "So the People May Know" series of advertisements, like that used some time ago on the Toledo property, is now being published by Henry L. Doherty & Company for its various other traction

"So the People May Know"

No. 1 In our series of friendly talks with patrons

For the next few weeks we want to talk over some of our problems with our patrons.

The Company is now facing problems that will vitally affect the growth and prosperity of this community.

Everything that goes to make up the street car ride has increased in price so rapidly the past few months that now its cost has almost doubled.

With other necessities of life, such as milk, flour, sugar, etc., increased costs can be passed on directly to the consumer.

But the Rate of Return to the Street Car Company is Fixed.

The buying power of its dollar in the market has decreased month by month until today it takes \$1.80 to purchase materials, supplies, labor, etc., which three years ago we purchased for \$1.00.

But the Car Fare Has Not Been Increased

With still higher operating costs staring us in the face, our patrons can readily realize the problems now confronting us of maintaining service as in the past.

That you may understand these problems and appreciate the grave difficulties before us, we have come out openly in the press to talk it over with you.

The people of Athens are our patrons and customers.

We want their good will and confidence.

We want their good will and confidence we can do as a monopoly.

There is a great big world of patronage we can get as a matter of good will and friendship.

If people are out of sympathy with the Street Railway Company and have but a short way to go—they will walk. If they like the Street Railway—they will ride.

Old public utility methods are a thing of the past. We are believers in the new school—new ideas—new methods.

This Company is a part of an organization that not only belongs to the new school, but really helped to found it.

We believe in a frank discussion of our problems with the people.

We believe in placing all our cards on the table face up.

We believe in playing the game openly and square, knowing that the confidence of our patrons is our greatest asset.

The volume of our street car business must be increased by every available means, good service, good will, friendship and confidence.

Profits must be earned by increased efficiency.

This progressive age has relegated the old dark room methods to the discard, along with the mule drawn cars.

Now we invite your friendly frank and free discussion of some of the problems which we are facing—problems that are yours as well as ours.

Look for our talks on Wednesdays and Sundays.

ONE OF THE ADVERTISEMENTS USED BY DOHERTY ELECTRIC RAILWAYS

tance in securing increased revenues in Bartlesville, Okla., and Meridian, Miss.

An example of the type of advertisement which Mr. Kelsey has written is shown in the accompanying illustration. The advertisements are all characterized by an expressed desire to secure and to maintain the goodwill and the confidence of the patrons. The first two show clearly the grave problem that confronts electric railways in the way of rapidly increasing costs, after which Mr. Kelsey develops the idea of the importance of electric railways to the communities served. The injustice of paving taxes is explained, and it is made clear that any burdens arising from such charges or any other excess tax must come out of the pockets of the patrons. The subject matter in the advertisements is not presented in a stilted, formal manner, but rather as it would be in a friendly chat with the car-riders. The idea of "talking it over" with the patrons is played up in the introductions to the advertisements and is consistently followed.

At Meridian, Miss., the Meridian Light & Railway Company has discontinued the sale of twenty-four-rides-for-a-dollar tickets and is now charging 1 cent for transfers. It is said that a great part of the success of the increased fares there is probably due to the recent advertisements. They are believed to have minimized the complaints regarding the higher fares. Moreover, they have been of similar use in Bartlesville, Okla., where cut-rate tickets have been abolished.

For the Hattiesburg (Miss.) Traction Company no fare increase has been made because of the advertise-

ments, but they have produced in the public mind a much better understanding of the company's difficulties. The St. Joseph (Mo.) company has not yet made an increase in fares, but the case will come before the Public Service Commission on Nov. 7.

AMERICAN ASSOCIATION NEWS

Executive Committee Meets

As this issue goes to press the executive committee of the American Association is holding a meeting at the office of the association in New York to consider the recommendations of the committee on military traffic as detailed in the issue of the ELECTRIC RAILWAY JOURNAL for Oct. 27, page 774. The suggestions involved the appointment of a representative of the association to be located at Washington for the purpose of keeping the government bureaus informed as to the facilities of electric railways for transporting war supplies. It was the sense of the transportation committee that the funds for this work should be raised by subscription among the companies and this point was also under discussion at the executive committee meeting. A report of the meeting will appear in next week's issue.

Personnel of Committee on Military Traffic

The appointments to membership on the American Association committee on military traffic are as follows: Arthur W. Brady, president Union Traction Company of Indiana, chairman; W. R. Alberger, vice-president and general manager San Francisco-Oakland Terminal Railways; C. Loomis Allen, president Allen & Peck, Inc.; W. H. Bloss, Ohio Brass Company; L. C. Bradley, district manager Stone & Webster, Houston, Tex.; H. E. Chubbuck, vice-president executive Illinois Traction system; T. C. Cherry, vice-president and general manager Rochester & Syracuse Railroad; Frank R. Coates, president Toledo Railways & Light Company; F. W. Coen, vice-president and general manager Lake Shore Electric Railway; J. F. Collins, vice-president and general manager Michigan United Railways; F. A. Davis, president and general manager Scioto Valley Traction Company; E. C. Faber, vice-president and general manager Aurora, Elgin & Chicago Railroad; F. R. Ford, Ford, Bacon & Davis, New York; C. L. Henry, president Indianapolis & Cincinnati Traction Company; J. N. Shannahan, president Newport News & Hampton Railway, Gas & Electric Company; Paul Shoup, president Pacific Electric Railway; W. C. Sparks, vice-president and general manager Rockford & Interurban Railway; Dana Stevens, vice-president Cincinnati Traction Company; R. B. Stearns, vice-president Bay State Street Railway; L. S. Storrs, president The Connecticut Company; R. I. Todd, president Indianapolis Traction & Terminal Company; C. N. Wilcoxon, president Chicago, Lake Shore & South Bend Railway; Chester P. Wilson, president Interstate Public Service Company; Britton I. Budd, president Elevated Railroads of Chicago.

The purpose of this committee is to promote cooperation with the government in military transportation and to secure a better distribution of traffic over interurban lines, especially near army cantonments.

EQUIPMENT and MAINTENANCE

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

These Articles Have Been Selected to Provoke Thought and Stimulate Discussion. All of the Technical Departments Are Represented

Steel-Tired Wheels Used in City and Interurban Service

Canadian Railway Makes Worn Steel Wheels Into Centers and Equips Them with Tires to Avoid Cost of Solid Steel Wheels

BY W. G. MURRIN

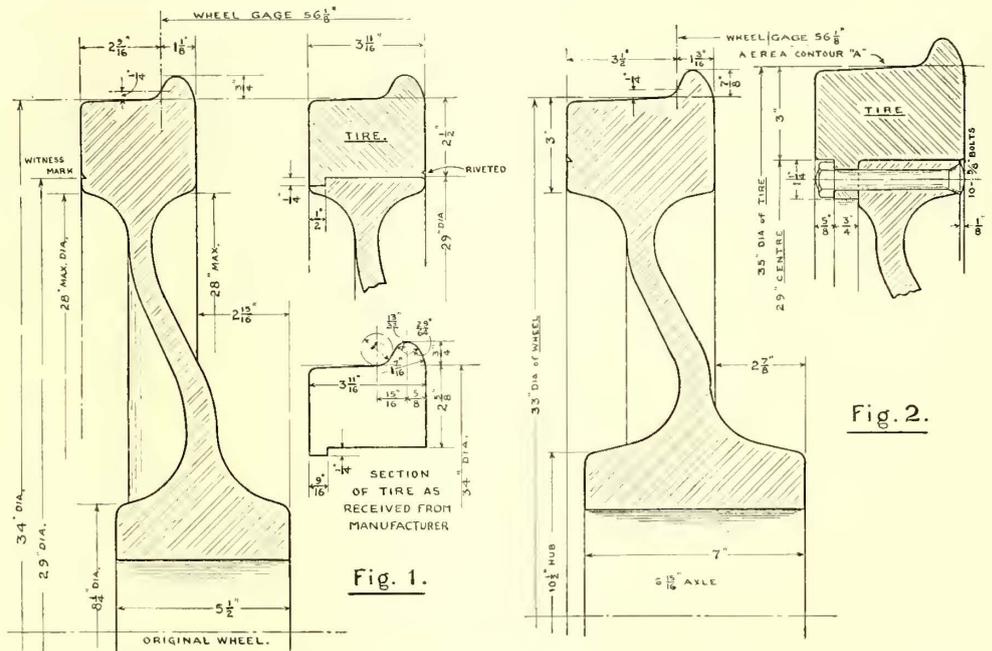
Assistant General Manager British Columbia Electric Railway, Vancouver, B. C.

Steel-tired wheels have been in common use on European electric railways for some years, but on this continent, excepting on some interurban lines, this practice is almost unknown. The British Columbia Electric Railway, operating over 350 miles of track, of which 180 miles are interurban, has developed a practice of using on new equipments rolled-steel wheels which are afterwards made into centers and fitted with tires. This procedure has been found economical under local conditions and may be of interest to some other railways since the prices of both chilled-iron and steel wheels are mounting skyward.

The large amount of interurban equipment on this railway, including ten heavy locomotives, required suitable machinery in its repair shops, including a 42-in. wheel lathe. This no doubt facilitated the introduction of steel wheels on the city equipments, but other factors such as the distance of this property from wheel makers, and local climatic conditions which, particularly in Vancouver, cause unusually slippery rails during the wet season, contributed to the development of this practice, experience having indicated that slid flats are less prevalent with steel than with chilled-iron wheels. Flats on the steel wheels, also, can be more easily remedied.

A brief history of the experiences which led to the adoption of steel tires will perhaps be of interest. In 1905 the standard wheels were 33-in. cast iron, single-web plate wheels being used for interurban equipment. A number of double truck city cars of the Narragansett

convertible type were built and equipped with 30-in. wheels, but the smaller motor clearance on temporary ballasted tracks, and the apparent tendency of the smaller wheel to develop slid flats more rapidly than the others, led to their being discarded. In 1909 two experimental sets of steel-tired wheels of English manufacture were installed, one each on city and interurban cars, and the performance of these resulted in specifying 33-in. rolled-steel wheels for thirty new city cars ordered in 1910. The following year government regulations forced the elimination of iron wheels from all interurban passenger equipments, owing to the danger from broken flanges, etc., and a number of cars were equipped with steel-tired wheels having cast-



WORN STEEL WHEELS ARE MADE INTO CENTERS AND ARE EQUIPPED WITH TIRES—CITY AND INTERURBAN WHEELS ARE SHOWN RESPECTIVELY IN FIGS. 1 AND 2

iron centers of the Midvale bolted type. The noticeable reduction of the flat-wheel nuisance which followed the use of steel resulted in extending its application to city cars, and consequently the shops were equipped with suitable machinery to care for them.

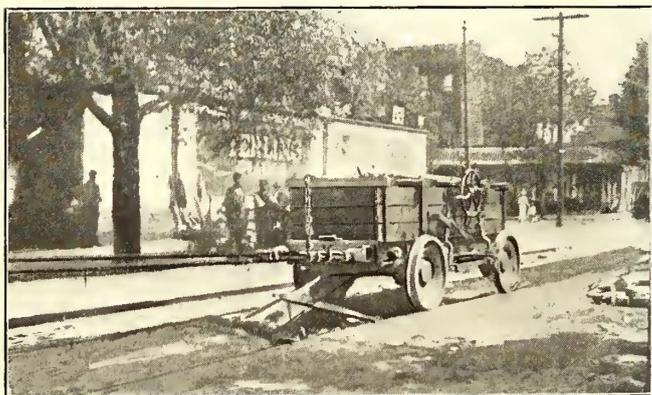
STEEL TIRES PLACED ON STEEL CENTERS

Then the price of steel wheels began to rise, and the economy of using tires suggested the idea of putting them on the steel wheels. For both city and interurban equipments rolled steel wheels are selected of suitable dimensions so that at their final turning they can

be made into centers. The English method of tire fastening by rolling the inside edge of the tire over that of the center was adopted for the city wheels, and the Midvale bolted tire, now rapidly becoming standard, was selected for the interurban wheels.

Experience so far has shown that the use of steel tires effects a saving over that of either solid steel or chilled iron wheels, even if the F. C. S. wheel is included. The amount of steel scrapped from a worn-out tire is considerably less than from a solid wheel, and a market for scrap tires can be found where the wheel centers cannot be disposed of. The life of a tire is about the same as that of a steel wheel and averages about four years, during which time four cast-iron wheels would have to be installed. According to prices as at the end of the year 1916, the costs per thousand car-miles of city equipment, including shop costs and returns for scrap, etc., were for chilled-iron F. C. S. wheels, 30 cents; rolled-steel wheels, 25 cents; and for tires, 20 cents.

There is also a saving in time for cars in shop, as during the four years a car with iron wheels will be shopped twelve to fifteen times for wheel grinding,



VIEW OF PAVEMENT PLOW HEAVILY LOADED AND JUST BEGINNING TO TEAR UP THE PAVEMENT BETWEEN THE TRACKS, AND PAVEMENT PLOW AFTER CONSIDERABLE PAVING HAS BEEN TORN UP. NOSE OF THE PLOW HAS COME OUT DUE TO RIDING UP ON EXCAVATED MATERIAL

rewheeling, etc., as compared with four to six times for turning or renewing tires. Iron wheels are scrapped mostly for slid flats, shelled-out spots or chipped flanges, and frequently a car has been shopped for wheel change after less than a week's running. Steel wheels or tires are nearly always shopped for worn flanges, the tendency of alternate wheels to wear sharp being cared for by changing the positions of the wheels under the car when half worn. Except in unusual cases such as for bad slid flats from emergency stops, proper inspection makes it possible to attend to the steel wheels at the time of general overhauling, so that no time is lost on this account, the rule being that the wheels are ready for return to the car long before the inspection and overhauling of the motors, control, brakes and other equipment on the car has been completed.

The accompanying drawings show sections of the wheels as purchased from the manufacturer, and after retiring, Fig. 1 being the city equipment and Fig. 2 the interurban. The city wheel weighs practically the same after retiring as before. The interurban wheel with steel center is much lighter than with a specially built cast-iron center, and has a neat appearance with its tire.

How the Pavement Plow Works in Brooklyn

Plow Is Towed by Fifty-three-Ton Dumping Car at the Rate of Seven Feet per Second—Costs of Hand and Plow Work Compared

BY R. C. CRAM

Assistant Engineer Way and Structure Department, Brooklyn Rapid Transit System

The Clark pavement plow has been described in the *ELECTRIC RAILWAY JOURNAL* and no doubt its purpose and general performance in service are quite familiar to engineers in charge of track matters. Nevertheless, but little information relative to the economies effected by the device has been published; hence a rather brief statement of results obtained in Brooklyn may be of some interest.

A comparison between the work done by the plow and that done by manual labor can be made from data taken on a difficult job that was recently completed. The work was perhaps the most difficult which could be assigned to the plow. It consisted of excavating 8-in. granite block pavement having 1:1 cement grouted



joints, laid in 9-in. tram-girder tracks. The latter had 2½-in. x ¾-in. tie rods spaced about 10 ft. apart. The paving joints and tie rods were in excellent condition, and it was found in course of manual excavation that the paving blocks would generally break before the joints gave way. This indicates that the pavement was nearly monolithic. The plow had little difficulty in breaking up the pavement, although the best results were not obtained until the counterweight box had been loaded to its fullest capacity and the towing cable increased from 1¼ in. to 1½ in. in diameter. For hauling the plow we used an automatic dumping car of 20-ton capacity and weighing 53 tons total. This was fitted with special draft rigging.

Tearing up this pavement manually, it took five men one hour to bar out 27 linear feet of pavement between the rails, and the cost was \$1.23. The plow broke out 674 linear feet of pavement in one minute and forty-three seconds actual plowing time with a total of forty minutes between the arrival and departure of the plow and towing car. Part of this time was used in changing from the regular towing bar to the towing cables used on the plow. After the work was completed, of course, these had to be changed again. The plow works at the rate of 7 ft. per second

when actually plowing and in four seconds it did as much work as the five men did in an hour. In this instance at least twenty-five hours' labor or nearly three nine-hour days were saved by the use of the plow.

From the data just given a comparison of the cost of hand labor and the plow work can readily be made. On our property there is a tariff charge from the freight department to the track division of \$12.50 for the use of the towing car for the forty minutes required for this job. This is a minimum charge and would have been no greater had we used the towing car for half a day. However, it would have taken five men twenty-five hours to bar out 674 ft., and the cost of doing the work in this way would have been at least \$30.75, so that the plow saved more than half the cost of the hand work even though we had to pay a high rate for towing. The accompanying illustrations show the plow in operation in Brooklyn.

Car Meter Maintenance Costs One Dollar a Year for Each Meter

Total Operating Cost, Including Clerical Labor, Stationery and Instruction, \$8.97 a Year per Meter
—Observations Taken Over Two and One-Half Year Period

BY F. V. SKELLEY

Assistant Superintendent Tri-City Railway, Davenport, Iowa

The Tri-City Railway & Light Companies have had 100 Economy meters in use on the cars of the Tri-City Railway and the Clinton, Davenport & Muscatine Railway for two and one-half years, during which time an accurate record has been kept of the operating expenses and the labor and material costs in maintaining these devices. The meters were installed in April and May, 1915, and the first readings were taken in June of the same year. The following table includes a complete list of all expenditures during this period:

Four pairs of cable terminals.....	\$1.28
Three damping disks.....	.54
Thirty external resistance coils.....	24.00
Two steel shafts.....	.75
Two jeweled guides.....	1.00
Two screws.....	.07
Five pounds mercury.....	5.00
Cost of changing meters on cars for annual tests.....	60.00
Testing meters (two annual tests).....	150.00
Total maintenance expense.....	\$242.64

As this expense covered two and one-half years' service, the average charge per year was about 97, or 97 cents per meter per year. The item of \$60 for changing meters for making tests was figured on a cost of 30 cents per meter. This was the cost under the old method of making connections. A later method of making these connections, pictured herewith, has reduced the material cost substantially.

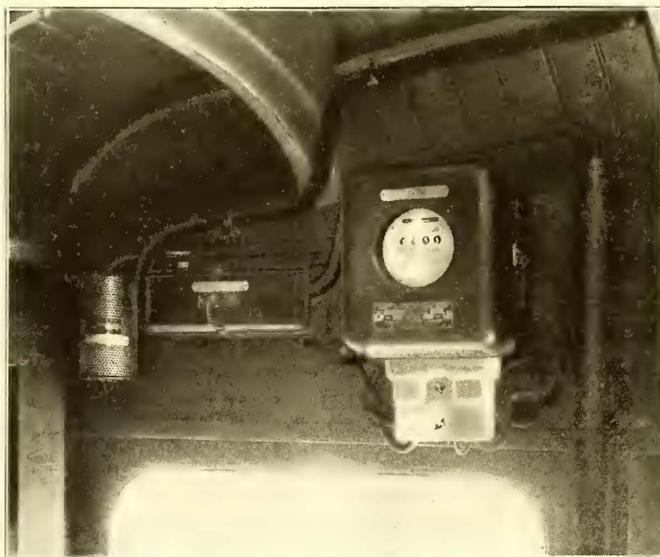
The office expense connected with the use of these current consumption meters is made up of the following yearly charges:

Clerk hire.....	\$480.00
Stationery.....	120.00
Supervision of instruction.....	200.00
Total.....	\$800.00
Cost per meter.....	\$8.00

Adding to this \$8 operating expense a charge of 97 cents for maintenance, a total yearly cost of \$8.97 is obtained.

Under the item of "supervision of instruction," is included the small amount of time spent on the cars with the men and in preparing bulletins. This, however, does not represent the amount that should be expended in this direction, for the results obtained from the use of these efficiency devices will be in direct proportion to the interest aroused among the men.

It has been our practice to post the comparative standing of the motormen in the trainmen's room every two weeks. At the same time a bulletin is posted calling attention to methods of saving power, and to some of the interesting results obtained during the two weeks' period. As we have no school of instruction here we have not found it practical to give lectures to the men, all coaching having been done on the cars. Owing to the unsettled conditions of labor little progress has been made in the last six months, but as soon as we are able to hold our men for any length of time we plan on giving them a special training in the methods of power saving. A man who stays in our employment only a month or two has all he can master



LATEST METHOD OF MAKING METER CONNECTIONS IN DAVENPORT-MUSCATINE INTERURBANS

in that time to become familiar with the operation of his car, and we can expect to do little with him in the matter of energy saving.

We find it practically impossible to secure any accurate figures in regard to the savings obtained from the use of the meters on account of the variable conditions encountered. A change in schedule speed of cars affects the power consumption and makes comparative results of no value. The meters were placed on the cars here in 1915 during a business depression brought on by severe jitney competition. Since then business has increased and some lines have shown an increase in power consumption in spite of our effort to effect an economy. However, in general, I am satisfied that a meter on a car has a good influence on the motorman and encourages him in an effort to save.

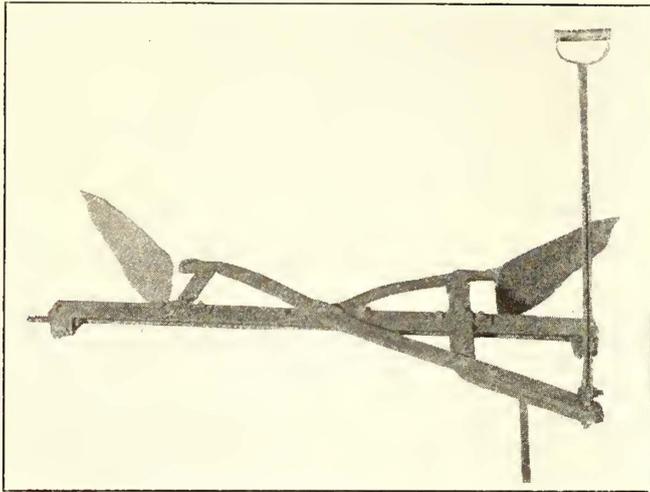
The St. Joseph (Mo.) Railway, Light, Heat & Power Company has increased its coal storage capacity from 250 tons to 10,000 tons. Coal is being unloaded by a 20-ton locomotive crane. By the improved facilities the company expects to save \$3,000 a year.

Snow Scrapers Made at a Cost of \$30 Each

BY R. A. WILLSON

General Superintendent Washington Water Power Company, Spokane, Wash.

The secret of preventing tie-ups due to snowstorms is to keep the tracks clear. During the early part of the winter as soon as the ground commences to freeze, it is our practice to send out the big snow plow, described in the ELECTRIC RAILWAY JOURNAL of Jan. 6, 1917, page 39. This plow is run over all unpaved dis-



HOME-MADE SNOW SCRAPERS OF WASHINGTON WATER POWER COMPANY

tricts and it scrapes the mud down to the level of the ball of the rail. In this way it is possible for the scrapers to reach the rail head. We keep up this plowing while there is any thawing that permits wagons to raise the mud.

With the ground on both sides level with the rail there is little chance of the snow packing and being frozen on the rail. Then the use of the scraper is all that is necessary to keep the line free for travel.

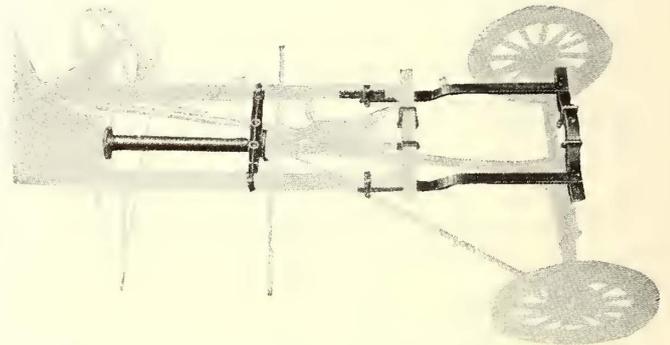
The scraper which we use was designed by the writer and has proved effective in every way. The illustration shows the general arrangement of the blades, transverse member, frame and operating lever. The transverse member is $\frac{1}{4}$ -in. x 3-in. x 4-in. angle iron, which is attached to the car by a bolt through either end. The frame is made of $\frac{1}{4}$ -in. x 2 $\frac{1}{2}$ -in. spring steel, and the scraper blades are 12-in. x 24-in. plow steel. The motorman can regulate the pressure on the blades by means of a handle with a toothed rack which engages a plate on the platform floor. The shares of the scrapers are

made of spring steel and the angle of the share is such that any obstruction that the scraper will not remove will be passed over without damage. The spring feature absolutely takes care of any unevenness in the track, changes of the grade, oscillation of the car, etc. The car can be backed with the scraper in the down position without any damage other than a lot of noise which will immediately attract the motorman's attention. We have had practically no breakages of scrapers. The shares are so curved that at 10 or 12 m.p.h. the scrapers will shoot the snow clear of the devil-strip and if necessary they will remove snow up to a depth of 1 ft. above the head of the rail. Of course, in heavy snow storms the plow must be run occasionally to keep the snow from packing under the motor cases. The scrapers were built in our shops at a cost of about \$30 for material and labor.

Another Ford Converted into a Line Truck

Special Extension Used to Obtain 130-In. Wheelbase and Semi-Elliptic Springs Added to Rear Axle

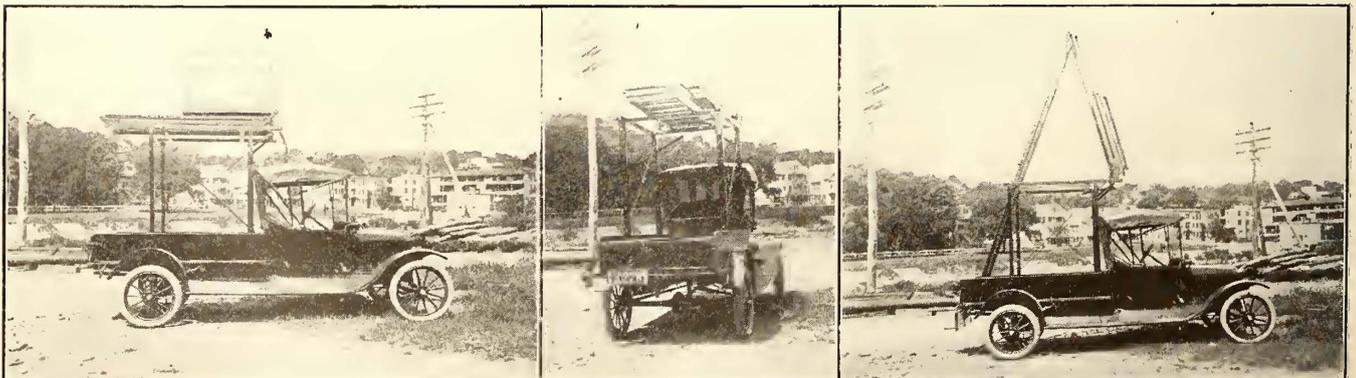
For use on the Waterbury division of the Connecticut Company a line truck has been constructed from a Ford runabout, the design being a modification of the ones described in the issues of the ELECTRIC RAILWAY JOUR-



CHASSIS OF FORD RUNABOUT, THE PARTS OF THE SPECIAL EXTENSION BEING SHOWN IN BLACK

NAL for Aug. 26, 1916, page 364, and April 7, 1917, page 653.

In this case it was thought that the truck would be called upon to carry material other than that required in making minor repairs, and for this reason it was decided to reinforce the truck so that it would be able to handle this work. The company procured an ordinary Ford runabout, removed the sloping back and installed what is known as a 30-in. H-D extension, which is shown in one of the accompanying illustra-



LIGHT-WEIGHT LINE TRUCK ON WATERBURY DIVISION OF THE CONNECTICUT COMPANY

tions. In addition to putting on this extension, semi-elliptical springs were installed on the rear axle parallel to the axis of the truck. This was done primarily to make the truck more stable both while it is in motion and when it is at a standstill and the tower is being used. An ordinary delivery body was then added to the chassis.

The tower itself was built by the Connecticut Company's forces at the New Haven shops. The tower is located behind the seat in such a way that it permits the driver to have an unobstructed view at all times.

The cost of the principal parts of the line truck were as follows:

Ford runabout f.o.b. New Haven.....	\$365.00
30-in. H-D extension complete with delivery body (labor and material)	217.00
Cost of tower (labor and material).....	95.60
	\$677.60

In addition to these items the truck has been equipped with a Stewart searchlight, a rear view mirror, one 6-volt, 80-amp., type B-4 Edison storage battery, and a speedometer. The searchlight and storage battery make it possible to hunt line troubles at night, and the speedometer gives an accurate record of the mileage run by the truck.

Multiple-Unit Control on New Bay State Cars

Motor Connections Made by Contactors Operated by Cam Shaft Which Is Actuated by Air Engine

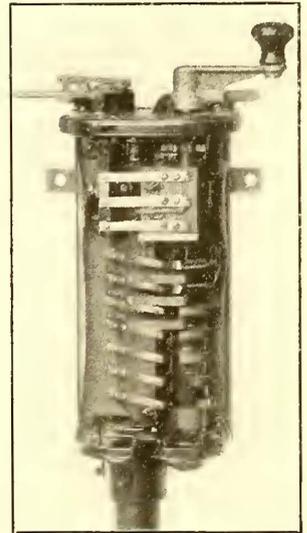
The control system to be used on the new No. 4300 series convertible cars of the Bay State Street Railway, Boston, Mass., is known as the Sprague GE type PC-5 control, and although it is a recent development it has already been used extensively enough to demonstrate its reliability. While based upon the fundamentals of a master controller, a motor controller and certain auxiliary apparatus, and performing the same functions as other multiple-unit systems, it differs radically from them in the manner in which the motor circuit connections are made. In the PC-5 control these connections are made by contactor units actuated by a series of cams mounted on a shaft, this shaft being rotated by an air engine controlled by the master controller.

The contactor unit as illustrated consists of two contact tips, the lower one being carried by an arm which is raised by the pressure of the cam against the roller bearing on the under side of the arm. To open the circuit the cam moves around so that the arm is released

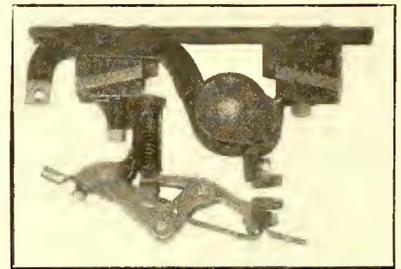
and forced quickly downward by the spring. The contactor units are equipped with magnetic blowouts and arc chutes.

The air engine which rotates the cam shaft consists of a rack mounted between the pistons of two opposed air cylinders. The admission of air to one cylinder occurs simultaneously with the exhaust from the other, these operations being governed by magnet valves controlled by the master controller. The contactor units together with a line breaker, reverser, overload and current-limit relays are all assembled in a case as a single unit. The line breaker consists of a contactor equipped with a power blowout coil and operated by an air cylinder controlled by magnet valves. The breaker will open the circuit if either air pressure circuit fails. The reverser cylinder is operated by an air engine of construction similar to that used for the contactor units. Current for operating the control circuit is obtained from the line, and air for the engines of the motor controller, reverser and line breaker is obtained from the car air-brake system.

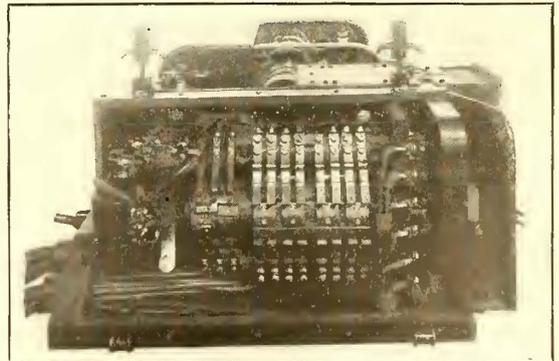
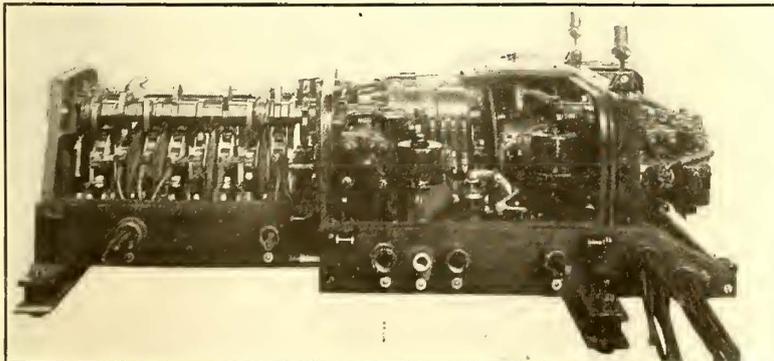
The master controller is similar to that used on the Sprague-GE types M and MK control systems. It is equipped with a small supplementary lever or by-pass which enables the motorman to cut out the current-limit relay and then advance the motor controller step by step in cases where conditions of the road or the service are such that the normal accelerating current for which the current-limit relay is set is not sufficient for accelerating. A special feature of the by-pass permits the controller to advance only one step for each movement of the supplementary lever. The controller can, therefore,



MASTER CONTROLLER USED WITH PC-5 CONTROL



CAM-OPERATED CONTACTOR UNIT



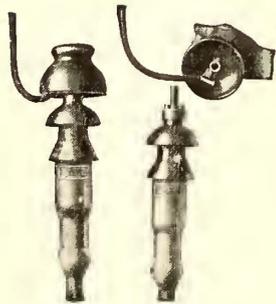
MOTOR CONTROLLER IN WHICH CONTACTOR UNITS ARE OPERATED BY CAM SHAFT ACTUATED BY AIR ENGINE. REVERSER SHOWN AT RIGHT IS ALSO AIR OPERATED. ILLUSTRATIONS HAVE BEEN INVERTED TO SHOW APPARATUS MORE CLEARLY

be advanced from point to point only by successive movements of the lever. Excessive jumps in the accelerating current are thereby eliminated. This arrangement gives the advantages of automatic and non-automatic control combined.

A feature of the PC control system is that the motor connections are made in the correct sequence by mechanical means. As the contactors must close in the order determined by the setting of the cams on the shaft, the possibility of improper operation that sometimes occurs with individually operated contactors is entirely eliminated. This method of operating the contactors has also the advantage of cutting out all interlocks on the contactors, which greatly simplifies the control. Thus the benefits of automatic acceleration are obtained without the complication necessary with the individually operated contactors.

Cable Terminal with Disconnection Feature Improved

An outdoor cable terminal of new design known as the outdoor disconnection type has recently been placed on the market by the Standard Underground Cable Company, Pittsburgh, Pa. In the new terminal all the copper parts are covered by a porcelain hood, as shown in the illustration, thus permitting the disconnection of the aerial extension wire even while the circuit is alive. The stem of the new terminal is a modification of the regular capnut stem and has some additional advantages where frequent disconnection of the

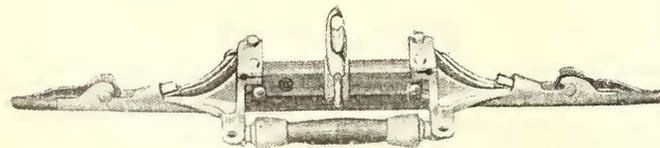


OUTDOOR CABLE TERMINAL WITH IMPROVED DISCONNECTING FEATURE

aerial circuit from the terminal is necessary to protect the cable men while repairs are being made.

New Section Insulator with Adequate Provision Against Warping

A trolley-wire section insulator of improved design has been developed by the Ohio Brass Company, Mansfield, Ohio. The insulating section is a fiber running piece which fits into a slot in a heavy compression beam which prevents it from warping and helps to give it a



TROLLEY-WIRE SECTION INSULATOR OF IMPROVED DESIGN

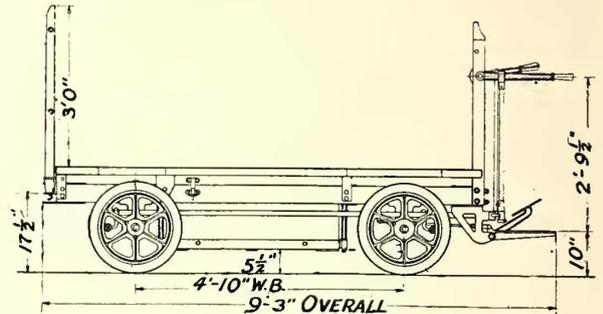
smooth, continuous, running surface. The fiber strip with its two bronze arcing tips forms a unit which can be removed by taking out two bolts when replacements are necessary.

The end castings are of malleable iron equipped with renewable cam tips. The wire is anchored in tapered chucks which have good holding qualities and provide an easy means of installing the wire. The wood strain

insulators at the side and in the same plane as the trolley wire take up all stresses and eliminate any tendency to buckle.

Power Trucks for Handling Freight

Many railways are now carrying freight and express in much larger quantities than before the war. Efficiently to handle large shipments at the terminals, in spite of the shortage and high cost of labor, other means should be used than the common one-man push truck. A power truck which seems well adapted to this class of service is shown in the illustrations. It is manufactured by the Samuel L. Moore & Sons, Elizabeth, N. J., who state that about 15 cents per ton can

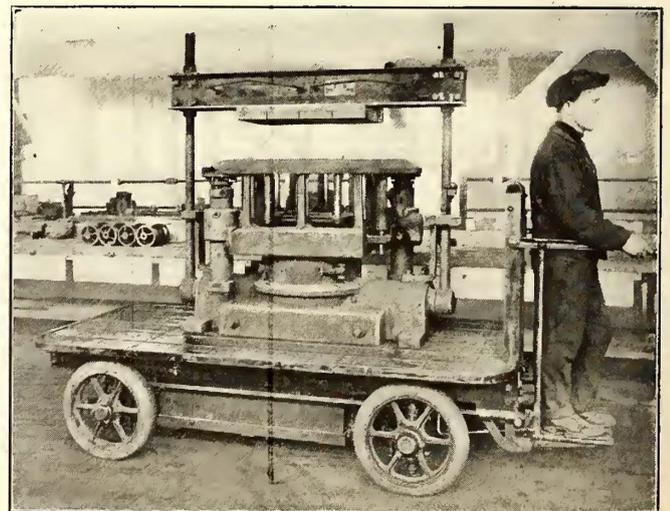


DETAILS OF FREIGHT HANDLING TRUCK

be saved by the use of the power truck, one machine and operator doing the work formerly done by twelve men with hand trucks. The source of power is a storage battery of sufficient capacity to operate the truck for a full ten-hour day without recharging.

The principal dimensions of the truck are shown in the drawing. The frame is built of 4-in. channel steel braced with large gusset plates. The platform is 23 in. above the floor and is made of 1 1/2-in. oak planking, laid in sections which are hinged so as to give access to the driving motor and battery. The characteristic features of the truck which are not shown are as follows:

Capacity	4000 lb.
Speed .....	.8 to 10 m.p.h. light; 5 to 7 m.p.h. loaded
Loading platform .....	.7 ft. 6 in. x 4 ft.
Turning radius .....	.6 ft. to center line of truck
Motor rating .....	.36 volts, 35 amp., 1000 r.p.m.
Controller .....	.3 speeds forward, 3 reverse



ELECTRIC FREIGHT HANDLING TRUCK IN OPERATION

London Letter

Municipal Tramway Association Met in September— Edinburgh Proposes Construction After the War— Women of Glasgow Perform Skilled Labor

(From Our Regular Correspondent)

The sixteenth annual conference of the Municipal Tramways Association was held at Blackpool on Sept. 20 and 21, under the presidency of Henry Mozley, general manager of the Burnley Corporation Tramways. The papers presented were "Notes on Tramway Finance," by J. Barnard, general manager of the Bolton Corporation Tramways; G. W. Holford, general manager of the Salford Corporation Tramways, and P. Priestly, general manager of the Oldham Corporation Tramways; "Special Fares on Tramways," by W. Murray, tramways manager of the Walthamstow Urban District Council; and "Development of Tramways," by Arthur Ellis, city electrical engineer and tramways manager of Cardiff.

Unbounded faith in future tramway development characterized most of the speeches delivered at the conference. The restrictions placed upon railway traveling during the last two years have caused a further transference of local traffic from the railways to the tramways, and it is believed that this traffic will become a permanent accession of the tramway. In his paper Mr. Ellis suggested that the railways would in the future apply most of their energies to long-distance traffic, leaving the tramways to do the local carrying. This applies not only to passengers but also to certain kinds of freight traffic. There is much to be said at the present time in favor of the greater use of tramways for freight traffic and for establishing spur lines and connections with the railways. If something in this direction could be done at once it would relieve the congestion on the railways and do much to solve the problem of facilitating the transit of manufactured goods, foodstuffs and coal. By using the tramways for this purpose freight could be deposited almost at the doors of the consumer instead of having to be carted from one or two central railway depots. This in itself would be of tremendous advantage. It is probable that the future will see the tramways being used more extensively for carrying freight.

The tramways committee of Edinburgh has been instructed to take preliminary steps for obtaining authority to construct tramway lines between the city and South Queensferry, though no actual work is to be done before the end of the war. In a report drawn up by the city engineer two routes are indicated—one by way of Dean Bridge and the other by way of Comely Bank. In each case it is insisted that an essential to success would be a through service of cars from a convenient center or terminus in the city to the Hawes Pier, South Queensferry—close to the south end of the Forth Bridge. As regards the first of these routes it might not be found impracticable to operate the service across the Dean Bridge without overhead wires. Objection is not taken to these on the ground that they would be ugly or inartistic in themselves, but because the valley and bridge have in their combination a character of their own which overhead equipment might go far to spoil. By this route the distance would be 8 miles, the tramway being on roads for 3 miles and in fields for 5 miles, while by the second there would be 3½ miles of road track and 5 of field track—a total of 8½ miles. It is urged that the construction of such a line as soon as possible would be all the more appropriate, seeing that the lease of the Edinburgh Tramways to a private company is almost at an end, and that when that lease expires the lines are to be taken over by the corporation.

It is stated that the Board of Trade electric power supply committee has arrived at certain preliminary conclusions and is about to take evidence from authorities interested. The London County Council special committee realizes the difficulties in present circumstances of putting forward any comprehensive scheme either for the county of London or for Greater London, but is arranging a conference as it feels that public authorities in London either owning or having power to purchase electric undertakings should meet in order to discuss the whole situation as it affects Greater London.

Illustration of the pressure which has been put on the tramways undertaking of the London County Council as a consequence of the war is afforded by the figures showing the increase of traffic on the Woolwich routes. Between July, 1914, and July, 1917, the number of cars running into Woolwich increased 75.25 per cent. The service during the maximum rush increased in the same period by 170 per cent. The carrying capacity of the cars running into Beresford Square, Woolwich, is 17,327 passengers an hour. The maximum number of cars arriving at Woolwich in an hour has increased from seventy-six in July, 1914, to 205 at present.

The employees of the Sunderland Corporation Tramways applied recently through the General Workers' Union for an increased war bonus. The matter was referred to the committee on production. After hearing both sides at a conference in London the committee has made the following award: That in lieu of war bonus, the men shall receive a war wage advance of 12s. a full ordinary week; that the women shall receive 2s. 6d., bringing their advance up to 8s. 6d. a week; that boys and youths under the age of eighteen shall receive 1s. 6d. a week in addition to the bonus already paid, bringing them up to 5s. advance. In all cases the bonus or war wage is to be taken into account in the calculating of overtime.

The grievances of the Wallasey tramway employees have been considered by the tramways committee, and the following resolution has been passed: (1) The committee considers that the Council must be the judge as to whether or not women should be trained as drivers and it cannot recommend to the Council that it alter its previous decision. (2) That the application of the conductresses for an increase of a farthing per hour after twelve months' service cannot be granted in view of the application for increased allowance now before the committee on production. (3) That the employees who are requested to be in attendance at the carhouses at fixed hours be paid for the duration of their attendance. The leaders of the employees have decided to submit the resolution of the tramways committee to headquarters in Manchester. Meanwhile the employees will continue their work.

The extent to which women have taken the place of men as conductors and drivers of tramway cars in Glasgow is well known. What is not so generally realized is the extent to which skilled labor is being performed by women in the workshops and depots of the department. The total number of workers employed by the department is about 5600, and of that number fully 2500, or nearly 50 per cent, are women. Prior to the outbreak of war the number of women in the employ of the department was very small, and their duties were mainly of a clerical nature. During the last three years the work of substituting women for men on the cars has gone on steadily until at present the outside staff includes about 1360 conductresses and about 400 women drivers. The work of both classes has been satisfactory to the management and the public, notwithstanding the considerable increase which has taken place in traffic since the war began. Women's capacity for performing duties of a highly skilled and technical nature has been displayed strikingly in the work of the power stations and depots of the tramway system. In the principal electrical power station five women are engaged as switchboard attendants, four as cleaners, and one as a clerk, thus releasing ten trained men for work of national importance elsewhere. Eight women are employed in the substations as switchboard attendants, one substation being entirely staffed by women, who do the work formerly done by trained electricians. At the depots 490 cleaners have taken the places of men, many of whom are now at the front or in munition works. Six women act as inspectors of the street switch boxes connected with the electrical power supply, while a number of others are employed on what was previously men's work, such as cleaning and keeping car controllers in order, driving motor cars used by the department, doing clerical work, etc. They are also engaged in the tramway stores, the sawmill and the paint shops, and in other branches of the department's activities. A large section of the Coplawhill Depot has been set apart for the execution of important government contracts. Nearly 100 skilled women are engaged on this work. A. C. S.

News of Electric Railways

Traffic and Transportation

Financial and Corporate

Personal Mention

Construction News

Franchise Draft Completed for Toledo

Terms of Proposal Reviewed Briefly—Copies of the Ordinance Will Be Distributed to Voters for Ratification by Popular Vote

After working eighteen months on the draft of a railway ordinance for Toledo, an agreement has been reached between that city's special traction committee and the Toledo Railways & Light Company whereby a "community ownership" system is outlined. As noted in the *ELECTRIC RAILWAY JOURNAL* for Oct. 20, page 734, the agreement as drawn up by the consultants embodies various original ideas. These include principally the creation of a new company, to be known as the Community Traction Company, which will operate under a twenty-five-year franchise. This franchise provides that at the end of five years the traction property may be purchased or leased by the city.

The ordinance as drawn up will be printed and distributed to the voters so that they may thoroughly understand the proposed agreement. After the valuation of the property, the question of enacting the proposed ordinance will be voted upon at a referendum. Before the final ordinance is submitted to a vote, the car commission will receive suggestions and modifications of the plan which may be made by the public. It thus seems possible that within a comparatively short time the long-pending traction problem in Toledo will be settled.

OUTLINE OF IMPORTANT FEATURES OF GRANT

As decided upon under the personal co-operation of Henry L. Doherty, chairman of the board of the company, the proposed regulations for the street railway are very elaborate. The most important features of the plan are these:

There is to be a separation of the electric railway from the electric and gas properties of the Toledo Railways & Light Company. The traction properties are to be controlled by a corporation which is to be called the Community Traction Company, the capital stock of which is to equal the value of the street railway properties as determined by the valuation board. This stock will be held by five trustees to be named in the final ordinance, and the stock will be voted by them. In return for its equity in the Community Traction Company, the Toledo Railways & Light Company is to receive trust certificates.

STOCK TO BE SOLD TO PUBLIC

The stock of the Community Traction Company will be sold to the public in \$10 shares, and may be bought by any one upon the installment plan. It is further provided that this stock must always yield an income of 6 per cent unless such yield cannot be obtained without increasing the fare to more than 5 cents. At the end of five years the city may at any time purchase the traction properties for an amount equal to the par value of the capital stock of the company issued and outstanding, plus a premium of 6 per cent. In addition, the city shall assume all debts and obligations of the company contracted in good faith. At any time after five years the city may lease the property of the Community Traction Company by paying 25 per cent of the purchase price as determined, plus a monthly rental of one-half of 1 per cent on the unpaid balance of the purchase price. In order to acquire the property the city will also have to pay at least 2 per cent annually toward such purchase.

The Toledo, Railways & Light Company agrees to purchase, within the first eighteen months, \$1,000,000 of additional stock in the Community Traction Company. Money received from the sale of this stock is to be used to pay for extensions and betterment of the lines during the first

five years. Further funds are created to take care of operation, maintenance, depreciation and renewals.

FIVE-CENT CASH FARE, WITH GRADUATED TICKET FARE

It is provided that the cash fare on the Community Traction Company's lines may never be in excess of, or less than, 5 cents. With the cash fare remaining stationary, any changes in fare will be made by adjusting the number of tickets which may be purchased for 25 cents, and by regulating the issuance of transfers. The highest fare contemplated in the ordinance, is to be a 5-cent fare with a free transfer. This maximum fare is graduated down to the minimum rate which is a 5-cent cash fare, ten tickets for 25 cents, 1-cent charge for a transfer with ticket fare, and no rebate. A rate of fare to begin with will be established by the final ordinance, and any future modifications of the rate will depend upon the action of the city and the condition of the equalizing fund as outlined in the following section.

HOW FARES WILL BE GOVERNED

The rate of fare established when the ordinance goes into effect is to continue for six months, or until the company shall have accumulated a fund of \$150,000 after deducting taxes, allowances, dividends and various other payments. That fund will be known as the "equalizing fund." The minimum level of this fund will be \$100,000 and the maximum \$200,000. When the fund reaches the minimum level, the company may put into effect the next higher rate of fare, but if the Council rejects the increased fare, the matter must be arbitrated. When the fund reaches the maximum level of \$200,000, all surplus is to be deposited in the amortization fund or the City Council may decrease the rate of fare. The maximum, intermediate and minimum levels of this fund are subject to change when the capital stock of the company exceeds \$7,500,000.

The amortization fund is to be similar to a sinking fund. Whenever the franchise has only fifteen more years to run before its expiration, the company is to pay an amount each year into this amortization fund. For example, if at the end of the first ten years of the present twenty-five-year franchise, no provision has been made for the renewal of the franchise, the company must begin its monthly payments to the amortization fund, which fund is to be held by the five trustees. The payment into the amortization fund is not to exceed in any month more than one-half of 1 per cent of the capital value, and the total to be raised during the fifteen years is not to be more than 75 per cent of the capital value.

The City Council is to have supervisory powers in regard to service. There are provisions for arbitrating all matters in dispute, and arbitration is to be enforced by withholding one-sixth of the dividends until the company complies with the award.

HOW MR. DOHERTY REGARDS THE AGREEMENT

Mr. Doherty has issued the following statement in regard to the tentative agreement drawn up in Toledo:

"I believe the community plan on which we have agreed points the way to a solution of the street railway problem in cities, and possibly other public utility problems as well. And while the negotiations between the Toledo commission and myself have seemed to stretch to undue length, still the job was worth doing thoroughly if worth doing at all.

"I started in on the negotiations determined to go as far as I possibly could to reach a fair agreement, and to yield everything to the city I could yield and still be able to finance the proposition.

"At times it has seemed to me that the commission pushed me too hard and demanded more than was fair. There were

times when it looked to me as if no agreement at all could be reached that would result in a sane solution or any solution of the problem. I had given my word at the outset that I would do all in my power to help solve the Toledo problem, and pride stimulated me to go the limit to reach an agreement. I did go the limit, and I believe now that this community plan form of settlement will arouse a lively interest all over the country—much more even than did the so-called Cleveland plan.

MR. DOHERTY INSISTED ON PROTECTING THE STOCKHOLDERS

"At times when I appeared to be making my stiffest stand, it was because I considered it imperative that the prospective stockholders in the Community Traction Company be absolutely protected in their investment. If the people of Toledo were to be invited to invest in that stock on my recommendation, I simply had to have an agreement that would enable me honestly to recommend it as a sound investment. In all my experience no stockholder in any of my companies ever lost a cent. I want to keep that record clear as to the car riders of Toledo if they invest in the Community company. I believe now we have safeguarded in every way the prospective stockholders and have made it possible for Toledo to control her own electric railway system and show other cities the way."

Increase in Wages in St. Louis

According to an announcement posted during the week ended Oct. 27 in the various carhouses of the United Railways, St. Louis, Mo., 3000 motormen and conductors in the employ of the company will share in an increased scale of wages effective from Nov. 1. The increase will mean an additional payment of salaries amounting to \$130,000 annually. The bulletin stated that since the World's Fair in 1904 the company had voluntarily increased the wages of the employees 40 per cent. The reason for the increase just announced is given as follows:

"War conditions, the tremendous increase in the cost of supplies and the additional burdens placed on the United Railways have proved a severe strain on the resources of the company. Notwithstanding the company's difficult position, it is glad to make this raise as a recognition of the higher cost of living and as an appreciation of the faithful and loyal service of its employees.

"This is a further advance immediately following the inauguration last September of the bonus system, which rewarded the employees for skill and carefulness in avoiding accidents. By means of skill and care it is possible for the men to increase their own wages."

For new men, who spend one year as a period of training, and who formerly received 24 cents an hour, the new rate will be 26 cents. Second-year men will now receive 27 cents an hour; third-year men, 28 cents; fourth-year men, 29 cents; fifth-year men, 29½ cents; sixth-year men, 30 cents; seventh-year men, 30½ cents; eighth-year men, 31 cents; ninth-year men, 31½ cents; tenth-year men, 32 cents, which is the maximum.

Coal Scarcity Still Causes Trouble

Because of the poor quality of fuel it was forced to use at its generating stations, the Ohio Electric Railway was compelled to operate cars every two hours instead of every hour over its various divisions on Oct. 16. Several other roads have experienced difficulty of this kind recently. Roads are forced to accept such fuel as is left after the lake business is taken care of under the priority order. What they get is often of a very inferior grade and contains impurities which could not be taken out in the hurry of loading.

Homer H. Johnson, the new fuel administrator appointed by Dr. Garfield, has announced that little relief can be obtained unless the priority orders are modified in such a way as to allow a portion of the coal to go to the utilities and industries. He has asked the Federal Coal Administration office at Washington for a modification which will allow the railroads to use a certain percentage of their cars for the shipment of coal needed in Ohio.

At the present time coal is being supplied to the utility companies on ration, and any break in the arrangement would result in a suspension of operation.

St. Louis Grant Protested

Officers of the United Railways Object to the Proposed Settlement Grant as Recently Amended

Richard McCulloch, president of the United Railways, St. Louis, Mo., and Thomas M. Pierce, general counsel of the company, appeared before the public utilities committee of the Board of Aldermen on Oct. 23 in connection with the proposed ordinances looking toward a settlement of the differences between the city and the company. They declared that unless bill No. 1 or bill No. 2 was recommended by the committee without material alteration the company would not accept any settlement ordinance.

SETTLEMENT PRICE TOO SEVERE

Mr. McCulloch pointed out the changes which make it impossible for the company to accept the substitute measure, to which reference was made in the *ELECTRIC RAILWAY JOURNAL* of Oct. 27, page 783. He asserted that the company was not asking for new rights. It wanted to be relieved of the mill tax problem and have its franchises validated, so that it could readjust its finances and obtain money for improvements. The company had not asked for the right to use the city streets, and the Aldermen ought not to approach the settlement ordinances from that angle. The company now has the right to use the streets, and the city should not tack on obligations for such use. Mr. McCulloch said that the company did not ask for a subway franchise and would be willing to have the entire subway clause stricken out of the ordinances.

AMENDED ORDINANCE COULD NOT BE ACCEPTED

Mr. Pierce declared that it would be futile for the city to pass the proposed substitute ordinance, because the bondholders of the company would not accept it. He is reported to have said:

"The United Railways Company cannot reorganize its finances under the substitute ordinance that is now proposed. The bondholders or new investors would not accept an ordinance which gives the city the right to tear up our tracks on Olive Street, or any other street, and give them to some other company. Their money is at stake, and they must protect it. It would be of no use for the committee to hold further public hearings to listen to impracticable ideas in an effort to find out what the people think about the proposed ordinance. We are here to tell you what the company thinks about the measure, and we cannot go any further, and will make no further trades."

The committee adjourned to meet again on Oct. 25. The two bills pending were framed last June by a joint committee, five members representing the city and five the company. Bill No. 1 provides a partnership with the city and the company, in which all profits above 6 per cent on a capital of \$60,000,000 would be split equally between the city and the company. Further, the company would obtain a fifty-year franchise and a repeal of the mill tax and franchise taxes, or taxes aggregating \$480,000 a year. Bill No. 2 does not provide for a partnership, but gives the company a fifty-year franchise. Under it the city would get 3 per cent of the gross earnings in lieu of the mill tax and the franchise taxes. The city has the right, under this bill, to buy the property at an agreed value of \$60,000,000.

PUBLIC HEARINGS TO BEGIN NOV. 6

The public utilities committee of the Board of Aldermen decided on Oct. 25 in executive session "not to recommend United Railways settlement bills No. 1 or 2." It was reported, however, that some concessions would be made to the company, but on Oct. 29 the committee, while it made some slight changes in the measure before it, held firm to its refusal to grant a fifty-year franchise as provided in both of the original bills, and made a stand on a thirty-one-year grant to 1948. In lieu of the mill tax and the franchise taxes, which now aggregate \$480,000 a year, it was at first proposed to levy a tax of 3 per cent on the gross earnings. Later it was suggested that the city also receive 25 per cent of the net profits above 7 per cent on a valuation of \$60,000,000 and 50 per cent on the net profits above 8 per cent on that valuation. These changes were written into the measure as amended on Oct. 29. The company is to have ten

years in which to pay the accumulated mill tax of about \$2,000,000. No interest will be charged on this amount for the first five years, but after that 5 per cent will be exacted on the unpaid balance. The plan was to submit a copy of the amended bill to Mr. McCulloch in time for him to discuss its terms at a meeting set for Nov. 2. Public hearings on the new measure will probably be begun on Nov. 6.

Car Purchase Order Upheld

B. R. T. Preparing to Carry Case to the United States Supreme Court in Test of Commission's Power to Order Improvements

The Appellate Division of the Supreme Court, First Department, New York, has decided against the appeal of the Brooklyn Rapid Transit Company from the order of the Public Service Commission requiring the company to purchase 250 additional surface cars. In effect the court upheld the commission's order. The decision was handed down on Oct. 27. It was rendered without comment.

The company has sixty days to file an application for appeal. Prior to the action in the State courts the Brooklyn company petitioned for an injunction against the Public Service Commission in the United States District Court, Eastern District, before Judge Veeder. This application was denied, but under a recent statute, the judge convened a special Federal Court of Appeals on Sept. 19 to hear argument. Judge Veeder was unanimously sustained. The company is now making up the record for an appeal against this decision to the Supreme Court of the United States, to be presented as soon as printed. The grounds for this procedure are that under the commission's order the company has been denied due process of law; that the order is tantamount to confiscation of property, and that the Public Service Commission act is unconstitutional.

Injunction Against Seattle Extension

A temporary restraining order has been obtained by T. N. Haller, Seattle, through the Superior Court of that city, enjoining Mayor H. C. Gill, Superintendent of Streets Charles R. Case, the city treasurer and city comptroller, and other members of the Board of Public Works from proceeding with the construction of an extension to Division A of the Seattle Municipal Railway on Fifteenth Avenue Northwest and Leary Avenue, or other street, northerly or westerly of the Fifteenth Avenue bridge, and from proceeding with the bridge approach. The complaint was filed following a favorable vote of the trustees of the Seattle Chamber of Commerce and Commercial Club, and was supported by affidavits from Councilmen Will H. Hanna, chairman of the finance committee, and R. H. Thomson.

In a communication to the City Council in regard to the Haller injunction, Hugh M. Caldwell, corporation counsel, reminded that body that the legal department of the city government had not been taken into its confidence when the extension of the municipal electric railway into Ballard under the superintendence of the street department was authorized by the Council. The Council referred the question of cooperation with the legal department in defending the action to the judiciary committee, enlarged by the temporary appointment of Judge W. H. Moore to the committee, with instructions to the committee to aid the corporation counsel as far as possible in defending the suit.

Right-of-Way Suit Settled

Missouri Short Line Settles with Interstate Railway for \$250,000

All controversies over right-of-way of the Kansas City, Clay County & St. Joseph Railway, the Missouri Short Line, were disposed of by the settlement made in Jefferson City recently. The judgment against the line for \$1,500,000, in favor of the Interstate Railway, had been appealed to the Supreme Court in 1915, and had been pending since. On Oct. 24 a judgment was filed by stipulation, in which the judgment of the lower court was reversed, following which the appellant paid \$250,000 to Senator James A. Reed, representing the Interstate Railway.

The suit of the Interstate company was brought to trial in the Jackson County Circuit Court in the summer of 1915. The amount of damages asked was \$2,000,000. It was charged that the Missouri Short Line had seized its right-of-way between Kansas City and St. Joseph for an electric line. While this suit was being tried, a suit that had previously been filed by the Kansas City-St. Joseph Electric Railway for \$200,000 damages against the Missouri Short Line on the same charge was dismissed. It was understood that the Kansas City-St. Joseph Company had disposed of its interest to the Interstate company. The latter's right-of-way claims had to do with part of the line from the St. Joseph end, the Interstate's claims being from the Kansas City end.

LOWER COURT VERDICT \$1,500,000

The jury in the Jackson County Court rendered a judgment for \$1,500,000 against the Missouri Short Line. A new trial was denied. The Interstate company asked a receivership, on the ground that the bonds of the defendant, \$3,135,000, and the judgment, \$1,500,000, together exceeded the road's valuation of \$3,900,000. The receivership was granted although the company had shown that it had \$200,000 cash on hand, and received \$1,500 a day income. Receivers were appointed, and served until June, 1916. An appeal bond of \$3,400,000 was required of the appellant to the Supreme Court. The receivers acted until this was given.

The Interstate Railway was never built. Much of the testimony at the trial of the suit had reference to the validity of the options of the company for right-of-way.

After the judgment in favor of the Interstate company was rendered in Kansas City, a suit was filed in St. Joseph by parties who claimed ownership of part of the stock of the Interstate company. This suit, however, was not prosecuted.

Washington Strike Report Ready

The report of the Senate committee which inquired into the strike of the trainmen of the Washington Railway & Electric Company, Washington, D. C., called last March, has been printed. On the committee of inquiry were Key Pittman, W. L. Jones and Hiram W. Johnson. Separate statements of conclusions and recommendations are made by the members.

Mr. Pittman says that every means should be provided for free, fair and full negotiations between the employer and the employee collectively and every opportunity and assistance should be given to them to adjust their differences, but that when these differences cannot be adjusted the public must adjust them. According to Mr. Pittman this can only be done in two ways—first, through absolute control over wages, hours and operating conditions by a commission having full authority within constitutional limitations, or by government ownership and operation.

Messrs. Jones and Johnson say that it is for the proper committee of the Senate to recommend such legislation as it may deem wise and that whatever opinions they might express will be personal opinions of the members of the committee upon the general questions involved. They commended to the careful consideration of the committee on the District of Columbia the creation of an individual public utilities commission with enlarged powers to regulate and control the public utilities of the district, and to examine into and supervise the relations between such public utility employers and employees and to pass upon grievances and disputes that may arise between them. The advisability and practicability of the consolidation of the two street railways operating in the District should be carefully investigated, and finally the question of government ownership and operation of these public utilities should be fully considered.

Mr. Johnson says that he is of the opinion that government ownership and operation of the electric railways of the District is wise and desirable. He recommends that such action be taken.

Mr. Jones' personal views are very favorable toward government or municipal ownership and operation of electric railways, but he has not given the conditions in the District sufficient study to feel justified in joining in a specific recommendation to that effect.

The hearings are embraced in a bound volume containing 1751 pages.

M. O. Meeting in Oakland.—Mayor Davie of Oakland, Cal., has been authorized by the City Council to invite representatives of all improvement clubs, civic bodies and other citizens' organizations to meet with him at an early date to discuss the feasibility of a plan for taking over the properties of the San Francisco-Oakland Terminal Railways for municipal operation. This is regarded as a political move, as it seems likely that the Mayor will be recalled.

Los Angeles Committee Reports on Municipal Ownership.—In Los Angeles, Cal., a committee appointed by the City Club has brought in a report to which several months' work has been devoted that sets forth the advantages of complete municipal ownership of all public utilities. The report states that there would be a saving of "17 per cent of the entire public service cost." Under the heading "What Los Angeles Should Undertake" is listed the electric railway service of the city.

Census for Technical Military Service.—The American Institute of Electrical Engineers is planning soon to send to its members a data sheet asking for information in regard to possible military or other government service which they are willing and able to perform. A similar census with the same standard blank will be conducted by several similar organizations, including the American Society of Mechanical Engineers, American Gas Institute, Illuminating Engineering Society and New York Electrical Society.

Relief Asked from Unjust Burdens.—The Portland Railway, Light & Power Company, Portland, Ore., Franklin T. Griffith, president, has written the City Commissioners, asking an expression from them as to the disposition of the unjust burdens of pavement of streets between car tracks, paying tolls for crossing the Willamette River bridges, and providing free rides for patrolmen and firemen. It is stated the original suggestion for abolishment of the city's charges came from the Public Service Commission in its recent decision in the 6-cent fare case.

United Railroads Files Damage Suit.—The United Railroads, San Francisco, Cal., on Oct. 10 filed a claim for \$356,250 damages against the city of San Francisco. The claim is that the city's construction of tracks on Market Street, paralleling the private company's lines from Church Street to Van Ness Avenue, has hindered passengers in reaching the inner tracks and has for months obstructed access with trenches and piles of earth. The items for which compensation are asked are: Depreciation of franchise value, \$700,000; loss by excavation, \$25,000; loss of revenue at \$750 a month to 1929, \$131,250. Total \$856,250.

Washington Railway & Electric Employees Boost Liberty Loan.—In connection with the second Liberty Loan campaign the Washington Railway & Electric Company, Washington, D. C., appointed a Liberty Loan booster committee, composed of eighty of its employees, with L. B. Schloss as chairman. The company subscribed to a block of bonds with a view toward allowing its employees to purchase the bonds on the installment plan. The employees entered the campaign with enthusiasm and a total of \$44,900 was subscribed by 745 of the employees. This total exceeded by \$20,900 the amount subscribed for the first Liberty Loan.

Move to Forfeit Amarillo Franchise.—The city of Amarillo, Tex., has forfeited the franchise granted to the Amarillo Street Railway and the City Commission has passed an ordinance providing that the city shall take over the lines and other property of the railway for operation under municipal ownership. The property, consisting of 9 miles of track and a number of cars, power lines, etc., will be condemned and purchased by the city. The railway suspended service on Oct. 20, placed its cars in the carhouse, and placed guards about its power station. The suspension of service by the company was referred to in the *ELECTRIC RAILWAY JOURNAL* of Oct. 27, page 789.

Women Clean Toledo Cars.—One of the first things which the Doherty organization has done in order to meet the scarcity of labor due to war-time conditions has been the substitution of women for men as cleaners of the cars of the Toledo Railways & Light Company, Toledo, Ohio. This experiment has been in progress for some time, and Frank R. Coates, president of the company, is well satisfied with the change. Not only are the women good substitutes for

the men, but they are doing the work of cleaning the cars more thoroughly than did their predecessors. Toledo is the only place in the Doherty organization which has begun to employ women for manual labor on electric railways.

Short Strike on Sandwich, Windsor & Amherstburg Railway.—Service was resumed in Windsor, Ont., and neighboring towns on Oct. 22, after a strike of the employees of the Sandwich, Windsor & Amherstburg Railway lasting one day. James Anderson, general manager of the company, authorized George McLeod, superintendent of the company, to sign an agreement with the employees that no change would be made in the runs for four months. In the future the control of employees will be left entirely with the superintendent. The strike is said to have been ordered because Mr. Anderson had refused to remove a non-union employee who, it is alleged, recently received choice of a run from Mr. McLeod.

Assessment to Be Reviewed.—Under a writ of certiorari allowed by Supreme Court Justice Trenchard, the Trenton & Mercer County Traction Corporation, Trenton, N. J., has renewed the legal contest over the amount of assessment made in 1916 on its property for taxing purposes. The new move, made by Frank S. Katzenbach and Edmund M. Hunt, counsel for the company, will permit of the review of an assessment allowed by the State Board of Taxes and Assessments, which assessed the company \$568,000. The argument made for review was based on the ground that there is no "going concern" value, but that the legal assessment is contained in the \$1,500,000, which represents the physical value of the property.

A Warning or a Threat?—In discussing the action of the State Public Service Commission of Washington in granting to the Seattle Lighting Company authority to increase its gas rates, Hugh M. Caldwell, corporation counsel of Seattle, said: "Following as this does upon the farcical hearing, as a result of which the commission permitted the elimination by the Puget Sound Traction, Light & Power Company of the 4-cent car ticket, it is evident that if the citizens of the city of Seattle are to have anything to say in dealing with the public service corporations, which are in existence now only by virtue of franchise contracts heretofore entered into with the city direct, the Public Service Commission will have to be abolished or its personnel radically changed."

Wage Increase in Washington.—Announcement has been made by the Capital Traction Company, Washington, D. C., that in order to aid its employees in meeting the high cost of living, made more acute by war conditions, the company will pay, during the continuance of such conditions, to all trainmen an additional 2 cents an hour over and above the present scale of wages, effective on and after Oct. 26, 1917. Corresponding increases are to be made to all other employees of the company. With the increases allowed trainmen, first-year men will now receive 27 cents instead of 25 cents an hour. For the second year the rate will be 27½ cents an hour; third year, 28 cents an hour; fourth and fifth years, 29 cents an hour; sixth year, 30 cents an hour, and seventh year, 32 cents an hour.

Railway Sues City for Damages.—Arthur C. Hume, receiver of the South Shore Traction Company, New York, N. Y., forced into receivership in 1910, has sued the city in the Federal Court in Brooklyn to recover \$1,750,000. The company contracted with the city of New York under Mayor McClellan, to operate a surface railway over the Queensborough Bridge and through the South Shore of Long Island to a point where Central Avenue intersects the Nassau County line. Between the signing of the contract, May 20, 1909, and Oct. 29, 1912, Receiver Hume alleges, the city so hindered operations as to damage the company to the amount sought. The franchise and physical property of the company were purchased by the Manhattan & Queens Traction Corporation, which is now operating the line.

Civic League Opposed to Cleveland Subway and Terminal Plan.—The Civic League, which makes a business of passing judgment upon all candidates and legislative measures affecting the public at Cleveland, Ohio, has condemned the subway and terminal plan of Mayor Harry L. Davis. The league objects to the plan in the first place because the members of the subway commission it would create would be appointed by the Mayor and because such a commission would have the authority to issue bonds on the approval of

the people, grant franchises, employ its own engineers, attorneys and experts. It says that the law under which a commission may be appointed was enacted to meet local needs in Cincinnati. The plan will be voted upon at the fall election, but the league does not suggest anything constructive to take its place.

San Francisco Valuation Conference Progressing.—The conferences are continuing between M. M. O'Shaughnessy, representing the city of San Francisco, Cal., and William von Phul, vice-president and general manager of the United Railroads, looking toward a basis of negotiations for the sale of the property of the railroad to the city, but no definite decision had been reached up to Oct. 23. In commenting on the progress made, Mr. O'Shaughnessy said recently: "Little difficulty has been experienced in reconciling differences as to the correct methods of forming a basis for the physical valuation. Much discussion has been had as to the correct method of appraising the value of the net profits of the company for the unexpired term of the franchises and endeavors have been made to reconcile conflicting differences on this phase of the problem. It is hoped that some basis will be arrived at soon by which the total valuation can be computed."

Defense in Seattle Bridge Cases.—Judge Everett Smith in the Superior Court, Seattle, Wash., recently ordered stricken from the records two or three grounds of defense set up by the Puget Sound Traction, Light & Power Company, in a suit brought by the city of Seattle to recover \$67,917 as the company's proportion of the cost of the Fremont Avenue bridge, and \$333 monthly rental therefor. The company's argument that it had been damaged many times more than the amount prayed for by the city, by the removal of the bridge at Stone Avenue, over which the Council had granted a franchise until Dec. 31, 1934, was allowed by Judge Smith to stand. Shortly after the closing of Stoneway Bridge to traffic on the opening of the Fremont Avenue bridge, the company filed a claim against the city for \$280,000, claiming that amount of cumulative damages during the life of its electric railway franchises. A decision in this case is expected to settle the rental that will be charged for the use of other bridges on which electric railway cars are operated.

Cincinnati Grant Contested.—The Supreme Court of Ohio heard argument on Oct. 16 in connection with the quo warranto suit of Prosecuting Attorney John V. Campbell of Hamilton County against the Cincinnati Street Railway, the Cincinnati Traction Company and the Board of Rapid Transit Commissioners of that city. The petitioners in the suit aver that the Bauer act and the ordinances adopted under it by virtue of which the rapid transit system for Cincinnati is to be built is in violation of the home rule provision of the constitution. Those who uphold the agreement entered into between the board and the companies say that the real question is not whether the home rule provision of the constitution authorizes the franchise agreement for the use of the city-constructed rapid transit system, but whether the Rogers act of 1896 gives the city power to go ahead. The provisions of the ordinance were reviewed at length in the ELECTRIC RAILWAY JOURNAL of April 7, page 633. The vote in favor of the ordinance was noted in the issue of April 21, page 748.

New York Governor Appoints Improvement Committee.—Governor Whitman has announced the names of a commission which is to investigate the west side improvement situation in New York and report to the next Legislature. The members are William H. Van Benschoten, chairman; Ralph S. Rounds, Charles A. Beard, Henry L. Stoddard and Cyrus C. Miller. Under the law a joint committee of the Public Service Commission and the Board of Estimate have control of the matter. If an agreement is not reached with the New York Central Railroad by Dec. 1 the entire matter passes into the control of the Public Service Commission. The next thing to be done under the law is for the commission to hold public hearings at which all may appear and state their views. Commissioner Hervey, chairman of the joint committee, in a recent letter to the Governor, said that everything had been done except to hold the hearings. He suggested that an investigation by a special committee of the progress which has so far been made would be welcomed by the joint committee.

Financial and Corporate

Annual Report

Galveston-Houston Electric Company

The comparative statement of income, profit and loss of the Galveston-Houston Electric Company, Galveston, Tex., and its subsidiaries for 1915 and 1916 follows:

	1916	1915
Railway earnings	\$1,826,297	\$1,819,290
Light and power department.....	116,501	114,987
Miscellaneous earnings	1,952	1,952
Total earnings	\$1,944,840	\$1,936,228
Expenses of operation.....	\$928,291	\$874,744
Maintenance	178,091	200,431
Taxes	129,726	131,282
Net earnings	\$708,732	\$729,771
Interest charges	\$321,757	\$374,036
Bond sinking funds	117,236	102,273
Preferred dividends (6 per cent).....	180,000	180,000
Common dividends (—; 3½ per cent)....	.....	139,580
Total deductions	\$618,993	\$752,889
Surplus	\$89,739	*\$23,118

*Deficit.

The gross earnings for 1916 showed only a slight increase over 1915, and as operating costs had already been reduced in 1915, it was not possible to improve the net earnings. In fact, except for August (which was comparable with the storm month in 1915), the monthly earnings statements did not begin to show increases until in November.

The advance that was made, however, was due to a gradual increase in gross earnings of the Houston property, equaling 11.5 per cent for the year. This was caused by a reduction in the number of jitneys and a general improvement in business conditions. The earnings of the Galveston property decreased 10.5 per cent, owing to the interruption of the shipping trade as a result of the shortage of foreign vessels and the consequent increase in shipping from the Atlantic seaboard instead of Galveston. The earnings of the interurban line from Galveston to Houston declined 11 per cent, for the lack of business activity in Galveston affected the inter-city riding.

Jitney regulation in Houston requiring a bond from operators became effective on Nov. 1 and tended to decrease the number in operation. On Jan. 1, 1917, only 112 jitneys renewed their licenses, as compared to about 300 in operation at the beginning of 1916.

Boston Elevated Passes Dividend

The directors of the Boston (Mass.) Elevated Railway on Oct. 29 took no action on the quarterly dividend due to be declared at that time. The company, it is said, may show for 1917 4 per cent earned upon its stock. Of this 3.5 per cent will have been distributed during the year, the payments being 1.5 per cent in February, one-half of 1 per cent in May and 1.5 per cent in August. In 1916 stockholders received 5 per cent; in 1915, 5.5 per cent; in 1914, 5 per cent, and in each year from 1913 back to 1902, the full 6 per cent.

The *Boston News Bureau* says:

"The passing of the dividend is a step to which the directors have been forced most reluctantly. If ever a board of directors fought for a property and lay awake nights devising methods of new economy, greater operating efficiency and in the last few months many temporary and perhaps desperate expedients, it has been the directors of the Boston Elevated Railway. Had the company been served by a less faithful and painstaking directorate, the dividend would have been passed a year ago.

"The company's credit has declined to a point to-day where it obviously can sell no securities of any kind except at a ruinous discount. If the public authorities of Massachusetts have any intelligence for measuring or comprehending financial facts, one of the first jobs they tackle should be the Boston Elevated problem."

Empire State Railroad Corporation

New Company of This Name Organized to Succeed to Part of Empire United Railways' Property

At the organization meeting held in Syracuse on Oct. 30, of the new Empire State Railroad Corporation, which has been formed to take over part of the property of the Empire United Railways, Inc., the following directors and officers were elected: H. S. Holden, William Nottingham, Harold Tenney, Joshua Backman, J. C. Nelson and Thomas W. Meachem, Syracuse; W. H. Lippincott, Philadelphia; C. E. Hotchkiss and F. R. Ford, New York, directors; H. S. Holden, president; F. R. Ford, chairman of executive committee; J. C. Nelson, vice-president and general manager; H. J. Clark, treasurer; S. C. Stivers, secretary and comptroller; J. H. Yoder, auditor; H. C. Beatty, assistant secretary; J. M. Hyland, assistant treasurer.

The new company took over the property from the receiver at midnight on Oct. 31. This new company will own the interurban electric railway between Syracuse and Oswego, including the local electric railway system in Oswego and the Syracuse terminal which is in the center of that city. The Rochester & Syracuse Railroad uses this Syracuse terminal under a rental agreement. The Empire State Railroad Corporation also owns the interurban electric railway extending from Auburn to a connection with the Rochester & Syracuse Railroad at Port Byron, 26 miles west of Syracuse, and also owns part of the local electric railway system in Auburn which is operated by the Auburn & Syracuse Electric Railroad. The total track owned by the Empire State Railroad Corporation is 83 miles, of which 70 miles are interurban and 13 miles city track. Power is supplied by the Niagara, Lockport & Ontario Power Company from Niagara Falls, Salmon River and Oswego River hydro-electric developments reinforced by steam relays.

The Empire State Railroad Corporation has the following capitalization:

Underlying bonds:	Issued
Syracuse, Lake Shore & Northern first mortgage 5 per cent gold bonds due 1947.....	\$2,500,000
Auburn & Northern Electric Railroad first mortgage 5 per cent gold bonds due 1945.....	250,000
Mortgage notes, 6 per cent, three-year.....	350,000
Total funded debt.....	\$3,100,000
Preferred stock, Series A, 6 per cent cumulative.....	\$250,000
Preferred stock, Series B, 6 per cent non-cumulative....	1,250,000
Common stock.....	1,450,000
Total stock.....	\$2,950,000
Total funded debt and stock.....	6,050,000

Addition to Valuation Asked

Missouri Short Line Has Asked the Missouri Public Service Commission to Add About \$3,000,000 to Its Valuation

The Kansas City, Clay County & St. Joseph Railway, Kansas City, Mo., the Missouri Short Line, filed on Oct. 24 with the Missouri Public Service Commission a request for the addition of about \$3,000,000 to its valuation which was set by the commission three years ago at \$3,900,000. The expenses of the suit with the Interstate Railway over right-of-way, involving the settlement at \$250,000 and the various costs, are specified as part of the additional valuation asked, these expenses being naturally chargeable to construction account. The company has also spent money in improvements since the \$3,900,000 valuation was made.

The company asks for a proper amount in the valuation for going value, an item eliminated by the commission. An additional amount is asked for working capital, that allowed by the commission being insufficient.

The company asks also that it be allowed an addition to the valuation on account of its contract for the use of the A. S. B. bridge, and for its power contract. It is shown that these contracts saved an expense of \$1,250,000 for a suitable bridge over the Missouri River, and \$300,000 which would have to be expended for a power house. There was no allowance in the original valuation for these contracts.

The company asks also for a proper allowance for the con-

tract under which it enters Kansas City, and the contract under which it enters St. Joseph.

The introduction of commutation rates 15 miles out from St. Joseph and the same distance out from Kansas City hinges to a certain extent on the result of the application for a new valuation. The Public Service Commission had two years ago ordered the institution of commutation rates based on about 1 cent a mile. This order was held up, and still is held up, by an injunction in the federal court. The railway company has filed a stipulation that commutation rates based on 1.3 cents per mile would be satisfactory to the people asking a rate. Now, J. R. Harrigan, general manager of the company, has indicated that if the valuation he has asked is granted, he will voluntarily put in the commutation rate based on 1.3 cents a mile. This rate is higher than commutation rates in effect on two other interurbans serving Kansas City; but the companies observing such rates are asking the Kansas commission to abrogate them.

B. R. T. Earnings for Quarter

The Brooklyn (N. Y.) Rapid Transit Company has published earnings figures for the quarters ended Sept. 30, 1916 and 1917, as follows:

	1917	1916
Gross operating revenue.....	\$8,180,337	\$7,719,324
Operating expenses.....	4,385,197	4,175,597
Net from operation.....	\$3,795,140	\$3,543,727
Taxes.....	585,408	539,780
Operating income.....	\$3,209,732	\$3,003,947
Non-operating income.....	107,170	125,710
Gross income.....	\$3,316,902	\$3,129,657
Income deductions.....	1,558,368	1,401,837
Net income.....	\$1,758,534	\$1,727,820

A substantial increase of \$461,013 or 5.9 per cent was secured in gross operating revenues. Increases of \$209,600 in operating expenses and \$45,628 in taxes, however, coupled with a decline in non-operating income, reduced the gain in gross income to \$187,245 or about 6 per cent. Income deductions increased \$156,531, owing to new rapid transit fixed charges, and the final result for the last quarter was an increase of only \$30,714 or 1.8 per cent in net income.

Alton & Jacksonville Railway, Alton, Ill.—The Alton & Jacksonville Railway will present arguments before the Illinois Public Utilities Commission on Nov. 5 for permission to dismantle the line and dispose of the property.

Chicago (Ill.) Railways.—At the annual meeting of the Chicago Railways H. H. Hettler was elected a director of the company to succeed Edward S. Hunter, resigned.

Chicago, Aurora & De Kalb Railroad, Aurora, Ill.—The final report of F. W. Cherry, receiver for the Chicago, Aurora & De Kalb Railroad, has been approved in the Circuit Court at Geneva and an order has been entered by Judge Irwin discharging the receiver. The creditors of the company who threw the property into the hands of a receiver had their claims met under the plan referred to in the ELECTRIC RAILWAY JOURNAL of March 31, page 615. Control of the road is now said to be vested in H. H. Evans and his associates.

Cleveland (Ohio) Railway.—According to the operating report of the Cleveland (Ohio) Railway for September, the interest fund has approached dangerously near the point at which an increase in the rate of fare will have to be made. There was a decrease of \$25,806 from the previous month, leaving the sum now in the interest fund \$336,226. The minimum is \$300,000. A total deficit of \$289,834 has accumulated in the maintenance and operating funds since March 1 of this year. This deficit will probably have to be taken care of by March 1, 1918, but just what means will be employed for this purpose has not been discussed. A total of 32,054,407 passengers was carried in September. This is an increase of 5.16 per cent over the same month in 1916. To meet this the service has been increased 3.75 per cent.

Danbury & Bethel Street Railway, Danbury, Conn.—Judge Burpee of the Superior Court has appointed James E. Walsh of Greenwich receiver of the Danbury & Bethel Street Railway. The application was made by Albert H.

Flint, New York, who alleged that the payment of a note for \$1,000 was overdue. The company has an authorized capital stock of \$623,000, of which \$320,000 is outstanding. The company has paid no dividends on the stock since January, 1912, when 2 per cent was distributed. It paid 4 per cent per annum from January, 1907, to the time dividends were suspended. It has outstanding \$339,500 of first and refunding mortgage 5 per cent bonds; \$63,000 of debentures due on March 1, next, and \$86,000 of debentures due on Jan. 2, 1921.

Illinois Traction Company, Peoria, Ill.—The Danville Street Railway & Light Company has applied to the Illinois Public Utility Commission for permission to issue \$81,000 of consolidated and refunding mortgage 5 per cent bonds. The Decatur Railway & Light Company has applied to the commission for permission to issue \$60,000 of first and consolidated mortgage 5 per cent bonds. Both companies are controlled by the Illinois Traction Company.

Kansas City, Clay County & St. Joseph Railway, Kansas City, Mo.—The suit of the Interstate Railway against the Kansas City, Clay County & St. Joseph Railway for \$2,000,000 has been settled for \$250,000. The settlement is referred to at length on page 832 of this issue of the ELECTRIC RAILWAY JOURNAL.

Louisville (Ky.) Traction Company.—The directors of the Louisville Traction Company will meet on Nov. 27 in New Jersey to carry out the details of dissolution of that corporation and exchange of the stock for stock of the Louisville Railway. The proposed exchange of stock has been referred to previously in the ELECTRIC RAILWAY JOURNAL of March 3, page 410; April 7, page 663, and Oct. 13, page 696.

Mahoning & Shenango Railway & Light Company, Youngstown, Ohio.—The Mahoning & Shenango Railway & Light Company has asked the Ohio Public Utilities Commission for permission to issue \$3,700,000 of 7 per cent bonds, to sell at not less than 90. The money is to be used for improvements and paying obligations.

Norwood, Canton & Sharon Street Railway, Sharon, Mass.—The property of the Norwood, Canton & Sharon Street Railway has been sold to William J. O'Connor, Fall River, Mass., a dealer in junk. It was stated that Mr. O'Connor contemplates tearing up the road, but that the selectmen of Norwood and of Sharon object to this unless the highway over which the road operates is put into good condition. Recently the fare over the road was raised to 14 cents for a 6-mile run. The 3 miles in Sharon and the same distance in Norwood were each 7 cents.

Rochester, Syracuse & Eastern Railroad, Syracuse, N. Y.—The bondholders of the Rochester, Syracuse & Eastern Railroad, who failed to deposit their bonds with the bondholders' protective committee, will receive about \$305 per \$1,000 bond, according to the report of C. Loomis Allen, receiver of the company, filed with Justice Hubbs in the Supreme Court. The total receipts from June 1, 1916, to Sept. 30, 1917, the period of receivership, amounted to \$1,134,908, and total disbursements were \$874,040, leaving a balance of \$260,868, which is to be turned over to the protective committee. This committee now has a total of \$1,771,154, of which \$1,000,000 was realized by the sale of the road to the reorganization committee. The remainder is in the hands of the Columbia Trust Company, New York, trustee, and the receiver. From the \$260,868 to be turned over by the receiver \$30,000 in current bills must be paid, in addition to fees for attorneys and a small claim for injuries.

Southern Traction Company, Bowling Green, Ky.—The property of the Southern Traction Company has been sold to the Cal Hirsch Sons' Company, St. Louis, Mo., for \$21,000, subject to the approval of the court. It is believed that the purchaser contemplates dismantling the plant. This was one of the properties referred to in the article, "Mortalities Increase," published in the ELECTRIC RAILWAY JOURNAL for Oct. 27, page 788.

Union Traction Company, Nashville, Tenn.—The Union Traction Company, incorporated under the laws of Tennessee on Oct. 8 as the successor to the Nashville-Gallatin Interurban Railway, has made a mortgage to the Nashville Trust Company securing an issue of \$300,000 of thirty-year 6 per

cent first mortgage gold bonds, issued at the rate of \$10,000 a mile. The bonds are dated Dec. 1, 1917, are due after thirty years, but are callable after three years at 105 and interest in amounts of \$5,000.

United Railroads, San Francisco, Cal.—The California Railroad Commission has authorized the United Railroads to use \$310,807 of its depreciation fund to reimburse its treasury in part for expenditures for additions and betterments from July 1, 1915, to Aug. 31, 1917, being in addition to \$139,193 authorized by a decision of the commission dated Aug. 29, 1915. In August, 1915, the commission directed the United Railroads to establish a depreciation account of \$550,000 a year for three years, \$25,000 a month, \$300,000 a year to be expended only for the construction of additional facilities or extensions and the fulfilling of franchise obligations, or the improving of service. Recently the United Railroads applied to the commission for permission to use \$583,662 of the fund to replace money spent to better its system. The commission says that it has not had sufficient time to check all the reported expenditures, but at least \$450,000 represent proper capital charges. The commission deducts \$139,193 for that amount allowed, as stated above, in a previous decision.

Electric Railway Monthly Earnings

BANGOR RAILWAY & ELECTRIC COMPANY, BANGOR, ME.						
Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income	
1m., Sept., '17	\$80,836	*\$42,701	\$38,135	\$19,000	\$19,135	
1 " " '16	74,833	*38,244	36,589	18,164	18,425	
12 " " '17	871,269	*496,695	374,574	224,813	149,761	
12 " " '16	810,403	*440,681	369,722	212,565	157,157	
CHATTANOOGA RAILWAY & LIGHT COMPANY, CHATTANOOGA, TENN.						
1m., Sept., '17	\$72,342	*\$129,262	†\$56,920	\$29,539	†\$86,450	
1 " " '16	105,056	*72,995	32,061	29,528	2,533	
12 " " '17	1,347,092	*1,023,185	323,907	357,053	†33,146	
12 " " '16	1,214,613	*766,421	448,192	356,153	92,040	
CLEVELAND, PAINESVILLE & EASTERN RAILROAD, WILLOUGHBY, OHIO						
1m., Aug., '17	\$56,717	*\$31,183	\$25,534	\$11,574	\$13,960	
1 " " '16	46,303	*24,825	21,478	11,467	10,010	
8 " " '17	356,811	*217,283	139,528	93,582	45,946	
8 " " '16	307,896	*170,842	137,054	91,098	45,956	
EAST ST. LOUIS & SUBURBAN COMPANY, EAST ST. LOUIS, ILL.						
1m., Sept., '17	\$320,857	*\$218,882	\$101,975	\$65,495	\$26,480	
1 " " '16	260,888	*152,922	107,966	63,150	44,816	
12 " " '17	3,543,807	*2,302,744	1,240,063	773,360	466,703	
12 " " '16	2,862,052	*1,701,587	1,160,465	752,969	407,496	
FEDERAL LIGHT & TRACTION COMPANY, NEW YORK, N. Y.						
1m., Aug., '17	\$230,227	*\$168,927	\$61,300	\$49,663	\$11,637	
1 " " '16	203,228	*129,261	73,967	48,296	25,671	
8 " " '17	1,798,732	*1,248,311	550,421	392,126	158,295	
8 " " '16	1,657,124	*1,116,855	540,269	389,228	151,041	
HUDSON & MANHATTAN RAILROAD, NEW YORK, N. Y.						
1m., Sept., '17	\$508,219	*\$241,344	\$266,875	\$218,019	\$48,856	
1 " " '16	475,988	*218,846	257,142	214,390	42,752	
12 " " '17	4,484,579	*2,726,521	1,758,058	653,118	1,044,940	
12 " " '16	4,370,638	*2,629,238	1,741,400	643,739	97,661	
INTERBOROUGH RAPID TRANSIT COMPANY, NEW YORK, N. Y.						
1m., Sept., '17	3,073,470	*1,810,984	1,262,486	1,070,000	†\$455,207	
1 " " '16	3,007,107	*1,449,978	1,557,129	993,277	†\$619,582	
3 " " '17	8,909,808	*5,202,030	3,707,778	3,203,754	†\$1,356,191	
3 " " '16	8,390,087	*4,282,345	4,107,742	2,979,989	†\$1,295,348	
LAKE SHORE ELECTRIC RAILWAY, CLEVELAND, OHIO						
1m., Aug., '17	\$180,006	*\$114,431	\$65,575	\$35,174	\$30,400	
1 " " '16	167,567	*89,799	77,768	36,455	41,313	
8 " " '17	1,165,162	*785,736	379,426	276,339	103,087	
8 " " '16	1,054,483	*663,977	390,506	290,972	99,534	
LEWISTON, AUGUSTA & WATERVILLE STREET RAILWAY, LEWISTON, ME.						
1m., Sept., '17	\$86,834	*\$57,184	\$29,650	\$15,538	\$14,112	
1 " " '16	78,549	*50,793	27,756	15,134	12,622	
12 " " '17	883,572	*652,173	231,399	185,869	45,530	
12 " " '16	785,306	*526,854	258,452	189,810	68,642	
NASHVILLE RAILWAY & LIGHT COMPANY, NASHVILLE, TENN.						
1m., Sept., '17	\$210,085	*\$134,315	\$75,770	\$40,980	\$34,790	
1 " " '16	206,901	*127,708	79,193	41,887	37,306	
12 " " '17	2,434,511	*1,553,323	881,188	494,302	386,886	
12 " " '16	2,339,406	*1,436,945	902,461	512,046	390,415	
PORTLAND RAILWAY, LIGHT & POWER COMPANY, PORTLAND, ORE.						
1m., Sept., '17	\$501,149	*\$299,150	\$201,999	\$177,545	\$24,454	
1 " " '16	453,731	*244,193	209,538	178,811	30,727	
12 " " '17	5,833,067	*3,197,453	2,635,614	2,165,120	470,494	
12 " " '16	5,422,757	*3,052,791	2,369,966	2,179,732	190,234	

*Includes taxes. †Deficit. ‡Includes non-operating income. §Includes accruals, under rapid transit contracts with city, payable from future earnings.

Traffic and Transportation

Mileage Rate for Chicago, North Shore & Milwaukee Line

Illinois Commission Grants Fare Increase and Change from Five-Cent Zone System—Company Receives Benefit of Present Abnormal Traffic

The Illinois Public Utilities Commission in a recent order authorized the Chicago, North Shore & Milwaukee Railroad, Highwood, Ill., to increase its rates on account of increased operating expenses, and to change its passenger fare schedule from a zone system to a mileage basis. The order characterized the zone system as inherently discriminatory and inevitably causing friction. It stated also that the right of the commission to disregard franchise provisions fixing rates of fare was clear.

In computing the return to be allowed the company, the commission declined to consider temporary traffic conditions of uncertain duration, arising from the unusual war-time activities at Fort Sheridan and the Great Lakes Naval Training Station. Though these conditions worked to the benefit of the company, it had operated at a disadvantage in the past and would have to do so again on the return of normal conditions. Rates based on the present abnormal circumstances, the commission said, would be clearly unfair to the company.

NEW MILEAGE RATE AUTHORIZED

The old passenger schedule of the company was based upon a 5-cent zone system, there being ten zones in Illinois on the main line and three upon the Libertyville branch. For this schedule the company is now authorized to substitute one based upon a ticket rate of 2 cents a mile, the same as authorized by the Wisconsin Railroad Commission for the company's line in that State. The minimum fare will be 5 cents, but no fare within the corporate limits of any municipality is to exceed 5 cents. Conductors are authorized to collect fares of the amount ending in 5 or 0 next greater than the ticket fare from passengers paying cash from stations where tickets might have been procured.

The rate for round-trip tickets is to be double the one-way rate, and twenty-five ride commutation tickets are to be sold for twenty-three times the one-way rate. A 1000-mile mileage ticket will be sold for \$17.50. Fifty-ride commutation tickets are to be sold to children of eighteen years and under on the basis of 1 cent a mile with a minimum charge of \$1.50 for fifty rides. These tickets may be restricted to hours between 7 a. m. and 6 p. m. on week days only, during all months except July and August. Children five years and under, when accompanied by an adult, are to be carried free; but over five years and under twelve years, they are to pay half the regular fare, the half-fare payment being raised to 5 or 0.

PROBABLE RATE OF RETURN FOR 1917 WILL BE 5.61 PER CENT

The old rates, in effect throughout 1917, would probably have resulted in a return of 4.25 per cent, after providing for depreciation, upon the fair value of the property. Had the new rates been in effect throughout 1917, the return would have been 7.8 per cent. As it is, a return of 5.61 per cent can be expected for 1917, which is not considered unreasonable. The company is required to report quarterly as to its financial progress.

The fair value of the property in Illinois was determined to be not less than \$5,100,000. The original cost of the property in Illinois and Wisconsin as shown by the books was \$13,918,862, but the original cost of the Illinois section could not be accurately ascertained. The petitioner purchased the property at receiver's sale on May 1, 1916, paying and assuming obligations therefor to the amount of \$2,680,001, including capital stock of \$100,000. The commission decided that \$120,000 reasonably represents the depreciation accruing for 1918 and each year thereafter, and that 3.5 per cent of the cost of the depreciable

property is deemed sufficient for future additions and betterments. A sum of \$30,000 must be set aside for depreciation before the end of this year.

COMMISSION CRITICISED PAST EXPENDITURES

The propriety of many of the company's past expenditures was questioned. With regard to station construction, the order held that it need not be limited to shelter purposes, and that a pretentious building in a wealthy community like Lake Forest, harmonizing with the general surroundings, is justifiable; but that an expensive station on the outskirts of a municipality like Zion City represents an unreasonable expenditure. Bridges built for four tracks, where the right-of-way of the most heavily burdened portion of the road limited it to two tracks, and where the two tracks over such bridges were not employed to full capacity though the line had been in operation for twelve years, were held to be overbuilt and the excessive expenditures unreasonable. The construction of a double-track branch line beginning and ending in small villages and running through almost exclusively farm territory, on which traffic has been developed to such a limited extent that only one track is used, was held an unwarranted expenditure. A return was allowed only on the reasonable investment in the line. Property owned by the interurban company, but used exclusively for street railway purposes in the city of Waukegan was included in the valuation for interurban rate-making purposes only to the extent of the incidental worth of the convenience of having such a system operated in connection with the company's main line.

Several valuation questions arose. The commission condemned the use of lump sums of any considerable amount, the determination of legal expenses by means of fixed percentage of other expenditures, and the determination of taxes by taking the average of the actual expenditure during the five years next preceding the valuation. Only the amounts actually paid for franchise privileges were allowed, and no allowance was made for going value as a separate item. Paving paid for by special assessment was held a proper charge when the land is inventoried at its actual cost, but not when it is valued upon a reproduction basis. Ballast was depreciated.

Rate Changes in Ohio

Review of Some Passenger and Freight Rate Changes Allowed by the Ohio Commission and of Applications Now Pending Before that Body

From steps already taken it is evident that it is the policy of the Public Service Commission of Ohio to grant the applications of interurban electric railways for increased fares wherever it can be shown that additional income is necessary for their financial safety or to meet the higher expenses brought about by war conditions. A number of these requests have already been decided in favor of the roads, notwithstanding the fact that objections have in some cases been made by their patrons. The commission, however, has always taken the time necessary to go into the merits of the requests thoroughly, even where the change was urged for an early date to prevent deficits or threatened shortages in other directions. In the case of some of the roads, the new schedules are higher than those of the steam roads. Laws governing them, so far as fare schedules are concerned, have been interpreted as not applying to interurban lines, and this has given the commission an opportunity to judge each case upon its merits. In order, however, not to be unjust or cause the roads to lose business, the electric railways have been allowed to make competitive rates wherever this was found necessary for their protection. It may be said with some degree of assurance that this privilege will not be abused, for the interurban roads, in a general way, need as large an income as can be obtained and will make no reduction where it is not necessary.

PASSENGER FARE ADVANCES ALLOWED

The Western Ohio Railway, with headquarters at Lima, was one of the first to make application for an increase in its passenger schedule. It had been operating on a basis of 2 cents a mile, but was able to show the commission that

an increase was urgent. Within a short time an order was issued, giving it the right to formulate a schedule on the basis of 2½ cents a mile.

Shortly afterward the Cleveland, Southwestern & Columbus Railway asked for authority to revise its passenger schedule on the basis of 2½ cents a mile and, after a brief delay, this petition was also granted. The one-way fares on this road are all higher than those of the steam roads, except on some of the long hauls, where there is competition from the steam lines. The same condition exists at a point or two in other places where round-trip tickets are now sold at a reduction that will meet the steam rates. Five-cent fare zones have been shortened from 2½ miles to 2 miles. Not much trouble has been encountered from the public in establishing the new schedule.

A revised passenger schedule, on the basis of 2 cents a mile, went into effect on the Northern Ohio Traction & Light Company, Akron, on Oct. 1. Although the former fare basis was low, this road has been one of the most prosperous in the State and the new basis, therefore, is not as high as that of some of the other roads. All round-trip tickets have been eliminated and other changes have been made which place the road on a better basis than it has been in the past, so far as rates of fare are concerned. Like others, it has had to take care of some competition.

The Stark Electric Railway, Alliance, has been granted authority to make an increase in passenger rates by the elimination of discounts on round-trip tickets and to advance the price of its 500-mile books from \$7.50 to \$10. It is now working under this advance.

ELECTRIC FREIGHT RATES ADVANCED

All Ohio electric railways doing a freight business have been authorized by the Public Utilities Commission to revise their freight rates upon the basis of rates recently granted to the steam roads. This means a 15 per cent advance over what are known as Zone A rates, and these were established by making a like advance over the original rates. The electric railways were instructed to file their revised freight schedules with the commission by Oct. 31.

SOME PASSENGER INCREASES NOW PENDING

An application for an increase of about 15 per cent in the basis passenger rate on the Lake Shore Electric Railway, Cleveland, is now pending before the Public Utilities Commission. A brief hearing was held on the matter on Oct. 23. The commission withheld its decision for two or three weeks. It is probable that a revised schedule cannot be put into effect by this company until about Nov. 15.

While no formal application has been filed with the commission by the Cleveland, Painesville & Eastern Railway, with headquarters at Willoughby, that company is checking up its figures and in all probability will make a request for a passenger increase within a few weeks. It is doing a large passenger business, but its equipment and track must be kept in first-class condition to meet demands.

The Mahoning Valley Railway, Youngstown, Ohio, made application on Oct. 19 for an advance in its passenger rates. While boards of trade and other organizations in the towns through which the company operates have filed objections with the commission, no trouble is anticipated in securing authority from the commission to make the desired increase, since good reasons for taking the step have been advanced.

Tickets Withdrawn in Portland

The Portland Railway, Light & Power Company, Portland, Ore., following the ruling of the Public Service Commission referred to at length in the *ELECTRIC RAILWAY JOURNAL* of Oct. 27, page 757, has withdrawn from sale car tickets at 4½ cents and school tickets at 3½ cents, and has instituted the new rate of 5 cents for unlimited tickets, and 4 cents for school tickets. It is estimated that the saving effected under the change will be at least \$5,000 a month to the company, or 10 per cent of the \$50,000 a month that the new increase in wages and the eight-hour day will cost the company. Tickets now held by patrons of the company will be honored for fare as usual. The company is experimenting with revised schedules for its electric railway lines in an effort to ascertain where economies may be effected without curtailing service.

Buffalo Recommendations Adopted

President Connette of the International Railway Says That Commission's Traffic Recommendations Have Been Complied with or Will Be Met

All of the recommendations embodied in the report of Charles R. Barnes, electric railway inspector for the Public Service Commission of the Second District of New York, as the result of his survey of traffic conditions on the Buffalo, N. Y., lines of the International Railway will be adopted by the company. Appearing at a hearing before the commissioners in Buffalo, E. G. Connette, president of the International Railway, and Thomas Penney, vice-president and general counsel, told of the company's plans for improving its service in the 5-cent fare zone.

SAFETY ISLAND TO BE IMPROVED

Application has been made to the City Council by the International Railway for authority to enlarge the safety island at Shelton Square and build a shelter over it at an estimated cost of \$8,000. The enlarged safety island would permit the loading of three cars at one time at this congested transfer point. The Niagara and Grant lines which start from Shelton Square are two of the heaviest patronized arteries to the west side and Riverside district. The shelter will be built of steel and will have a tile roof.

Another important change which the company expects to make is the routing of the Broadway and other east side lines around the Soldiers' Monument in Lafayette Square. It is proposed to lay a single track loop around the monument so as to loop cars around the Lafayette Square and thereby remove a large part of the traffic congestion from Washington street south of the square.

EXTENSION OF ELMWOOD LINE

President Connette told the commissioners that tracks are now being laid on the Elmwood Avenue extension from Hertel Avenue to the north city line so as to accommodate the rapidly increasing traffic in the north-end industrial district. It is estimated that 20,000 passengers board cars in this district between the hours of 5 and 6.30 o'clock every night. Plans are also being made for an efficient loading terminal in this vicinity. Cars carrying passengers from this new industrial district will run as express cars over a new route so as to eliminate the congestion on Elmwood Avenue during the evening rush hours.

Large additions are being built to the company's power generating equipment. Substations are being built at North Division and Oak Streets and in Military Road near the Hertel Avenue carhouse. The new 10,000-kw. equipment, at the old Niagara Street power house, will soon be ready.

NEW LIGHTS FOR CARS

Mazda-type lamps have replaced the old carbon lights in all of the company's cars. Cars returning to the carhouse from the city lines after the rush-hour traffic will hereafter stop and pick up passengers who desire to ride as far as the carhouse. Rerouting plans are being worked out for various east side lines so as to reduce the running time between outlying sections and the heart of the downtown section of the city. The skip stop has been placed in operation on all of the company's city lines, and the 100 new front-entrance center-exit Peter Witt cars are now arriving from the Kuhlmann shops in Cleveland at the rate of ten a week. Many of these cars are now in use on the Niagara Street line.

RECOMMENDATIONS ALL MET

President Connette also explained that little difficulty will be experienced this winter in heating the company's cars. All of the near-side pay-as-you-enter cars have been equipped with coal stoves with forced circulation and the new electrical equipment will allow the company to heat the other types of cars with electricity. Additions have been made to the company's snow-fighting equipment and orders have been placed for some new equipment, including additional double-truck snow plows, sweepers, etc. President Connette told the commission that every recommendation has been fully complied with or plans have been made for putting the recommendations into effect as soon as practicable.

Electric Freight for Cattle Show

Freight Facilities of Kansas City Railways Make Possible the Holding of Annual Exposition Which Proves Unusual Success

The Kansas City (Mo.) Railways performed a valuable freight service recently by hauling cattle to and from the American Royal Live Stock Show, which was held on Oct. 1 to 6. The American Royal, which was started in 1898, is the annual exposition of beef cattle in Kansas City. Except for the facilities of the Kansas City Railways, the show would probably have been omitted this year or held in another city. Neither the stockyards, where the show was usually held, nor Convention Hall, where it was held the past two years, could be used this year. Clyde Taylor, vice-president and acting president of the railway, suggested Electric Park as a good location because transportation facilities for the people are excellent on account of the large traffic during the summer and because it affords ample buildings and grounds. The objection to it was that a distance of 5 miles from steam railroads made too long a drive for fine cattle. This objection was removed, however, when Mr. Taylor declared that his company could bring the cattle to within about a mile of the park and thus greatly reduce the inconvenience to the stockmen.

EIGHTY CARS HAULED

The stock cars were delivered to the Kansas City Railways at Dodson, where physical connection is made with the steam roads. They were then hauled 9 miles by electric locomotives and through the residence districts to Forty-sixth and Main Streets, where docks had been erected, lights and telephones installed, and facilities provided for handling the cattle. In hauling the total of eighty cars regular passenger traffic on the line was undisturbed. There were no accidents and, so far as known, no objection from residents of the district.

In the last few years the freight business of the Kansas City Railways has increased rapidly, practically all the building materials for several fine residence districts having been hauled over its lines. The trackage of the freight terminal was useful for storing cars during the recent show. Because of provisions for handling large crowds at Electric Park, more than 150,000 people had attended a patriotic festival there during the previous week. There were many comments on the accessibility of the resort for the exposition, especially in view of the fact that by comparatively small track improvement, heavy freight could be brought directly to the district in trainload lots.

Traffic Perils Increase

In New York City 25,000 People Are Injured in a Year in Street Accidents of All Kinds

Theodore P. Shonts, president of the Interborough Rapid Transit Company, New York, N. Y., is calling upon the public to take a lively interest in the "alarming increase" of traffic accidents. Mr. Shonts declares that the street traffic and the consequent congestion in New York have reached a point that is dangerous, and that the city must take some action to impress on every individual his own responsibility for the safety of others. Mr. Shonts, in his statement, says in part:

25,000 INJURED IN YEAR

"The increase in street accidents of all kinds, on and off the car lines, has become appalling. About 25,000 persons a year are injured, and the number is constantly increasing. Many lives are lost in street accidents which a little care would have prevented.

339 PERSONS HURT IN CAR ACCIDENTS IN MONTH

"On Oct. 28 there was put before me a report of accidents of all kinds on the New York Railways in the month of September. It showed that 339 passengers were hurt on the New York Railways in September in getting on and off cars. Many of these accidents happened after the car had been brought to a stop, and were due entirely to carelessness.

"New York people have scant idea of the tremendous in-

crease of street traffic of all sorts in the last year, and there is every prospect that the coming winter will see traffic congestion far worse than the city has ever known.

225,000 AUTOS IN NEW YORK CITY

"There are 225,000 automobiles operating in New York City. This is about 50,000 more than a year ago. Yet there seems to be even less care exercised by the people driving. The experience of our company leads us almost to think that every driver makes it his special object to run his automobile on the car tracks. Due largely to this practice there were 391 collisions in September between cars and vehicles, in which twenty-six car passengers were injured or at least thrown in these accidents.

"There were 1277 accidents of all kinds in September on the surface lines, as compared with 927 in the same month last year, an increase of about 38 per cent. The responsibility for some of these accidents rests on the company, due either to some mechanical failure or man failure, but for the most part they are the natural result of overcongestion."

Pro Bono Publico Autos

Commissioner J. M. Mann of Portland, Ore., in charge of the department of public utilities, is investigating the Pro Bono Publico Club, which is operating automobiles on the city streets without bonding the drivers or complying with any of the other jitney laws passed by the people at the last city election. Secretary-Treasurer Emerson of the Pro Bono Publico Club asserts that the club is not operating jitneys and that only members of the organization can ride in the cars. However, anyone paying 25 cents and giving his name to any of a number of agents can secure a membership card, which entitles him to five rides on either of the two lines now in operation. Other privileges of the "club," such as shoe shines and lunches at cost, checking of baggage and free telephones, promised to the "members" have not yet materialized. Twenty-five cars are leased or rented, and drivers are hired to operate them. In order to test the legality of the "club," fifteen drivers who have been operating the jitneys have been arrested.

Milwaukee Fare Hearing Nov. 7.—Hearings are to begin on Nov. 7 on the petition of The Milwaukee Electric Railway & Light Company, Milwaukee, Wis., to the Railroad Commission of Wisconsin for the readjustment of its street and interurban railway fares.

Jitney Zone Restriction Removed.—The section of the traffic ordinance of Waterbury, Conn., which forbids jitney drivers from stopping to take on or let off passengers between Exchange Place and Brook Street, on East Main Street, has been suspended by vote of the Aldermen.

Fare Hearing in Rutland Postponed.—The hearing before the Public Service Commission of Vermont to consider the petition of the Rutland Railway, Light & Power Company for the right to increase the fares on its lines in Rutland and on the main line to Poultney, has been postponed to Nov. 1.

Fare Increase Protested.—A protest has been filed with the Public Service Commission of Pennsylvania by the cities of Harbor Creek and Northeast, Pa., against the proposed increase in passenger fares on the Buffalo & Lake Erie Traction Company, Buffalo, N. Y. The rates affect only the schedules within the State of Pennsylvania.

I. T. S. Fare Basis Change Under Advisement.—A public hearing was held on Oct. 26 on the application recently made by the Illinois Traction System to the Public Utilities Commission of Illinois for permission to file tariffs substituting for its present zone system a 2-cent-per-mile ticket fare and 3-cent-per-mile cash fare. As there were no objectors at the hearing, the commission took the application under advisement.

Hearing on Nov. 12 on Petition for Return to Five-Cent Fare.—The Public Utilities Commission of Connecticut on Oct. 25 acknowledged the receipt of the petition from the city of Hartford asking that the Connecticut Company be compelled to return to the 5-cent fare in Hartford. The commission took the matter under advisement and on Oct.

31 announced that it would hold a hearing at Hartford on Nov. 12 at 11:30 a. m.

Protest Against Pottstown Fare Increase.—The Burgess and Town Council of Pottstown, Pa., have filed a complaint with the Public Service Commission of Pennsylvania against the increase in passenger rates by the Reading Transit Company. The company operates from Chestnut Hill, Montgomery County, to Boyertown, Berks County. It is contended that the company has increased the rates from 5 to 6 cents in Pottstown, but not in other boroughs through which it passes.

More Philadelphia & Western Rate Hearings.—At the hearing held on Oct. 25 by Public Service Commissioner Ryan on the complaint against Philadelphia & Western Railroad rates out of Philadelphia the commissioner said that so far counsel for the plaintiffs had not shown sufficient cause for a ruling by the commission enjoining the increased rates. Further time was allowed for an examination of the company's books by accountants representing the company and the plaintiffs, following which examination another hearing will be held.

Conference on Uniform Operating Rules in Connecticut.—Representatives from all the electric railways operating in Connecticut held an all-day conference on Oct. 25 with the Public Utilities Commission regarding the adoption of uniform operating rules for the different railways. It was decided that representatives of all the companies receive a copy of the rules and regulations of the Connecticut Company and that they report back to the commission on Jan. 4 of next year in regard to any changes in the rules of that company which they may deem to be expedient so that the amended rules can be adopted as standard for the State.

Bus Line to Be Operated by Railway.—The Peninsular Railway, San Jose, Cal., has received permission from the Railroad Commission of California to operate three automobile stages between Palo Alto and Camp Fremont at a 10-cent fare, making connection with the company's electric cars from San Francisco at the company's depot in Palo Alto. The company will publish a schedule in connection with round-trip tickets issued by its interurban railroad at the rate of 10 cents per round trip, the amount added to the round-trip rates on the electric line. The commission has also granted authority to two motor bus companies to operate automobiles between Palo Alto and Camp Fremont.

Jitney Drivers to Fight Ordinance.—Jitney drivers of Waco, Tex., have taken steps looking to the formation of an organization to fight an ordinance recently enacted by the City Commission which prohibits the loading or unloading of passengers on certain streets within the business district of the city. The ordinance, while not intended primarily as a prohibitive regulation of jitneys, has had that effect, since it prohibits jitneys from stopping within the business district to discharge or take on passengers. The ordinance was intended to relieve congestion within the business district. The jitney drivers have employed an attorney and announce that they will take the case to the higher courts.

La Salle Excludes One-Man Operation.—A few months ago the Chicago, Ottawa & Peoria Railway attempted to gain the consent of the local authorities of La Salle, Ill., to operate the local cars with one man. This authority was not granted by the city officials, but they did not forbid such operation and so the company began one-man operation during the slack times of the day, using two men during the rush hours in the morning and evening, as a trial of the system. This service was continued about two months, when the City Council, without notice, passed an ordinance making it obligatory on the part of the company to use two men on all cars at all times. The company has therefore been forced to discontinue its one-man operation for the present at least.

Rerouting Plan at Columbus Approved.—In an informal way the Columbus City Council has approved the rerouting plan for the cars of the Columbus Railway, Power & Light Company, Columbus, Ohio. It was intended to eliminate the congestion on High Street, but a change allowing West Side cars to continue on that thoroughfare will reduce traffic only about 25 per cent from present conditions. Harold W. Clapp, general superintendent of the company, informed

the Council that the company objects to the plan and will be unable to make changes in track and supply cars provided by it. He said that the rate of fare was too low to take care of operation as it is now. The plan was formulated by a number of civic associations. The formal vote will be taken later.

Service Complaint Dismissed.—The complaint by Isaac R. Breen, as Mayor of Watertown, N. Y., against the Black River Traction Company charging unsafe and inefficient service has been dismissed upon the evidence submitted at a hearing held at Watertown on Sept. 8. It appears that at the time the complaint was made the railway was involved in a disagreement with its employees, who left the road. The company then employed other men to operate its cars. At the time the complaint was filed with the commission there was more or less disturbance in Watertown due to the employment by the company of so-called "strike breakers." Conditions have since changed and the cars are now being operated by practically the same men who left the company's employ during the dispute. In addition reports submitted by Charles R. Barnes, electric railroad inspector of the commission, show that reasonable service is being furnished by the company in Watertown.

New Traffic Rules in Lexington.—A new traffic measure has been enacted by the City Commission of Lexington, Ky., providing for safety zones at congested points in the downtown streets and requiring cars of electric railways to stop on the near side of intersections. Vehicles must stop 5 ft. to the rear of cars halted to discharge or take on passengers, except where safety zones are provided; automobiles must pass electric cars to the right; the speed limit is reduced from 12 m.p.h. to 10 m.p.h. in the congested district and the limits of this district extended. Glaring headlights are taboo and owners and drivers of pleasure vehicles are required to lock them securely when they are parked in areas where parking is permitted. The Board of Commerce and the Automobile Club co-operated in framing the regulations, which are left to the Department of Public Safety for enforcement. Penalties include fines up to \$25 and imprisonment up to thirty days at the discretion of the court.

Increase in Traffic on New York's New Transit Lines.—Recent figures tabulating the number of passengers carried on the new rapid transit lines of the Interborough Rapid Transit Company show large increases over the estimates made by experts when the dual system contracts were signed. Besides, the new lines have not affected the increase in passenger traffic on the old lines. The Queensboro subway when opened in June, 1915, carried 40,136 passengers. In September of this year 1,301,684 passengers were carried. On the White Plains Road line, which was opened last March, 179,142 passengers were carried in the first month, and in September 310,342 passengers were carried. On the Jerome Avenue line, opened in June, the number of passengers carried has increased from 168,150 in that month to 247,970 in September. The shuttle line on Seventh Avenue from the Pennsylvania Railroad station to Times Square Station, about 1 mile long, opened in the same month, carried 99,636 passengers, and in September this total had increased to 252,255.

Protests Filed Against Proposed Elimination of Four-Cent Ticket.—Briefs have been filed with the Public Utilities Commission of Utah by Davis County, Bountiful, Centerville and Midvale in opposition to the petition of the Utah Light & Traction Company for permission to discontinue the sale of fifty tickets for \$2. The brief filed by Davis County states that one of the principal objections to the proposed increases on the suburban lines is that the new tariff discriminates against the suburban protestants in favor of Salt Lake City. The elimination of the 4-cent ticket and the extra charge for transfer is a blanket increase, affecting the suburban patron equally with the city patron, but for the suburban patron another fare has been added in the extra zone. The Midvale brief asserts that the commission is without jurisdiction in the premises because the franchises come under control of the city. It is contended that the railway company should not be permitted to retain the parts of the franchises which are beneficial to it and repudiate the other terms and conditions under which the permits to operate were granted.

Personal Mention

Edward J. Cook, chief engineer of all the lines of the New York State Railways, with office in Rochester, has resigned.

F. E. Fryhstrand has been appointed acting assistant treasurer of the Middlesex & Boston Street Railway, New-
tonville, Mass.

Frank J. Vestal will hereafter hold the title of superintendent of steam power with the Union Traction Company of Indiana, Anderson, Ind.

J. H. Lockett has been appointed master mechanic of the electric lines at Oakland, Alameda and Berkeley, Cal., of the Southern Pacific Company.

G. H. McFee has been appointed superintendent of transportation of the Boston & Worcester Street Railway, Framingham, Mass., effective Nov. 1.

James Watt, shop foreman of the Union Railway, New York, N. Y., has been appointed master mechanic of the Berkshire Street Railway, Pittsfield, Mass.

J. Jordan, vice-president and general manager of the Cleveland, Painesville & Eastern Railroad, Willoughby, Ohio, has resigned to become president of the Electric Package Company.

Joseph A. Barry, formerly general manager of the New Jersey & Pennsylvania Traction Company, is now doing special work for several electric railways in the Western and Southern States.

Albert C. VanDreisen has been made secretary of the Toledo Railways & Light Company, Toledo, Ohio. He will succeed C. E. Murray, who has resigned as secretary and auditor of the company.

E. H. Masterson has been appointed day foreman of Fort Wayne city cars of the Fort Wayne & Northern Indiana Traction Company. He has been in the employ of that company for the last thirty years.

Ralph E. Aiken, carhouse foreman of the Third Avenue Railway, New York, N. Y., has resigned to accept the appointment of inspector of equipment with the Public Service Commission for the First District of New York.

Chester N. Chubb, at present manager of the Northern Indiana Gas & Electric Company, South Bend, Ind., has been appointed general manager of the People's Light Company, a subsidiary of the United Light & Railways Company, which operates in Davenport, Rockingham and Bettendorf, Iowa.

C. S. Keever has been appointed superintendent of transportation for the Union Traction Company of Indiana, Anderson, Ind., to succeed Charles A. Baldwin. Mr. Keever has been division superintendent at Muncie and Tipton for a number of years. He was the oldest division superintendent of the company from the standpoint of service.

Edward R. Kelsey, manager of publicity of the Toledo Railways & Light Company, Toledo, Ohio, and Governor of the Rotary district comprising Ohio, Michigan and West Virginia, is engaged in organizing the Rotary clubs for the support of the Y. M. C. A. war fund and the soldiers' recreational fund campaigns. He was scheduled to speak in several towns in the district during the last few days.

R. B. MacDonald, formerly general manager of the Fort Dodge Gas & Electric Company, Fort Dodge, Iowa, has been appointed general manager of the People's Power Company, which operates in Moline, Rock Island and other surrounding Illinois towns and supplies energy to the Tri-City Railway, Davenport. Speaking of his appointment, B. J. Denman, vice-president and general manager of the Tri-City Companies, said: "Mr. MacDonald has been in our service more than eight years, formerly as general superintendent, and for the last three years or more as general manager at Fort Dodge. This new appointment comes to him as a merited promotion in the United Light & Railways Company organization."

Charles H. Hile was elected secretary of the New England Street Railway Club and editor of the *Street Railway Bulletin* at the first fall meeting of the club on Oct. 25.



C. H. HILE

Mr. Hile is widely known in the electric railway field, having been president of the club in 1910-1911 and for about twenty years an executive officer of the Boston (Mass.) Elevated Railway. He received his education at Pennsylvania State College, from which he was graduated in 1892 in mechanical engineering. He afterward took a post-graduate course in electric railway engineering at the University of Wisconsin. He next spent a year on the staff of the Philadelphia Traction Company in connection with the electrification of the company's horse car lines, after which he went to Boston to become engineer in charge of underground conduit construction for the Boston Elevated Railway. After three years of service he became superintendent of wires and conduits, an office which he held for eight years, and then became assistant to the vice-president and later chief of maintenance. Mr. Hile is a member of several national engineering organizations and has a host of friends in New England who are congratulating both him and the club upon his election.

Herbert A. Faulkner, secretary of the New England Street Railway Club for the last five years, resigned his post on Oct. 25. He plans to leave for California at an early date. Before Mr. Faulkner entered the electric railway field he was engaged in newspaper work and was well known for his writing in connection with traffic matters. He was formerly passenger agent of the Bay State Street Railway and was an intimate friend of the late Henry E. Reynolds, who was assistant general manager of that company at the time of his death.

Alfred Sweeney, assistant to the general manager of the Cumberland County Power & Light Company, Portland, Me., has been elected assistant general manager. Although



ALFRED SWEENEY

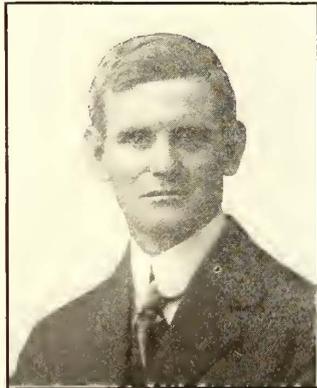
this is only a slight change in title, Mr. Sweeney's authority is considerably increased. Mr. Sweeney was graduated from Pratt Institute, Brooklyn, N. Y., in 1904. He entered the employ of the Lambertville Heat, Light & Power Company, Lambertville, N. J., as electrician, and was sent from there to Florence, S. C., to hold a similar position with the Florence Electric Light Company, which was under the same control. Later he went to Norfolk, Va., to work in the track and power departments of the Norfolk & Portsmouth Traction Company and in 1908 he entered the employ of the Lewiston, Augusta & Waterville Street Railway at Lewiston, Me. The following year he was made superintendent of track, and in 1911 assistant to the general manager. In 1912 the Lewiston, Augusta & Waterville Street Railway was purchased by the Cumberland County Power & Light Company of Portland, Me., and both companies, together with the Portland Railroad, came under common control under one management. Mr. Sweeney continued until the present time in the position of assistant to the general manager of the combined companies, which afterward included the York County Power Company and the Westbrook Electric Company.

Construction News

A. G. Snell has been appointed division superintendent of the Union Traction Company of Indiana with headquarters at Muncie. His jurisdiction extends over the Muncie city lines and the Muncie and Portland, the Muncie and Union City, the Muncie and Hartford City and the Muncie and Newcastle interurban divisions. He succeeds Clarence S. Keever, who becomes general superintendent.

L. C. Bewsey has accepted a position in the mechanical department of the Manila Electric Railroad & Light Corporation, Manila, P. I., which is operated by the J. G. White Management Corporation, New York, N. Y. Mr. Bewsey has been connected with the mechanical department of the International Railway at Niagara Falls, N. Y., since June 4, 1917. He was superintendent of the Union Traction Company of Indiana at Indianapolis from February, 1910, to December, 1914, when he resigned to accept the position of superintendent of the Buffalo, Lockport & Rochester Railway, Rochester, N. Y. He was then in charge of the transportation, traffic, freight, claim and substation departments and was for some time in charge of the mechanical department. Mr. and Mrs. Bewsey will sail from San Francisco in order to reach Manila shortly before Dec. 10.

Matthew W. Kirkwood, who, as noted in these columns recently, has been appointed general manager of the Galt, Preston & Hespeler Street Railway and the Lake Erie & Northern Railway, Galt, Ont., began his electrical experience in the installation of the arc lighting system at Georgetown, Ont., many years ago. Later, in about the year 1890, he was connected with the operation of the power plant, located at Glen Williams, which supplied this system. In 1894 Mr. Kirkwood was employed in the construction of the power station at Preston of the Galt, Preston & Hespeler Street Railway, which began operation in the fall of the same year. He was retained in the maintenance of way department and the following year assisted in the building of the line from Preston to Hespeler. Later, he was placed in charge of equipment, track and line and supervised the building and equipping of the line to Kitchener and Waterloo in 1902. Five years later he was appointed superintendent of the road, the position he has retained until his recent promotion to succeed the late Martin N. Todd. Mr. Kirkwood had charge also of the electrifying and equipping of the Lake Erie & Northern Railway in 1915, and was made superintendent of that road when it began operation in February of the following year.



M. W. KIRKWOOD

Obituary

Robert S. Ives, who for a number of years was superintendent of the Chicago & Milwaukee Electric Railroad, previous to the time it went into receivership, died on Oct. 21 at the age of forty-eight years. His remains were buried at Racine, Wis., on Oct. 23. Mr. Ives began his work in the electric railway field with the Tri-City Railway in Davenport, Iowa, and was later superintendent of the Chicago & North Shore Street Railway, which subsequently became a part of the Chicago Surface Lines.

Oliver H. Hughes, chairman of the Ohio Public Utilities Commission, died in a hospital in Columbus on Oct. 29. He had been ill for several days. Judge Hughes was a valued member of the commission and was popular with utility companies because of his ability and sense of fairness and justice. He served about six months as adjutant general as an appointee of Governor J. M. Pattison and was appointed to membership on the Ohio Railroad Commission in 1905. He continued as a member of its successor, the Utilities Commission, until 1915, when he resigned. He was reappointed last January.

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

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

RECENT INCORPORATIONS

*Selma (Ala.) Traction Company.—Incorporated with a capital stock of \$10,000. Incorporators: Hugh Mallory and others.

Kansas City, Lees Summit, Lone Jack & Eastern Railway, Kansas City, Mo.—Articles of incorporation have been adopted by the Kansas City, Lees Summit, Lone Jack & Eastern Railway to construct an electric railway between Kansas City, Lees Summit and Lone Jack. Capital stock, \$1,000,000, divided into 10,000 shares of \$100 each. Among the directors are W. T. Thomas, Lone Jack; E. H. Graves, Lees Summit; C. W. Chandler, Kansas City, and C. H. Witthar, Leeds. [Sept. 15, '17.]

FRANCHISES

St. Louis, Mo.—The Municipal Free Bridge Commission has approved a draft of an ordinance for an interurban loop from the highway deck of the municipal bridge to the business section of the city. The proposed loop will extend north on Seventh Street to Walnut, east on Walnut to Sixth, north on Sixth to Chestnut, west on Chestnut to Seventh and south to the bridge. It is estimated that the cost of the improvement, including the removal of car tracks, will be about \$150,000. The St. Louis & East St. Louis Interurban Railway and the St. Louis & Illinois Railway have applied for permission to use the bridge.

Toronto, Ont.—The Ontario Railway Board has extended indefinitely the time in which the Toronto Railway may construct its proposed extension on Pape Avenue, the company not having been able to secure the rails.

Dover, Pa.—Highway Commissioner O'Neil has been advised by Deputy Attorney General Keller that he may grant a permit to the Dover-Rossville Transit Company, which proposes to operate a trackless trolley between Dover and Rossville, to erect poles on State highways in York County and direct the manner and method of construction or impose such reasonable conditions as he may deem necessary in the electric power line and wires.

Dallas, Tex.—The Commissioners' Court has approved an amendment to the franchise recently granted to the Dallas Southwestern Traction Company for a right-of-way over Dallas County roads providing for a slight change of route in the company's proposed lines. [Oct. 22, '17.]

Norfolk, Va.—The Norfolk Southern Railroad has received a franchise from the City Council to construct a line on Cove Street, thus enabling the company to use Cove Street instead of Monticello Avenue for its cars to Virginia Beach and Cape Henry.

TRACK AND ROADWAY

Little Rock Railway & Electric Company, Little Rock, Ark.—Work will soon be begun by the Little Rock Railway & Electric Company double-tracking its Forest Park line through Pulaski Heights to Mount St. Mary Convent.

Los Angeles (Cal.) Railway.—In order that improved service may be provided, the Board of Public Utilities has ordered the Los Angeles Railway to extend its South Park Avenue line from South Park and Slauson Avenues to Sixty-first Street and Moneta Avenue.

Municipal Railways, San Francisco, Cal.—In order to operate the "D" line cars to the Presidio, the Board of Works has asked the Board of Supervisors to set aside \$35,000 to construct tracks in Greenwich Street from Scott to Baker Street.

Indianapolis Traction & Terminal Company, Indianapolis, Ind.—The Board of Public Works has ordered the Indianapolis Traction & Terminal Company to double-track its West Michigan Street line from Holmes Avenue to Tibbs

Avenue, and to repair the Alabama Street tracks north of Fort Wayne Avenue.

Wichita-Walnut Valley Interurban Railway, Wichita, Kan.—Application has been made by the Wichita-Walnut Valley Interurban Railway to the Public Utilities Commission of Kansas for permission to sell \$2,000,000 of stock. Funds from the stock sale are to be used in the construction of a line from Wichita to Eldorado and Augusta through the Butler County oil fields. Charles Payne, secretary. [Sept. 22, '17.]

Washington, Baltimore & Annapolis Electric Railroad, Baltimore, Md.—An addition of eight levers will be made to the electric interlocking plant of the Washington, Baltimore & Annapolis Electric Railroad located at Naval Junction, Annapolis. This installation is required by the additional traffic made by the United States government cantonment there. The Railway Signal Company, Rochester, will furnish this addition.

Boston (Mass.) Elevated Railway.—Work has been begun on the construction of a new trolley line to the new South Boston Fish Pier. The line will connect with the Boston Elevated Railway at the junction of Summer Street Extension and the viaduct leading to the Commonwealth Pier, and will extend from there to the South Boston Fish Pier. The line will be built by the State and will be leased to the Boston Elevated Railway for operation. It is expected that the line will be ready for operation in ninety days. The cost is estimated at about \$30,000.

Omaha & Council Bluffs Street Railway, Omaha, Neb.—This company is considering the construction of an extension from Albright Street west on Harrison Street to Fortieth Street, or south from Thirty-sixth and Q Streets to Harrison Street.

Public Service Railway, Newark, N. J.—The Hamilton Township Committee has adopted an ordinance requesting the Riverside Traction Company and the Public Service Railway to relocate their many poles on Liberty Street.

International Railway, Buffalo, N. Y.—The Ontario Railway Board of the Province of Ontario, Canada, which has recently directed to investigate the Canadian division of the International Railway, has found the roadbed and rails to be in good condition. The line extends from Chippewa to Niagara Falls, Ont., and from that point along the upper bank of the Niagara River Gorge to Queenstown, Ont. This latter line forms a part of the Great Gorge Route belt line. Stone ballast has been recommended along the entire line and continued renewing of old ties is also advocated. In respect to weeds between the tracks, the report says that weeds are a considerable source of trouble. The company is now using a machine for destroying them.

New York (N. Y.) Railways.—The Public Service Commission for the First District of New York has closed the investigation recently instituted by it, upon complaint of Mayor Mitchel, as to whether the operation of the street surface railroad tracks on Central Park West constitute a menace to life and property. Counsel for the New York Railways Company, which operates the tracks in question, and counsel for the City of New York, were given until Nov. 5 to submit briefs. If the commission determines that the operation of the railroad is a menace to life and property the Board of Estimate and Apportionment can compel the relocation of the tracks to minimize the danger, and power is given to the commission to apportion the cost of the work in the event that a difference of opinion arises between the railroad company and the city.

Black River Traction Company, Watertown, N. Y.—While a definite plan of extension has not yet been adopted, the Black River Traction Company has under consideration several plans for extended service to meet the demands of the increasing population of Watertown.

Chillicothe Electric Railroad, Light & Power Company, Chillicothe, Ohio.—It is reported that the government will construct a double-track extension of the line of this company to Camp Sherman, with a loop at the camp.

Cleveland (Ohio) Railway.—The City Council of Cleveland has authorized the Cleveland Railway to spend more than \$40,000 for track repair on Clifton Boulevard, N. W., from Lake Avenue, N. W., to West 117th Street.

Columbus Railway, Power & Light Company, Columbus, Ohio.—New tracks will be laid by the Columbus Railway, Power & Light Company on Mount Vernon Avenue, east of Taylor Avenue, in front of property owned by the Board of Education on that corner. It is probable that this will eventually be the route used by the company to extend its lines to Bexley, connecting with the Main and Neil line.

Mahoning & Shenango Railway & Light Company, Youngstown, Ohio.—Plans are being considered by the Mahoning & Shenango Railway & Light Company for the construction of a temporary bridge to replace the old Cedar Street span of the East End bridge, which has been ordered out of use for traffic purposes by the City Council. The proposed plan calls for a temporary bridge which can be used by vehicular and street car traffic and which will relieve traffic conditions in the Poland Avenue district.

***Sneedville, Tenn.**—A preliminary survey has been made for an electric railway from Sneedville to Morristown. Power would be supplied from hydro-electric plants which are being completed on Richardson's Creek and on Clinch River. George L. Berry of the Pressmen's Home is interested.

Northern Texas Traction Company, Fort Worth, Tex.—Work has been begun by the Northern Texas Traction Company on a loop extending east on Weatherford Street to a connection with the tracks on Belknap Street opposite the court house. This loop will touch the terminus to be established by the company on Belknap Street where all interurban and local cars not in use will be stored. This is expected to relieve the congestion that has existed on Belknap Street.

SHOPS AND BUILDINGS

Fort Dodge, Des Moines & Southern Railroad, Boone, Ia.—The Zitterell Construction Company, Chicago, has received a contract for the construction of a new carhouse adjoining the present one at Fort Dodge. The new building will have a capacity for five cars and an engine. Emergency repair shops will be established in the new carhouse.

Kansas City, Mo.—The City Council of Kansas City has passed for the third time an ordinance locating the proposed union station for the use of interurban railways at Tenth and McGee Streets. Mayor Edwards has vetoed two former ordinances locating the station at Tenth and McGee Streets.

International Railway, Buffalo, N. Y.—Application has been made to the City Council by the International Railway for authority to enlarge the safety island at Shelton Square and build a shelter over it at an estimated cost of \$8,000. The enlarged safety island would permit the loading of three cars at one time at this congested transfer point. The shelter will be built of steel and will have a tile roof.

Northern Ohio Traction & Light Company, Akron, Ohio.—Contracts will be awarded by the Northern Ohio Traction & Light Company for the construction of a train shed and underground subway on North Main Street.

POWER HOUSES AND SUBSTATIONS

International Railway, Buffalo, N. Y.—Large additions are being built to the power generating equipment of the International Railway. Substations are being built at North Division and Oak Streets and in Military Road near the Hertel Avenue carhouse. The new 10,000-kw. equipment at the old Niagara Street power house will soon be ready.

Rutland Railway, Light & Power Company, Rutland, Vt.—A new transmission line will be erected by the Rutland Railway, Light & Power Company from Castleton Corners to Hampton, N. Y. The company has purchased a new 335-hp. motor from the F. R. Patch Manufacturing Company, Rutland.

Puget Sound Traction, Light & Power Company, Seattle, Wash.—Plans have been completed by the Puget Sound Traction, Light & Power Company for the substructure for the coal pulverizing plant to be erected at its Western Avenue power station, at a cost of about \$80,000.

Wisconsin Gas & Electric Company, Kenosha, Wis.—This company will extend its power and generating and transmission system at Racine and throughout the southern part of Wisconsin.

Manufactures and Markets

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

Market in Middle West Largely for Maintenance and Repairs

Equipment for Reducing Labor or Producing Greater Economy on Old Cars Moving Fairly Well—
 C., M. & St. P. Orders New Equipment, but Car Buying Is About Over for the Year

The general market conditions prevailing in the Middle West states are not dissimilar to those in other sections of the country. The railways have been prevented by bond market conditions from putting out new issues, and hence the making of any improvements which call for significant amounts of new money have been curtailed. The effect of this has been felt in the markets for high-tension insulators, poles and ties, electrical equipment, overhead materials, rails and track specialties, etc., but in many instances this slack is rather welcomed by the manufacturers, particularly those manufacturing electrical materials, as an opportunity is thus afforded to catch up somewhat with orders already placed. The purchases which are being made, and these are frequently in sizable orders, may be classified very largely as materials and supplies for replacements and maintenance work. In many instances second-hand cars placed in operation for extra service to cantonments, etc., have been equipped with old-type motors recovered almost from the scrap heap. In spite of their recognized weaknesses and high-maintenance cost and energy consumption these old motors have been utilized instead of purchasing new ones.

There is practically no buying of new cars in this territory, and it is generally felt that the new car program for the year, except for a few scattered orders for light-weight safety cars, has been completed. There is good likelihood that the order for thirty cars for the Chicago, North Shore & Milwaukee Railroad, on which bids were recently closed, will not be placed this year, partly on account of the very high costs and partly because of the uncertainties of future traffic to be derived from the Great Lakes Naval Training Station at Fort Sheridan, located on its lines. The latter will not be used again as an officers' training camp, and whether or not it will be otherwise occupied has not been made known by the war department. Also, the possibilities of an early peace put some doubt on the stability of traffic from the naval training station, absence of which would, of course, mitigate against the need for additional equipment now. One order for six large, powerful, interurban cars for the new electrification work at Salt Lake City was let last week. This had been anticipated for some time.

There is some activity in connection with steam railway electrification work, as the high coal costs and extreme demands on the hauling capacities of the steam locomotives directs interest to the electric locomotive as a means of increasing the carrying capacity. The Chicago, Milwaukee & St. Paul this week placed orders for equipment for a further extension of its electrified divisions, including fifteen passenger locomotives of much greater capacity than those at present in use and two switching locomotives. For further details see page 819 of this week's issue of the ELECTRIC RAILWAY JOURNAL.

In contrast to new cars and equipment, devices which how a saving in operating expenses through labor or material or energy saving, are moving fairly satisfactorily. For instance, roller, center and side bearings have been in fair demand because of the savings in flange wear and consequent reduction of labor through less frequent turnings or wheel changes. The large amount of labor saved through the use of slack adjusters and the very high price of turn-

buckles are both acting to make the demand for automatic adjusters unusually good, with a resulting rather long delivery period now prevailing. Similarly, other labor-saving devices are moving satisfactorily. The delivery on most of these devices is fairly prompt.

Delivery on high-tension insulators is now variously reported from sixty days to eight months, and about the same on pole-line hardware, due especially to government requisitions of large amounts of these materials for cantonments, etc. This long delivery on these items is probably somewhat responsible for some of the off condition in the pole market, although part of the slump here is normal for this time of the year. While the price of copper has been fixed at 23½ cents, there is none to be had at this price. In addition to the large requirements of the government, the copper mills are under contract for all they can supply for a considerable period ahead at much higher prices. What the situation will be when these contracts have been completed it is difficult to say, but the government price for copper means nothing in the market at the present time. Some purchasers have expected prices commensurate with 23½-cent copper, but in so doing have overlooked the fact that the manufacturers have contracted their copper requirements for many months ahead in order to insure a continuous supply of materials to their customers, and of course any arbitrary price fixing cannot immediately have any influence on costs of manufacture and hence on selling prices.

A National Committee to Pass on New Devices

Too Little Investigation by Department Heads, Thereby Causing Stock Accumulation, Suggests Move for Standardization of New Equipment

BY W. H. SMAW
 Purchasing Agent Georgia Railway & Power Company,
 Atlanta, Ga.

It occurs to the writer that, no matter how much is preached or said in the interest of standardization, the desired effect will not be attained until the railway and lighting companies come closer together and confer with one another more frequently as to the advisability of adopting new ideas.

Every salesman that comes along with something new is generally successful in interesting some one in the organization with his proposition. It may be the head of the department, or one of the linemen, or the man in the shop, or the man in the central station. A requisition is then made up and approved by the head of the department, in many cases without the slightest investigation as to the merits of the article to be purchased, and in most instances it is one man's continuous fight to keep down such abuse.

The buyer sees the accumulation in his stockroom of material bought and never used and, the writer believes, watches more closely than anyone else, except the general manager, the mercury in the thermometer of expense in its steady climb. But, without the co-operation of the heads of all branches of his company, he is unable to check such extravagance.

From the manufacturers' standpoint, it is to their interest to bring out new devices and new materials. But the writer is of the opinion that if everything used in our industry had to be approved and accepted by a committee of the American Electric Railway Engineering Association before any member company would consider its adoption, and the law laid down in each company that nothing could be bought unless it were approved, this would be one step at least toward actual standardization.

Supply Men Must Give Child Labor Guarantees on Goods

New Federal Act Requires Person Putting Goods in Interstate Commerce to Guarantee Them to Be Manufactured in Accordance with Law

By the provisions of the federal child labor act, which became effective Sept. 1 last, all supply men or dealers and manufacturers of goods parts of which, whether all or some, are purchased from other manufacturers must, before placing goods in interstate commerce, obtain from the manufacturers of such goods or parts signed guarantees that such goods or parts were produced or manufactured in an establishment in which within 30 days prior to the removal of such goods therefrom no children under the age of fourteen were employed or permitted to work, nor children between the ages of fourteen and sixteen were employed or permitted to work more than eight hours in any day or more than six days in any week, or after the hour of 7 p. m. or before 6 a. m.

Rules and regulations heretofore issued specify only the guarantee to be supplied by the manufacturer. Now the dealer to engage in interstate commerce must give a guarantee. Forms of guarantees, in the opinion of the Children's Bureau, Department of Labor, Washington, D. C., sufficient to protect the supply men, may be had by applying to the department. A commission agent is considered in this connection as a dealer and therefore must place his guarantee as a dealer on all goods which he shall hereafter place in interstate commerce.

New Incandescent Lamp Contracts Are in Force

Provisions Against Price Increase Contingency Are Made by Stipulating the Dates on Which Advance Can Be Made

On Thursday of this week the new contracts for the purchase of Mazda incandescent lamps went into effect. For the first time provisions are made against the contingency of prices having to be advanced. Formerly it was taken as a matter of course that any change in lamp prices would be downward. Manufacturing conditions, however, have changed to such an extent in the last three years that, except for a downward revision of the 50-watt size, when the demand had reached a predetermined volume, manufacturers have been able only with great difficulty to keep prices from advancing. Glass, chemicals and labor have been a constant source of worry. Production economies have been made and have enabled the manufacturers to date to sell at the same prices, but at smaller profits.

Rumors are now strong in the trade that higher prices on lamps can be expected with the new year. At any rate, provisions are made so that an increase can take place on Jan. 1, 1918, if conditions warrant it.

According to the contract for purchases advances will be effective only as of Jan. 1, April 1, July 1 or Oct. 1. It is further agreed that whatever changes are made the net price to the purchaser for any lamp purchased under the contract shall not exceed present schedules by more than 10 per cent.

All lamps billed after the date on which increases become effective will be billed at the higher rate, except that orders for immediate delivery which do not exceed the normal requirements of the purchaser for one month will be filled on the basis of prices prevailing on the date of acceptance of the order, even though delivery be delayed beyond the date of advance in price.

This contract is only for purchasers—i.e., electric railways, central stations, isolated plants, etc.—not dealers.

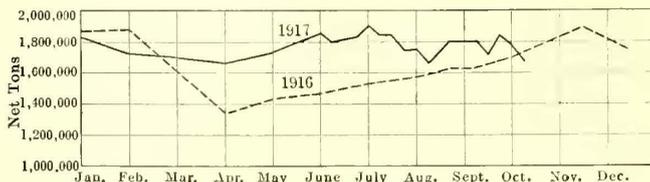
Railway Supply and Metal Prices

The weekly quotations on electric railway supplies which formerly were placed at the end of this page will hereafter be found at the end of the last page of this section.

Bituminous Coal Situation

Report by Government Shows Daily Production Now Less than a Year Ago

The United States Geological Survey has just issued the accompanying chart showing the estimated average total production per working day of bituminous coal in the United States, including coal coked. The data since June 16, 1917, are plotted by weeks. According to the report, the average daily production during October, 1917, is 76,000



AVERAGE TOTAL DAILY PRODUCTION PER WORKING DAY OF BITUMINOUS COAL

tons less than the daily production during October, 1916, and the daily average now is the lowest since the week of Aug. 18, when the mid-August strikes in Central Illinois were at their height.

The accompanying table shows the percentage of full-time output produced and lost for principal causes by all the mines reporting causes of lost time. As will be noted, the loss through car shortage has been larger than from any

PERCENTAGE OF FULL-TIME OUTPUT PRODUCED AND LOST FOR PRINCIPAL CAUSES BY ALL MINES REPORTING SEPT. 8 TO OCT. 13, 1917

Week Ended	Percentage Produced	Total Percentage Lost, All Causes	Lost on Account of					
			Car Shortage	Labor Shortage and Strikes	Mine Disability	No Market	All Other Causes	No Cause Given
Sept. 8..	79.8	20.2	6.5	7.8	5.1	0.3	0.4	0.2
Sept. 15..	*78.0	22.0	9.8	8.0	3.0	0.1	0.8	0.2
Sept. 22..	75.3	24.7	10.5	9.2	3.9	0.1	0.9	0.1
Sept. 29..	77.7	22.3	12.2	6.0	4.2	..	0.8	0.1
Oct. 6..	77.6	22.4	10.4	6.5	4.7	..	0.7	0.1
Oct. 13..	76.9	23.1	14.3	4.1	3.9	..	0.7	0.1

*Does not include Cumberland-Piedmont, Hazard, Ky., or Arkansas "anthracite" districts.

other cause since Sept. 22, and during the week ended Oct. 13 amounted to more than three times the loss due to labor shortage and strikes. The car shortage was especially marked in Indiana, Ohio, the Pittsburgh district, the Winding Gulf field of West Virginia and the Cumberland-Piedmont field in Maryland.

Manufacturers Very Busy Now

Facilities Installed for War Orders Will Be Useful for the Manufacture of Electric Railway Apparatus Later

Although the depressed condition of the electric railway industry of the country has affected adversely the orders which electric railway companies have been able to give for equipment, most of the manufacturers who have specialized in electric railway apparatus are more busy than at any other period in their history. Those whose facilities are suited to the manufacture of munitions or arms are manufacturing these supplies for the United States Government and for our allies. Others are busily engaged in the construction of other military equipment, such as aeroplane engines and parts, ammunition wagons, radio outfits, military searchlights, rails, locomotives and cars for military railways, etc. Some of these manufacturers had already devoted portions of their shops to the manufacture of military supplies before the outbreak of the war between the United States and Germany, but since the United States actively entered the war there has been an increase in every department and shop. Factory extensions have been built,

more workmen have been engaged, and the works exhibit an activity for which there has been no parallel, even in the period of 1907, when there was so much activity in electric railway construction.

The situation affects electric railway companies in two ways—one at present, one in the future. At present it means that there may be some delay in filling railway orders. Government orders necessarily have priority, but electric railway companies which do not receive their equipment as soon as they might otherwise expect may have the feeling of satisfaction that the delay is caused by work necessary for the national defense. In these circumstances the public served by the electric railway can well be told the cause of the delay, and this explanation should make them more patient.

The effect of this expansion of the manufacturing side of the electric railway industry should also enable the manufacturers promptly to supply peace equipment after the war is over. By that time, it is hoped, electric railway companies will have secured the right to charge an adequate fare and thus be in a position to rehabilitate and improve their properties. This will mean extensive orders for new equipment of all kinds, but with the enlarged facilities which the manufacturers have provided for war material they should be in a good position to supply the equipment needed for a revived electric railway industry.

ROLLING STOCK

Enid (Okla.) City Railway is reported building two new cars in its own shops.

Valdosta (Ga.) Street Railway has purchased two cars from the Waycross Street & Suburban Railway, Waycross, Ga.

Fort Worth (Tex.) Southern Traction Company has placed fourteen of the twenty new one-man cars in operation on its lines. The cars are light, and as they make fast time improved schedules will be put into effect. The cars, as noted in the *ELECTRIC RAILWAY JOURNAL* of July 7, were made by the American Car Company.

Chicago, Milwaukee & St. Paul Railway, Milwaukee, Wis., on Oct. 29 placed orders for the equipment for the Othello, Seattle and Tacoma division, 216.9 (route) miles; also for seventeen locomotives, to be used on either the first or second electrification, as detailed on page 819 of the present issue of the *ELECTRIC RAILWAY JOURNAL*. To hasten delivery on account of the high cost of fuel oil, the orders have been divided between the Westinghouse Electric & Manufacturing Company and the General Electric Company. Of the seven General Electric locomotives two are switching locomotives of the steeple-cab type; the others are of special design for the passenger service. The ten Westinghouse locomotives are for passenger purposes. Both types of the new passenger locomotives must not only provide for heating equipment, but must also be capable of operating at the highest speeds, irrespective of weather conditions.

TRADE NOTES

Hamilton & Hansell have removed their office from the Whitehall Building to the Park Row Building, 21 Park Row, New York City. The change was made on Oct. 31.

Youngstown Sheet & Tube Company, Youngstown, Ohio, has opened a branch in the Munsey Building, Washington, D. C. The office will be in charge of W. B. Blowers, district sales agent, assisted by H. E. Richardson, who has been transferred from the Philadelphia office.

Multi-Refillable Fuse Company announces that its office and salesrooms after Nov. 1 will be located at 803 West Madison street, Chicago. This location is in the central part of the west side business district and will give the company added facilities to take care of its growing business.

Edison Storage Battery Company, Orange, N. J., on Oct. 1, removed the New York City sales office, long located at 206 West Seventy-sixth Street, into larger quarters at 209 West Seventy-sixth Street, across the street from the old headquarters. At the new location additional facilities have been installed.

R. J. Mergan, who resigned from the Midvale Steel & Ordnance Company, Midvale, Pa., has been appointed supervisor of sales of the American Steel Export Company, New York, N. Y. Prior to his connection with the Midvale Company Mr. Morgan was for thirteen years with the Carnegie Steel Company, Pittsburgh, Pa.

National Pneumatic Company, New York and Chicago, has supplied for the new 100 Peter Witt cars of the International Railway, Buffalo, N. Y., its pneumatic door and step control, including the 2½ x 6GM engine for the center doors, and the 2½ x 4½GM engine for the front doors; also the National interlocking safety door control and National motorman's signal light system.

Goldschmidt Thermit Company, New York, N. Y., has opened a new office, repair shop and storeroom at 1427-1429 Western Avenue, Pittsburgh, Pa. H. D. Kelley, who has represented the company in the Pittsburgh district for a number of years, is the manager. It will also be the headquarters of H. G. Spilsbury, metallurgical engineer, and Edwin B. Bloom, who has represented the Thermit department for some time in Ohio and western Pennsylvania.

NEW ADVERTISING LITERATURE

Walter A. Zelnicker Supply Company, St. Louis, Mo.: Bulletin 226, just off the press, lists and describes a "few of the best" in its line.

Pennsylvania Railroad Company, Philadelphia, Pa.: "Loss and Damage Bulletin No. 7" is a call for co-operation to save waste. The company states that shippers over its system can aid in avoiding the waste and distribution of more than \$2,000,000 worth of freight every year. The purpose of the bulletin is to urge shippers to pack their goods properly.

Guaranty Trust Company, New York, N. Y.—Two books have been prepared by the company containing "Trading With the Enemy" act and "The War Tax Law," accompanied by illuminating chapter headings, suitable commentary, etc., for easy and comprehensive reference to these important subjects of federal legislation. Copies of each or both may be had, free of charge, by applying to the company, 140 Broadway.

NEW YORK METAL MARKET PRICES

	Oct. 24	Oct. 31
Prime Lake, cents per lb.	23½	23½
Electrolytic, cents per lb.	23½	23½
Copper wire base, cents per lb.	32	31
Lead, cents per lb.	6¼	5¾
Nickel, cents per lb.	52	50
Spelter, cents per lb.	8¼	8
Tin, Straits, cents per lb.	62½	66
Aluminum, 98 to 99 per cent, cents per lb.	37	34

OLD METAL PRICES—NEW YORK

	Oct. 24	Oct. 31
Heavy copper, cents per lb.	23½	23½
Light copper, cents per lb.	20½	20½
Red brass, cents per lb.	19	18
Yellow brass, cents per lb.	16¼	16
Lead, heavy, cents per lb.	5¾	7
Zinc, cents per lb.	5¾	6
Steel car axles, Chicago, per net ton	\$41.00	\$41.00
Old car wheels, Chicago, per gross ton	\$27.00	\$27.00
Steel rails (scrap), Chicago, per gross ton	\$33.00	\$35.00
Steel rails (relaying), Chicago, per gross ton	\$55.00	\$55.00
Machine shop turnings, Chicago, per net ton	\$15.50	\$15.50

RAILWAY MATERIALS

	Oct. 24	Oct. 31
Rubber-covered wire base, New York, cents per lb.	34-35	34-35
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.	\$5.50	\$5.50
Steel bars, Pittsburgh, per 100 lb.	\$5.00	\$5.00
Sheet iron, black (24 gage), Pittsburgh, per 100 lb.	\$9.55	\$7.55
Sheet iron, galvanized (24 gage), Pittsburgh, per 100 lb.	\$8.85	\$5.85
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.	\$2.65	\$2.65
Linseed oil (raw, 5 bbl. lots), New York, per gal.	\$1.17	\$1.17
Linseed oil (boiled, 5 bbl. lots), New York, per gal.	\$1.18	\$1.19
White lead (100 lb. keg), New York, cents per gal.	12	11
Turpentine (bbl. lots), New York, cents per gal.	51	54