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### The New Canaan Electrification

The New Canaan electrification of the New York, New Haven & Hartford Railroad described in this week's issue is a good example of the flexibility of the high-tension alternating-current trolley in making extensions at minimum cost. The installation is probably unique in being the first 500-volt d.c. railway to be converted to single-phase operation at 11,000 volts. The main reason for this change was the economy attainable by using power transmitted directly from the large generating station at Cos Cob, 11.27 miles distant. The service over the New Ca-

naan branch is comparatively light, and consequently the catenary construction is of the simplest type. As on the main line, the running wire is of steel, and precautions have been taken to protect the insulators from locomotive blast. The service thus far has proved most satisfactory, and there is every reason to believe that its general reliability will be as good as it was with the costlier direct-current distribution.

### Gasoline Motor Cars

Interest in gasoline motor cars for railways has revived, owing, possibly, to the demonstrated practicability of the gasoline motor in automobile service. Abroad, independent motor cars operated by gasoline, storage steam, live steam and storage batteries have always been used more extensively than in this country, and there is considerable literature on the subject in the transactions of the International Street & Interurban Railway Association. The work in this country has been carried on principally along two distinct lines, one to develop a rather heavy car suitable for high speeds and weighing anywhere from 45,000 lb. to 100,000 lb.; the other class of motor cars developed has been in the direction of a very light car. There seems to be a field for each of these cars, as well, probably, as for a car of medium weight. Moreover, this field should not interfere particularly with that of the electric motor car or that of the steam locomotive, although the boundaries of each would naturally overlap to some extent. We should say that one criterion for determining the desirability of gasoline or electric—perhaps the principal criterion—would be the headway to be used in the proposed service, and that the upper boundary between the electric car and the gasoline car would be somewhere between two hours and three hours. As compared with steam operation, the respective fields would seem to be more properly defined by the loads to be transported. Both heavy and light gasoline cars, but particularly the latter, also provide a means for gaging the traffic possibilities of a line before installing the more expensive and more permanent electric installation. They also seem well adapted to roads in use for a part of the 12 months only. The gasoline motor car has the tremendous advantage over the automobile of absence of tire trouble, but the problem of a flexible and variable speed drive is greater than in the automobile because of the greater weights involved. Nevertheless, the difficulty has not been found to be insurmountable, even by mechanical means. It is yet too early to determine how permanent an aid to transportation methods the gasoline motor car will be, but several companies have adopted them to a greater or less extent. The question of repairs and depreciation is yet to be determined, but this will be answered by time.

### Losses from Casualties

Casualties to electric railway property resulting from the serious ice jam at Niagara and from spring floods in various parts of the country recall the action of the Railroad Commission of Wisconsin in taking steps, during the last winter, to obtain information as to the cost of storm losses experienced by public utility corporations. The letter of inquiry on this subject which was sent out by the commission asked for data covering both the expenditures required for repairs of damaged property and the losses resulting from suspension of business during the necessary interval of incomplete operation. This subject is one of academic as well as practical importance. The law under which the Wisconsin commission exercises its jurisdiction over public utilities of the State directs that the commission shall "ascertain and determine what are the proper and adequate rates of depreciation of the several classes of property of each public utility." The destruction of property, resulting from casualties of this character, is one of the elements which should properly receive consideration in a study of the nature indicated, not only in Wisconsin, but also in all other localities where a determined effort is made to calculate the true cost of operation. The danger always exists that losses of this character may be appalling in amount; but even if they appear to involve small sums only it is not wise to ignore them as factors that increase the expense of operation of a public utility.

### Discharged Employees

The letter from J. T. Funk, general superintendent of the Louisville Railway Company, printed in our issue of April 24, and the two commendatory letters published this week, call attention to a serious evil. No railway company should put a man in the responsible position of conductor or motorman without careful investigation as regards his previous history. Otherwise, it will be very likely to enroll some men who have been discharged by previous employers for incompetency or dishonesty. This will not only afford the chance of serious loss to the company through accidents or fraud, but if the character of the men is known, service with the company will be distasteful to the better class of its older employees. Of course, any railway company which places a man in a position of responsibility has to accept a certain amount of risk; no one is infallible, but it is wise to take all the precautions which are reasonably possible. We do not mean that a man should be considered as forever incapacitated for holding a position on one road because he has been discharged from another. He may have been misjudged, or his offense may have been slight, and the experience thus obtained might render him capable of better service on the new road. But it is an axiom in business that an employer has the privilege of knowing all the previous history of a prospective employee, so far, at all events, as it relates to the kind of work which he is likely to perform in the future. This is particularly the case in the railway business, where not only property, but lives, are dependent upon the faithful execution of the trusts imposed.

We are of the opinion that the positions of both motorman and conductor demand physical and temperamental qualifications which are by no means universal. The proper

man for either position must be in full possession of his senses of sight and hearing. In addition, he should be neat in appearance, alert to perform his manifold duties, able to think clearly and be fully conversant with the rules. If he is a motorman, he should also have that "sixth sense" which intuitively directs one what to do in emergencies. If he is a conductor, he should possess the mathematical knowledge which enables one to make change quickly and the memory for faces which permits him to know those who have paid their fares and those who have not; he should be courteous on every occasion, and in all ways he should be able to comport himself creditably as a representative of the company. When once acquired, these duties become almost second nature. One superintendent of employment, with whom this subject was discussed, said that it was not difficult to detect ex-employees who had testified falsely that they never had had railroad experience, because in breaking them in their tendency is instinctively to do any one of several things directly in their line of duty.

If the qualifications just mentioned are accepted as essential, a careful investigation into a man's previous record follows as a matter of course. Such an investigation can be conducted by mail or by person. The former method is the easier, and sometimes the only way available, especially with persons who are far distant from the company's office. It is open, however, to the perpetration of fraud, and is never so satisfactory as a personal interview. A previous employer will often hesitate to put in writing his opinion of a man or the causes for his dismissal, but will often have no objection to explaining the facts verbally. In a personal interview, also, a good investigator can usually tell whether the man being questioned is sincere in his recommendation or is sympathetic for a friend or acquaintance out of a position. It is strange how many persons will falsify the facts to help a man get a job, when they know that his incompetence will in no way affect them. A rigorous investigation of this kind is expensive, but is economy if it prevents subsequent loss.

In the case of cities that are close together, personal ties can be cultivated between the superintendents of employment of the different roads, so as to bring to the attention of one another all flagrant cases of misconduct. This will reduce to a minimum the possibility of a man discharged from one company falsifying his record so as to enter the employ of another. Carrying this idea further, it might even be possible for the companies in one locality, or the national organization, as suggested by one writer, to perfect a clearing house of information regarding men who are discharged from time to time.

It might be claimed that a clearing house, such as suggested, would constitute a "boycott" or "black list," and as such be illegal in some States. We hardly believe this would be held, however, if the object was not to keep men from employment, but to detect those who might endeavor to secure employment under false pretenses. In any case, also, we do not believe that a statute could prevent any prospective employee from agreeing to permit his employer to verify the statements made in his application. This agreement could be made part of his application in any States where such a law was in force.

### Accidents to Pedestrians

Fully 20 per cent or 25 per cent of street railway accident cases arise out of collisions with pedestrians. In many of the claim and legal departments they are classified as "Knock Down" cases. Because of the very strong elements of contributory negligence ever present in such accidents, the number of these suits which are tried is large and a great deal of law on this subject is to be found in the books. Of the decisions rendered some half-dozen have recently been handed down in leading and widely separated jurisdictions and present some important general principles which will here be briefly considered.

The New York courts contribute half of these authorities. It is perhaps needless to say that the decisions of the Empire State tribunals are highly respected and usually followed throughout the United States. In New York State a pedestrian has the same right to use a street that a street railroad has, and while he is bound to use care, he may properly cross a track, though he knows a car is approaching, providing he has reason to suppose that the car will slow down and thus give him time for the crossing. This is the doctrine of one decision where a non-suit in a death case on the ground of contributory negligence was reversed and a new trial ordered. It is, of course, a well-known rule of law that the sufficiency of the evidence necessary to show freedom from contributory negligence is not so strict in death cases as in cases where the injured person is alive and a witness at the trial. In the case under discussion there was ample proof of the company's negligence in operating the car at an excessive speed while the motorman was applying the power on the rear instead of the front platform, the conductor being on the front platform operating the brake and giving the signals. This unusual condition was because the car was crippled, but there was no excuse, the court said, for not turning it around so that "the motorman and the operation of the power could have been on the front platform." The car did not slow down for the crossing as it should have done and as the deceased rightly assumed it would. Hence the court decided against the company.

In another case the following instruction by the trial judge was affirmed on appeal:

When one attempts to cross the tracks of a street car and has approached the track at such a distance from an approaching car that he has reasonable ground to suppose that he will be able to cross the track, it is the duty of the street-car driver to give him a reasonable opportunity to cross, and if for that purpose it is necessary for him to check the speed of the car or even stop the car entirely for a short space, it is his duty to do it, and the person crossing the track has the right, without being charged with contributory negligence, to assume that that duty will be performed.

Pedestrians are not required to look for an approaching car further than a reasonable distance, as people at crossings ordinarily do, before passing to the opposite side of the street. Such at least is the law of a Brooklyn case where an elderly lady was knocked down at night at a place not well lighted. When struck she had nearly crossed the track and was picked up on the far side after the accident. This physical fact, which ordinarily cannot be disputed, is always of great and often controlling importance. On the other hand, if the injured is struck just after he stepped over the first rail and thrown back, it is quite

apparent that he was not justified in his attempt to proceed. These last observations are prompted not by any particular decision, but by experience of attorneys in the defense of railway negligence actions.

There was a strong dissenting opinion in the Brooklyn case by Judge Hooker, who did not agree with his colleagues when they distinguished this case from another case decided by an even higher court in which it had been said that if the pedestrian looked she must have seen the car and that as she did not see it, it is proof that she did not look. The controlling view, however, was that the dulness of the faculties of the aged has to be considered, especially at times in unfrequented localities.

In Kansas we find a decision favorable to the railway company where the sole question was whether the plaintiff used ordinary care. In a drizzling rain he alighted from a car which had crossed the intersecting street (usually an important fact), saw a car approaching 175 ft. away on the parallel track and started to cross. The car he left had moved on and when he reached the first rail of the other track it was passing the approaching car 45 ft. away. He was struck just after he had passed over the first rail and was picked up between the two tracks. The witnesses substantially agreed that the car which collided with him was running 20 m.p.h. and went 150 ft. to 300 ft. before stopping. The pedestrian said he thought the car was approaching at a reasonable speed of 8 m.p.h., but could not tell then or at the trial how fast it was traveling. He was adjudged guilty of contributory negligence and we find this unusually clear and interesting exposition of the law:

The plaintiff had the right to begin his journey with the assumption that cars on the next track would be run at a reasonable rate of speed, and would be under ready control when approaching street crossings. But such an assumption cannot be relied upon as a guide to conduct or as an excuse for taking a risk after knowledge or fair warning to the contrary. Due care requires that a man shall look for approaching cars before crossing a railway track. \* \* \* If he sees a car coming, the duty arises to make some estimate of its speed and of the distance it has to come before he attempts to cross. Distances and speed are matters of the commonest daily observation. Men no less than the lower animals have been trained at the peril of survival to regard them ever since the species arose. A man may not be a good judge of either, but he must suffer the consequences if he makes a mistake which a reasonably prudent man would not have made.

We have referred above to what the pedestrian may rightfully assume. It will be interesting, on the other hand, to note what the motorman may assume. While the motorman may expect that a pedestrian will turn out of the way, he cannot rest on such assumption until he reaches a point where it will be impossible for him to control the car or to give warning in time to prevent injury. Nor may such assumption be indulged beyond the time when the pedestrian's danger is seen to be imminent. Such is the law gathered from two decisions against the company operating surface cars in Birmingham, Ala. The court said:

The rationale of this doctrine is that "the original negligence of the injured person, whereby he is placed in a perilous position, does not in a legal sense contribute to the result. \* \* \* The law ascribes the disaster solely to a want of due care on the part of the person controlling the agency of the injury, but for whose negligence no hurt would have been done, notwithstanding the injured party's original fault."

### CONVERSION OF NEW CANAAN BRANCH FROM 500-VOLT D.C. TO 11,000-VOLT A.C. OPERATION

The New Canaan branch of the New York, New Haven & Hartford Railroad extends from Stamford on the main line in a general northeasterly direction to New Canaan,

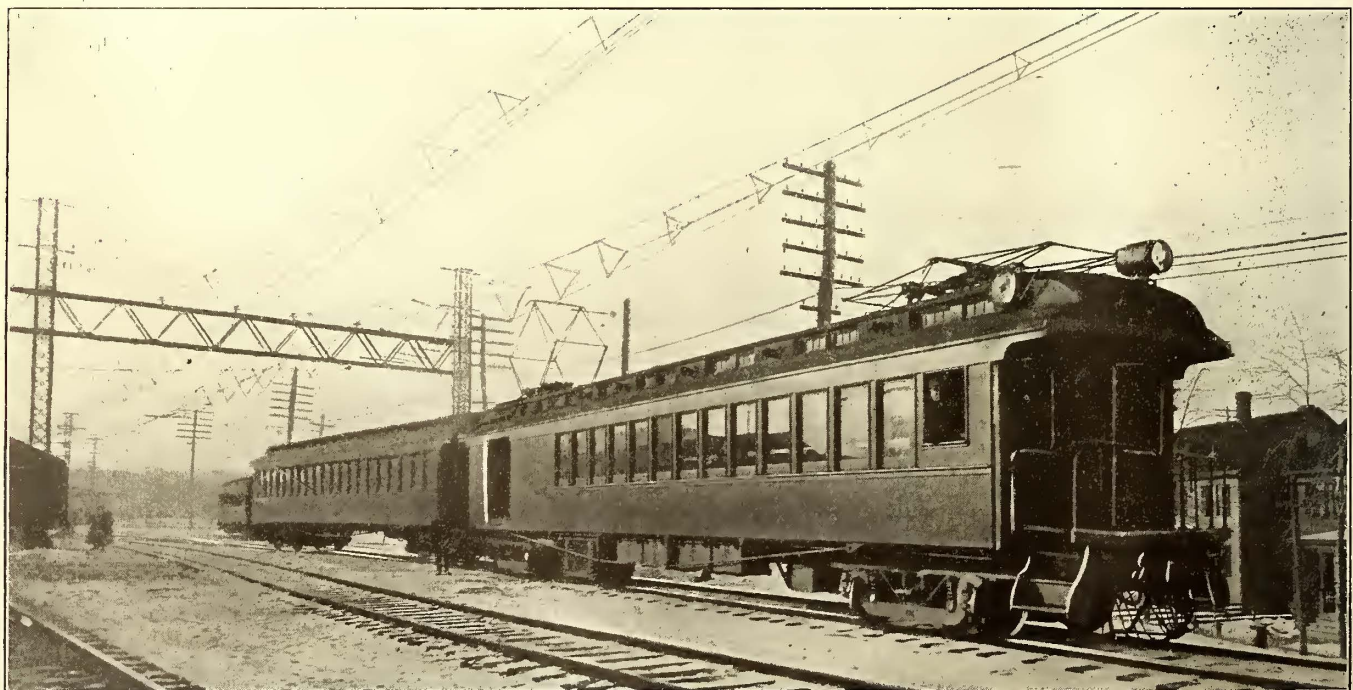
by steam, but was equipped with the 500-volt d.c. overhead trolley about 10 years ago for the passenger service only. About a year ago it was again converted, this time to the 11,000 single-phase system. The New Canaan line was particularly suitable for such a change, the expense for overhead construction being comparatively small, as on



New Canaan Electrification—View at Junction with the Main Line, Illustrating the Difference in Overhead Construction Between Heavy and Light A.C. Operation

and has a total route length of 7.66 miles. The intermediate stations after leaving Stamford are: Glenbrook, 2 miles; Springdale, 3.22 miles; Talmadge Hill, 5.47 miles.

nearly 25 per cent of the route the wires were carried from the main line overhead bridges, which had been extended over the branch tracks with this end in view. There is, of



New Canaan Electrification—Branch Line Motor and Trail Car at Stamford, on the Main Line

Between Stamford and Glenbrook the branch tracks adjoin those of the main line, but the branch line cars run to and leave from the former station, because no through trains stop at Glenbrook. The branch was originally operated

course, an appreciable saving in cost of power from supplying the line from the main Cos Cob station, only 11.27 miles from New Canaan, instead of by independent power.

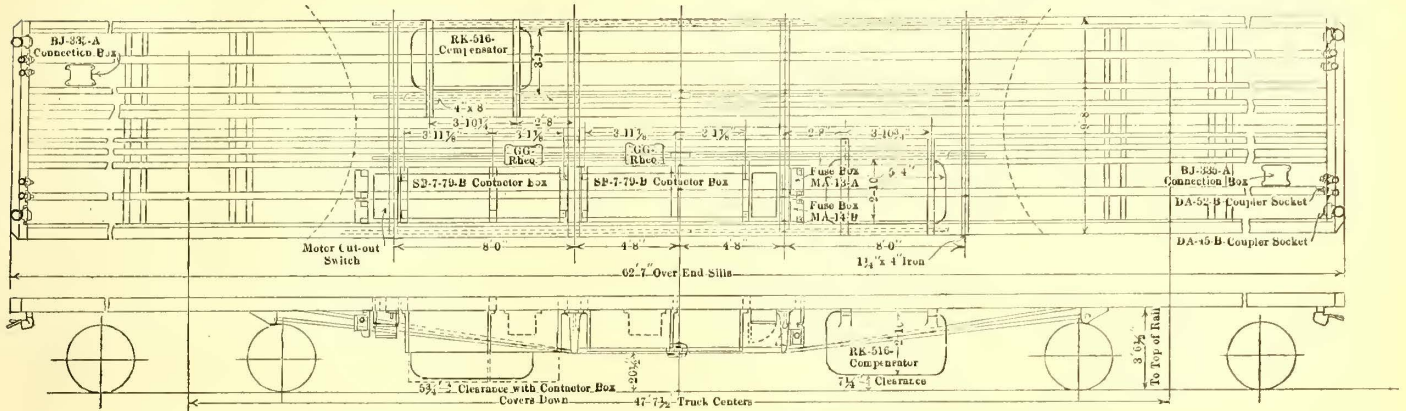
Direct-current operation of the New Canaan branch was

discontinued about Nov. 1, 1907, and the results obtained since the installation of the 11,000-volt, 25-cycle, single-phase catenary clearly demonstrate the adaptability of this system for branch-line electrification. The following is a description of the principal features of the overhead line and of the rolling stock:

OVERHEAD CONSTRUCTION

The overhead line between Glenbrook junction and New Canaan is carried on wooden poles which are 35 ft. in

steady strains are used on every other pole at tangents in addition to their customary application on curves. The clearance between the trolley and track is 22 ft., and is maintained throughout the line, as there are no tunnels or bridges of any kind. The total weight of the catenary construction carried between the I-beam brackets on the tangent bents or spans of 150 ft. is 280 lb., or slightly under 2 lb. per foot. The line is anchored at 11 places between Glenbrook and New Canaan. As the pantograph col-

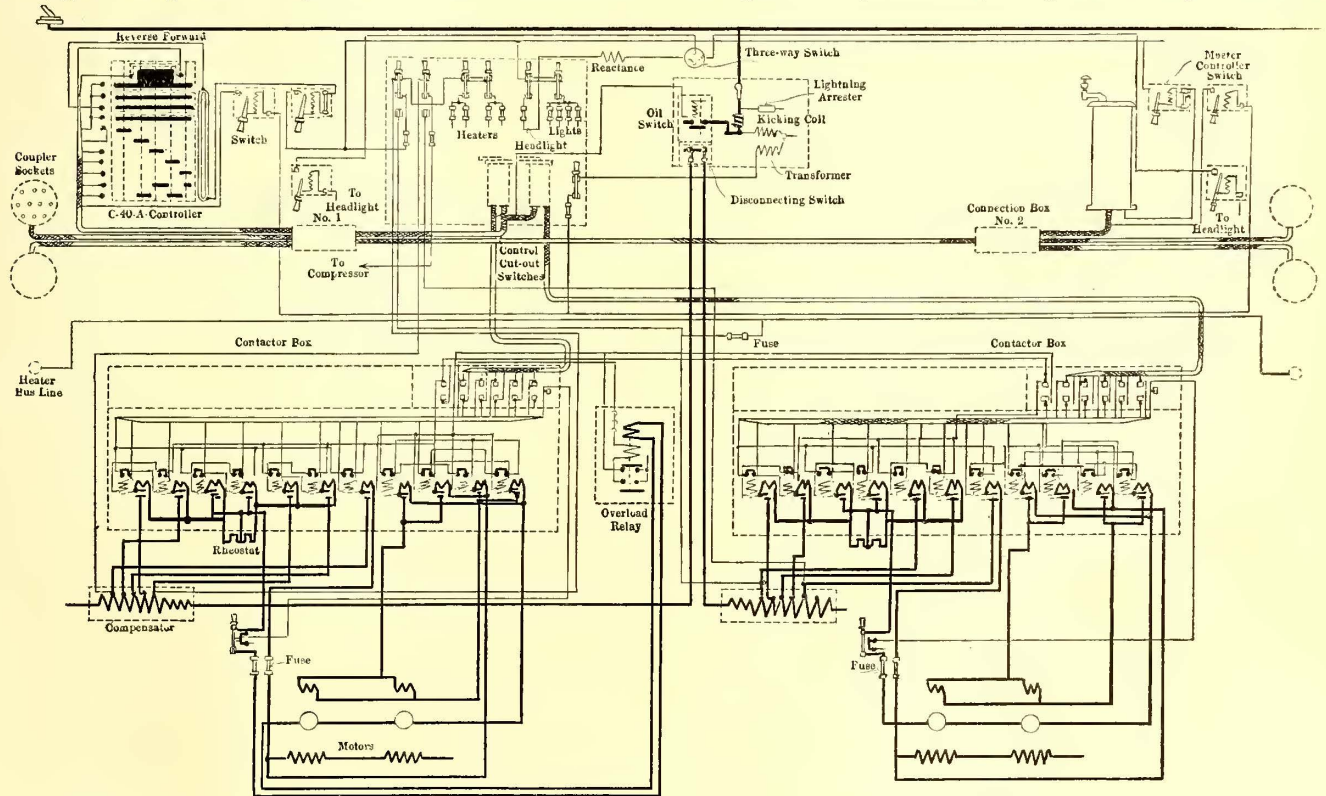


New Canaan Electrification—Car Clearances and Layout of Electrical Apparatus

height, set 10 ft. from the center line of the track, and are spaced 150 ft. on tangents. At curves the poles are guyed with plate anchors and 3/8-in. steel strand wire. The bracket is a simple 3-in. steel I-beam turned up at the end and braced by a 1/2-in. wrought-iron tension rod bolted through the pole. The messenger wire is of 7/16-in. bare steel strand, and is carried on glazed porcelain double petticoat insulators. These insulators are 7 1/2 in. in diameter, 5 1/2 in. high, and are protected from the blasts of the

lectors on the cars take current at 11,000 volts it was not necessary to install any transformer stations or special transmission wires at any point on this division.

Section insulators are located at Talmadge Hill, Springdale and the main line junction at Glenbrook. The section insulator at the main line junction at Glenbrook is shown in the illustrations on pages 900 and 902; in addition there are other breakers at Talmadge Hill and Springdale. The sidings normally are dead, being cut in only when neces-



New Canaan Electrification—Wiring Diagram of Electrical Apparatus

steam freight locomotives operating on this division by an under piece of sheet iron clamped to the bracket. An auxiliary, No. 0000, steel working conductor is clamped to the No. 0000 copper feeder wire, as on the main line. Hickory

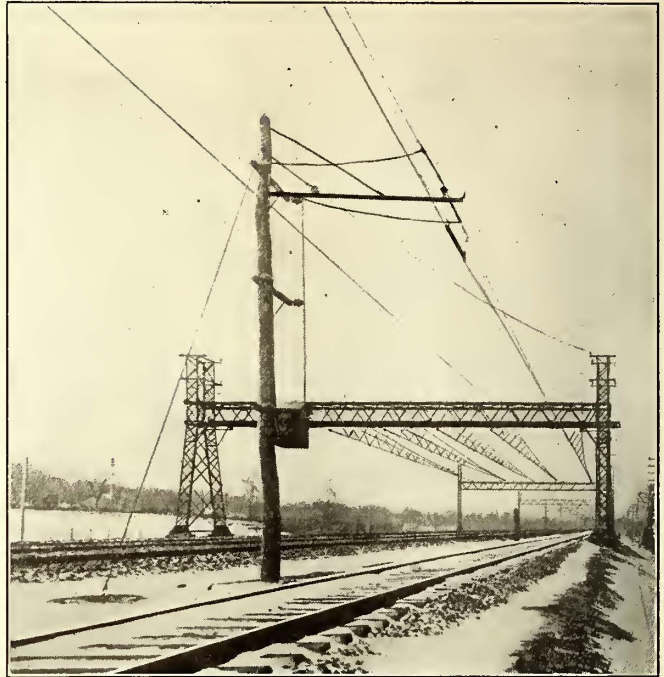
It should be stated that as the trip between New Canaan and Stamford is made in 17 to 20 minutes, only one train is required ordinarily to carry out the schedule. The overhead line is grounded by No. 0000 iron wire

which is swung from pole to pole and grounded to the rails every five poles. This ground wire constitutes the

of two trains, each composed of one motor car and one trailer. The trailers are of the standard New Haven



New Canaan Electrification—Construction on Curves Showing Steady Strains



New Canaan Electrification—Section Break at Branch-Off From the Main Line

sole lightning protection. The rails have No. 0000 bonds. This line was designed and installed by the Electrical Engineering Department of the New York, New Haven & Hartford Railroad.

steam coach design for straight passenger service, seat 72 passengers and weigh 35 tons.

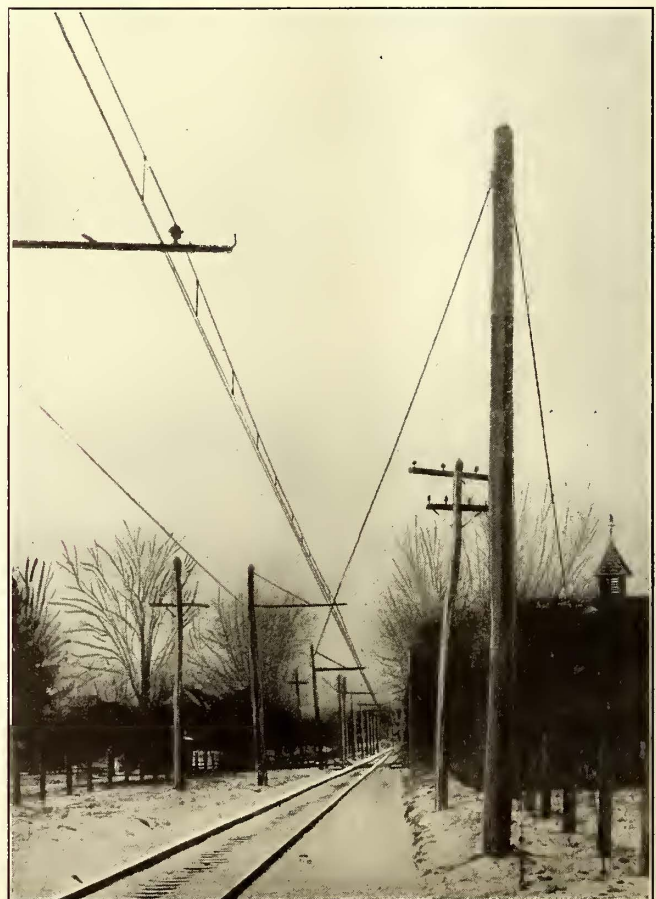
The motor cars are of the combination passenger and baggage type, 63 ft. over all and seat 52 passengers. Each

THE ROLLING STOCK AND ELECTRICAL CIRCUITS

The rolling stock of the New Canaan division consists



New Canaan Electrification—Overhead Construction with Deflectors at a Siding



New Canaan Electrification—Suspension Copper Conductor and Steel Contact Wire







Forming a Westinghouse No. 56 field coil; two men, including one helper.....	1.20
Making up resistance splash pans on a car, to include changing over old splash pans and making up two new ones; one helper.....	.22
Making up ground wires, to include cutting of wires and sweating on terminals, two wires to a set; one helper.....	.05
Making up resistance jumpers; one helper.....	.15
Tin wire shields; one helper.....	.045
Stripping canopy switch, installing circuit-breakers, splicing leads for same and tapping off main trolley to trolley stand (closed car).....	.95
Making all resistance splices and changing over heat, light and trolleys; also sweating on brass sleeves on main trolley where it connects to trolley stands; one wireman.....	.78

NON-ELECTRICAL WORK ON OPEN IO-BENCH CARS

The following prices are those prevailing for non-electrical work on open cars for the Union Railway Company:

Getting out material for overhead trolley guards, sign cards, grab handles, step brackets; \$.92 for blacksmith and \$.67 for helper—per set..... \$1.93

Drilling holes in brake hangers, per set..... .02

Renumbering, eight sets of numerals (sides, dash and bonnet)..... .80

Painting kicking boards on under sides..... .50

Partial painting of seats and touching up inside and outside cars..... .70

Making two brake handles per car; one blacksmith, \$.17, and helper, \$.12..... .29

Drilling all holes in irons for overhead trolley apparatus for hood shields, per set..... .25

IRON BRACKETS AND HANGERS MADE IN SHOP

Under this head, the original table gives the size, number, type and cost of the resistance hangers, splash pan hangers and brackets as made in the shop. The total cost of these items was \$586.50 for 150 cars and \$3.98 per single car.

LOCKNUTS

The original table shows that there were used the following numbers and sizes of lock nuts; 900 1/2-in.; 600 3/4-in.; 900 1 in.; 600 1 1/4 in.; 300 1 1/2-in.; and 2,400 2-in.. The cost for each car was \$0.748 and for 150 cars, \$112.20.

CONDUIT

SIZE	Amount Used Per Car	Amount per 150 Cars	Cost Per Foot	Cost Material Per Car	Cost Per 150 Cars
1/2 in....	20 in.	3,000 ft.	\$0.04	\$0.80	\$120.00
3/4 in....	95 ft.	14,250 ft.	0.050	4.72	708.00
1 in....	24 ft.	3,600 ft.	0.65	1.57	235.50
1 1/4 in....	2 ft.	300 ft.	0.093	0.18	27.00
1 1/2 in....	3 ft. 6 in.	525 ft.	0.106	0.37	55.50
2 in....	40 ft.	6,000 ft.	0.146	5.84	876.00
				\$13.48	\$2,022.00

REDUCING BUSHINGS

SIZE	No. Used Per Car	Total No. Used	Price	Cost Per	Cost Per 150 Cars
1-1/2 in.....	1	150	\$0.04 each	\$0.04	\$6.00
1 1/4-1 in.....	4	600	.05 each	.20	30.00
1 1/2-1 in.....	1	150	.05 each	.05	7.50
2-1 1/2 in.....	1	150	.07 each	.07	10.50
				\$0.36	\$54.00

WIRE

SIZE	Amount Used Per Car	Used On	Cost Per 1,000 ft.	Used for 150 Cars	Total Cost Per Car	Cost Per 150 Cars
0-strand.....	56 ft. 6 in.		\$125.20	8,025 ft.	\$6.69	\$1,003.50
0-flex.....	49 in.		135.00	500 ft.	0.451	67.50
2-strand.....	59 ft.		80.00	8,850 ft.	4.72	708.00
4-strand.....	35 ft.	also grd. wires from scrap	59.40	5,250 ft.	2.06	309.00
6-strand.....	6 ft.			900 ft.	0.24	36.00
10-strand.....	7 ft. 6 in.		23.00	1,125 ft.	0.17	25.50
12-strand.....	21 ft. 4 in.		17.44	31,700 ft.	3.67	550.50
14-strand.....	105 ft.		15.08	15,750 ft.	1.58	237.00
4 or 6 strand.....	38 ft.	grd.wires scrap		5,700 ft.		
					\$19.58	\$2,937.00
7 connecting cable..	52 ft.		\$0.611	7,800 ft.	31.77	4,765.80
8 connecting cable..	52 ft.		0.582	7,800 ft.	30.26	4,539.00
					\$62.03	\$9,304.80

PIPE STRAPS, COUPLINGS AND PIPE TS

Thirty-four pipe straps ranging from 1/2 to 1 1/2 in. size were used per car. This strap cost \$.07 per lb. The cost per car was \$.0167, and for 150 cars, \$23.59.

Thirteen couplings required per car cost \$.86, and for 150 cars, \$128.25. The four 1/2-in. pipe Ts per car cost \$.32 and totaled \$48.00 for 150 cars.

MATERIAL MADE IN MILL

	Material and Size	Cost Material Each	Cost Per Car	Cost Material Per 150 Cars	Used Per Car
Resistance bars.....	2x3x46 in.	\$0.08	\$0.28	\$42.00	2
Controller fillers.....	2 1/2 sq. ft.	.08	.20	30.00	2
M. L. switch block.....	8 to sq. ft.	.08	.01	1.50	1
Pump switch.....	2 to sq. ft.	.08	.04	6.00	1
M. L. cluster, rosettes.....		.14	.42		
Slotted.....	Wood Slotting	.03	.09	63.00	3
Circuit-breaker box.....	6 1/2 in. pine, \$0.05				
Wood cleats.....	5 sq. ft. oak, \$0.08	.73	.73	109.50	1
	80 to sq. ft.		.015	2.25	17
				\$1.785	\$254.25
Circular loom cut to 8 3/4 in. lengths; labor.....					8
Asbestos for top resistance—Asbestos 1/4x4x19.14c. sq. ft.					1
Asbestos for fuse boxes—Asbestos, 1/4x5 3/4x11 1/2x28, 24c. sq. ft., \$3.36 per car.....				\$504.00	24 sq. ft.
Condulet covers, fibre—10c. per lb., 15c. car.....				22.50	10

LIGHT FITTINGS—BUZZERS

The light fittings and buzzer circuits cost \$26.32 per car or \$2,448.75 for 150 cars.

OUTSIDE MATERIAL

	Used Per Car	Used per 150 Cars	Cost Each	Cost Per Car	Total Cost Per 150 Cars
Fibre cleats o wire....	7	1,050	\$0.0024	\$0.168	\$25.50
Fuses					
3 amperes.....	1	150	.02	.02	3.00
10 amperes.....	7	1,050	.14	.98	14.70
Ribbon.....	2	300	.02	.04	6.00
Circular loom 3/4-in....	6 in.	900 ft. 4.20 per 100 ft.		.252	37.80
Circular loom 1 in....	6 in.	900 ft. 9.60 per 100 ft.		.576	86.40

JUNCTION BOXES

Type	No. Per Car	Total Per 150 Cars	Cost Each	Cost Per Car	Total Cost Per 150 Cars
88	5	750	\$0.90	\$4.50	\$675.00
89	2	300	1.75	3.50	525.00
90	2	300	1.135	2.27	340.50
106	2	300	1.55	3.10	465.00
				\$0.11 each boring 38 boxes.....	\$13.75
					\$2,005.50

SHEET IRON

Size	Used Res.	Used Car	Used to 150 Cars	Cost Per 150 Cars	Total Cost for Material Labor for 150 Cars
20x37x.035	1	1	1,200 lb. 8 lb.	\$0.28	\$43.20 Res. \$43.20 Iron 2.50 Rivet 42.00 labor
10x96x.035	C. B.	1	1,350 lb. 9 lb.	.31	48.60 C. B 48.60 Iron 30.00 labor
Rivets					
3-16x 3/8 in.	Res. S. P.	243,600.50 lb.	5c. lb.	.01 1/2	2.50 \$78.60

NOTE.—Labor and material for brackets for res. splash pan, is included in "Paye" brackets, etc.

BRASS TUBING

1/2x 3/8 in. Rheo. jun. 1 ft. 6 in.	225 ft.	\$0.06	\$9.00
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BOLTS

The number of bolts used per car, as summarized from the detail table, was 139 and their cost \$1.04 or \$157.10 for 150 cars.

SCREWS

The cost of the screws, which are given in size and number in the original table was \$4.97 per car or \$74.56 for 150 cars.

T-B BUSHINGS

The cost of the T-B bushings was \$2.15 per car or \$323.10 for 150 cars.

	Amount Used	Price Per Car	Per 150 Cars
Charcoal.....	1 bag to car..	\$0.60	\$90.00@ \$0.60
P. B. Comp.....	1 gal., 4 cars..	0.20	30.00@ 0.80
Solder paste.....	1 daily.....	0.10	15.00@ 0.10
		\$0.90	\$135.00
Solder.....	4 bars to car..	\$1.60	\$240.00@ 0.32
Tape 3/4 rubber.....	3 3/4 to car..	1.50	225.00
Tape 3/4 friction.....	6 to car.....	1.60	240.00
Tape 2 friction.....	3 1/4 to car.....	1.36	204.00
		\$6.96	\$1,044.00

LEAD GASKETS—SCRAP LEAD—MADE IN SHOP

SIZE	No. Per Car	Total No. Per Car	No. of Lb.	Cost of Labor	Total Cost Per 150 Cars
1 1/4 in.....	2	300	28	\$0.002 each	Material, \$17.20 Labor, 6.00
1 1/2 in.....	2	300	30		
2 in.....	16	2,400	266		Total, \$23.20
		3,000	324	\$6.00	Total cost per car, \$0.15

WASHERS

The cost of washers was \$1.26 per car, or \$190.79 for 150 cars.

CONDULETS

The cost of condulets was \$10.68 per car or \$1,602.00 for 150 cars.



The forms accompanying this article are the following: The daily time slip shown on page 906 is for either the hour or day rate, and is signed by the inspector and foreman. The piece-work payroll is made up from these time slips, to show the unit cost and amount of piece work done on specified cars. Separate piece-work records are also

### CAFÉ PARLOR CAR EQUIPMENT OF CHICAGO & MILWAUKEE ELECTRIC RAILROAD

BY L. L. SMITH, MASTER MECHANIC

The limited service of the Chicago & Milwaukee Electric Railroad between Evanston and Milwaukee was inaugurated Feb. 8, 1909, and was described in the *ELECTRIC RAILWAY JOURNAL* of Feb. 13.

While the high standard of equipment and fast schedule of this service have contributed to its popularity, one of its most attractive features is the excellence of its three café parlor car service, to a description of which this article is devoted.

In planning the scope of what the café service should include the preliminary questions were:

(a) What is the least amount of passenger seating space which must be sacrificed for the storage of supplies, the cooking and serving of meals?

(b) What design of range equipment will make most advantageous use of this space?

(c) How elaborate a bill of fare can be served with the facilities which will meet the requirements (a) and (b)?

In answer to question (a) the kitchen is 33¼ in. x 77¼ in. and was provided with a pantry 33¼ in. x 46⅜ in. in floor area.

A plan of one of the café parlor cars is given on page 908. The chairs are of green wicker design with leather cushions and leather padded backs and arms. The width of a chair over all is 25 in.; height to top of back from floor, 35½ in.;

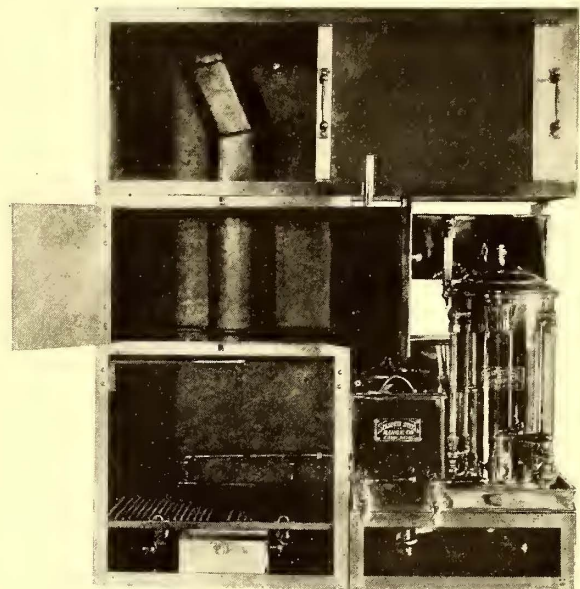
ITEM	MATERIAL		LABOR	
	Cost Per Car	Cost Per 150 Cars	Cost Per Car	Cost Per 150 Cars
Conduit and fittings...			Piece work. \$15.50	\$2,325.00
			Day work.. 6.19	928.50
			Total..	\$21.69 \$3,253.50
Electric equipment			Piece work. \$32.04	\$4,806.00
			Day work.. 7.97	1,195.00
			Total..	\$40.01 \$6,001.50
Car body, trucks, etc.			Piece work. \$18.48	\$2,772.00
			Day work.. 7.73	1,159.50
			Total..	\$26.21 \$3,931.50
Air brake..			\$87.91	\$13,186.50
			50.00	7,500.00
Two (2) fare boxes.....			\$137.91	\$20,686.50
	\$4,640.74	\$696,111.00		

SUMMARY OF MATERIAL

	Cost Per Car	Cost Per 150 Cars
Conduit.—Also including condulets, couplings, pipe, straps, pipe Ts, lock-nuts, reducing bushings, brackets holding conduit, conduit covers (fibre), conduit junction boxes, lead washers, iron washers, T-B bushings...	\$45.406	\$6,809.90
Electric Equipment:		
Wires and cables.....	\$81.61	\$12,241.50
Cleats, bolts, screws, fuses, iron brackets, sheet iron for splash pans, washers, circular loom, brass tubing, rivets, asbestos lumber, fuse boxes for light, heat and pump, wood for resistance, bars, circuit breaker boxes, controller blocks, switch blocks.....	19.90	2,986.28
Light fittings.....	12.425	1,863.75
Total Electrical Equipment.....	\$113.935	\$17,091.53
Total all material.....	\$159.34	\$23,901.43
Motor equipment in contract from G. E., including two 210 motors, two K-27 controllers, one set resistance, two canopy switches, two circuit breakers.....		
Set heaters and switches; One plow, two MA-13 fuse boxes; Miscellaneous, solder, tape, etc.		
Electric equipment: Car body with truck; Air brake.....		
Fare boxes.....		
	\$4,640.74	\$696,111.43

MATERIAL SUMMARY

	Cost Per Car	Cost Per 150 Cars
Iron brackets, hangers, etc.....	\$13.91	\$586.50
Conduit.....	13.48	2,022.00
Pipe straps.....	0.157	23.59
Couplings.....	0.855	128.25
Pipe Ts.....	0.32	48.00
Condulets.....	10.68	1,602.00
Rock nuts.....	0.748	112.20
Reducing bushings.....	0.36	54.00
T-B bushings.....	2.154	323.10
Lead washers (including labor cutting).....	0.155	23.20
Wire.....	19.58	2,937.00
Cables.....	62.03	9,304.50
Wood.....	1.695	254.25
Asbestos lumber.....	3.36	504.00
Fibre ¼ in. conduit covers.....	0.15	22.50
Fibre cleats.....	0.168	25.20
Fuses.....	1.04	156.00
Circular loom, ¾ in.....	0.252	37.80
Circular loom, 1 in.....	6.576	986.40
Conduit junction boxes.....	13.37	2,005.50
Sheet iron.....	0.612	91.80
Rivets.....	0.017	2.50
¾ in. brass tubing.....	0.06	9.00
Bolts.....	1.04	156.00
Screws.....	4.97	745.50
Light fittings.....	12.425	1,863.75
Fuse boxes, light, heat and pump.....	3.90	585.00
Washers (lock and flat).....	1.2724	190.79
Total.....	\$159.346	\$23,901.43



Café Car—Range with Doors Open to Show Interior Space

height to top of arms from floor, 25½ in. The maximum seating capacity of these upholstered chairs is 29 with no tables set up. When tables are set up it is desirable to move two or three chairs to the vestibule or off the car entirely. When an extra large load is carried the wicker seats are supplemented with six or eight folding camp chairs. The tables are of the ordinary dining-car type with the single folding leg, table hooks and wall plates. These table tops measure 22 in. x 32 in. and a raised bead around the edge, ¼ in. wide and ⅛ in. high, prevents the slipping of the tablecloth. Two persons can very comfortably be served at a table of this size.

The car arrangement shown in plan with a row of tables down one side and a row of chairs down the other is

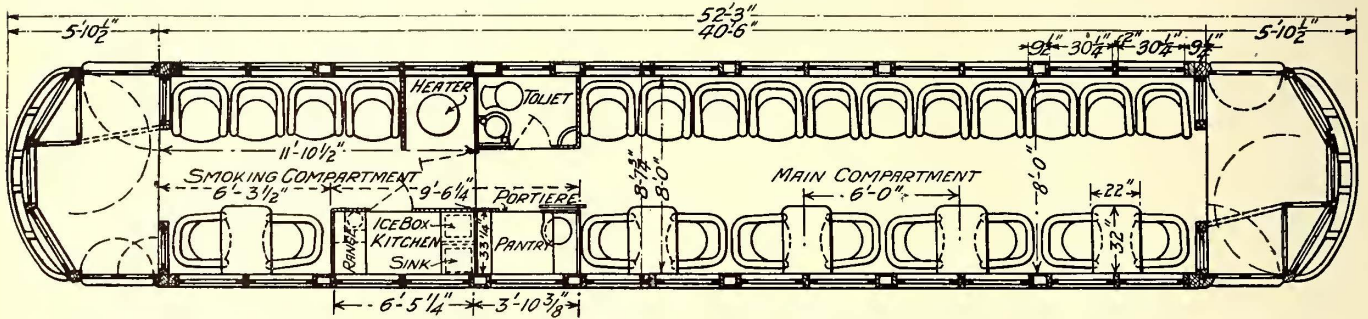
kept to show the total cost of equipping each car, thereby preventing the possibility of paying more than once for the employees. The timekeeper's card on page 906, which is used in making up the payroll, shows also the distribution of labor charges according to account numbers, and is turned over to the auditor at the end of each week.

merely to illustrate table and chair capacity of car. Ordinarily five tables are set up, one in the smoking compartment and four in the main compartment, the two pair farthest away from the observation end.

The motorman's cab is of such design that it may be folded into a very compact shape and the vestibule used as an observation end for seated passengers.

The answer to question (b) called for the investigation of all forms of ranges and broilers. From the cooking

vaporize the fuel and cause it to burn with a blue, odorless flame giving intense heat. The burners are imported from Germany and are of the Barthel design. The broiler portion is equipped with two of these burners, which are located under corrugated iron broiler plates  $8\frac{3}{4}$  in. x  $12\frac{1}{2}$  in. in size each. The broiler is partly hooded by a folding flap and the smoke from the broiler passes upward through a vent pipe and out a ventilator in the roof. The daily consumption of alcohol fuel is 1 gal. to  $1\frac{1}{2}$  gal. per day.

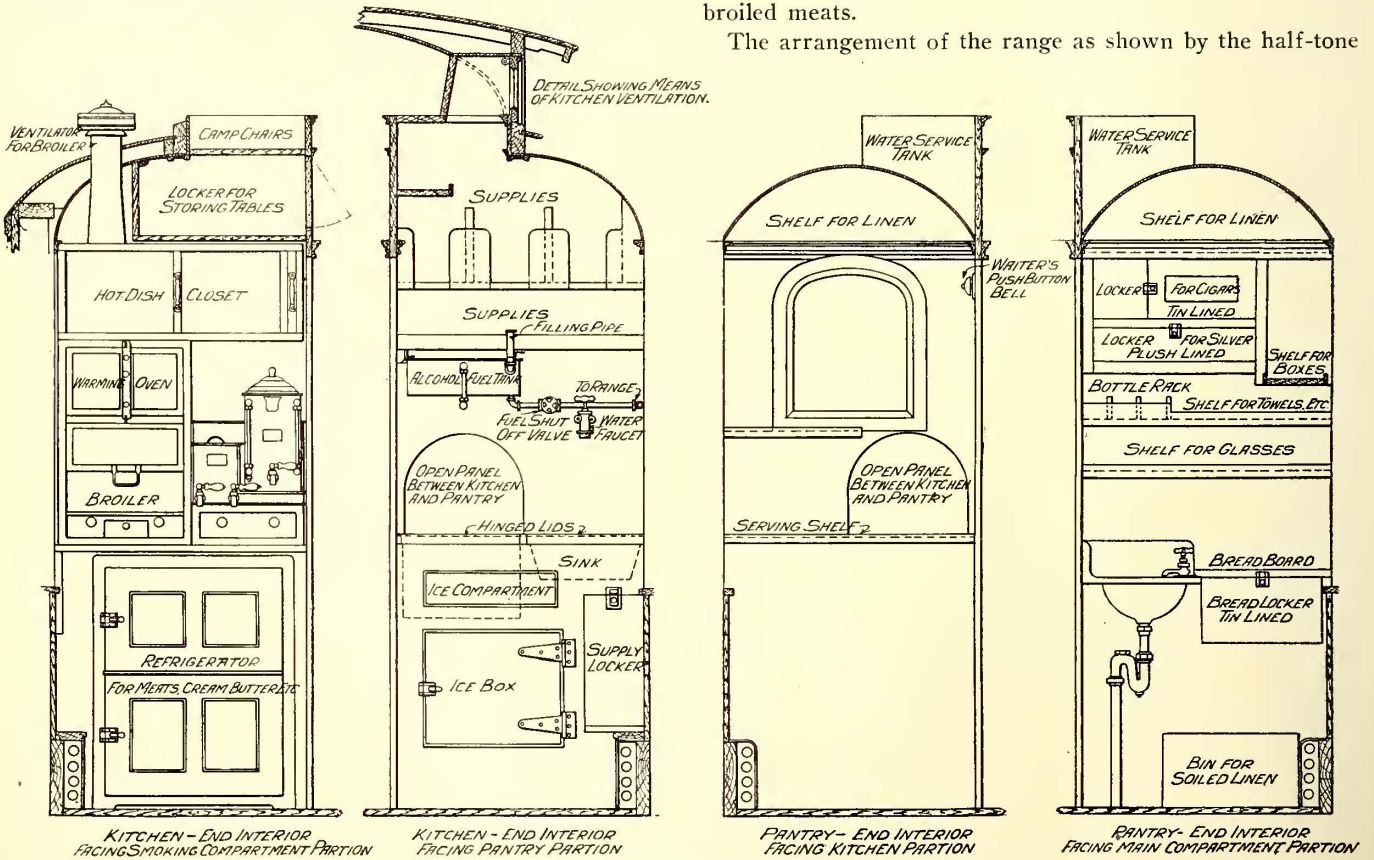


Café Car—Plan of Car and Main Dimensions

standpoint Pintsch gas would have been ideal, but the lack of charging stations and sufficient room under the car for storage tanks prevented the use of gas. Although no alcohol ranges for railroad use were on the market, and so far as could be learned the use of alcohol fuel for such purposes had never been attempted, the possibilities of denatured alcohol fuel seemed to warrant making the ex-

periment and so specifications for ranges were furnished by the railroad company to the Stearnes Steel Range Company, of Chicago. Ranges were built as illustrated by accompanying line and half-tone engravings.

The arrangement of the range as shown by the half-tone



Café Car—Elevations Showing Arrangement of Kitchen and Pantry

periment and so specifications for ranges were furnished by the railroad company to the Stearnes Steel Range Company, of Chicago. Ranges were built as illustrated by accompanying line and half-tone engravings.

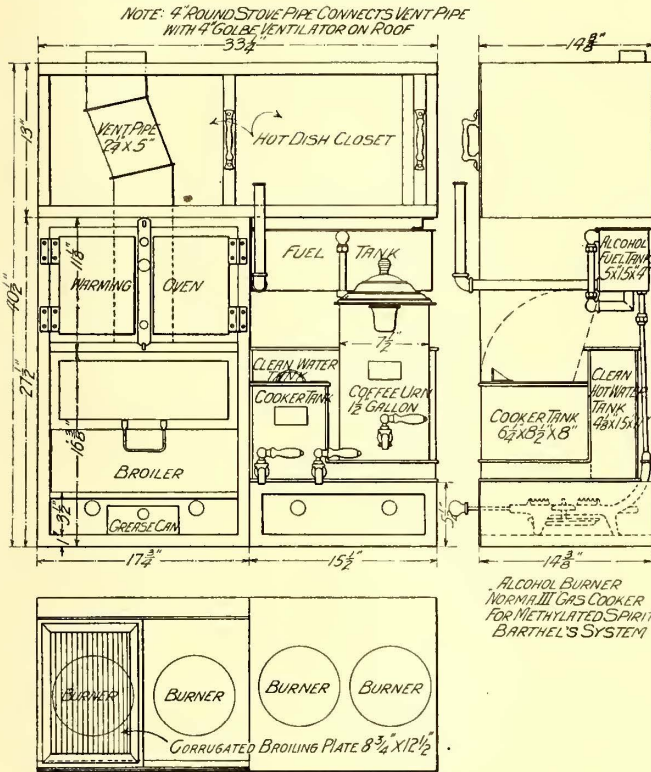
The range consists of a broiler, coffee urn, cooker and hot-water tanks. Surmounting these is a sheet-steel hot-dish closet. The alcohol is burned in four burners which

engraving has been followed except that it was found desirable to remove the fuel tank to the opposite side of the kitchen and pipe the fuel to the range. The fuel tank was thus put in a cooler place, where unnecessary evaporation was avoided and additional safety afforded.

The range is located in the kitchen on a shelf above the refrigerator, and over the kitchen is a locker for the

storage of tables. Through the open panel between the kitchen and pantry the cook passes the orders as they are prepared. The waiter prepares his tray for service in the pantry.

In answer to question (c) regarding the extent of the bill of fare, the menus for breakfast and luncheon are similar to those of a first-class Pullman service. For supper the menu is the same as that for luncheon.



Café Car—Plan, Front and Side Elevation of Range

The commissary headquarters are at Evanston and the café car service is under the direction of H. S. Moniger, who has had a large experience in this line of work and has developed a careful system of keeping check on the equipment and supplies as well as on the conduct of the service. The waiter's checks are numbered and by the means of carbon backs they are made out in duplicate. One copy is retained at the commissary and the other is forwarded to the auditor. When a car starts out in the morning a record is made on a printed blank of the supplies for which the cook and waiter are responsible and at night when the waiter checks in, he must have the supplies or their equivalent in cash.

A detailed list of china, glassware, silver, linen and other equipment for one car follows:

CAFÉ PARLOR CAR EQUIPMENT FOR ONE CAR, BASED ON MAXIMUM OF SEVEN TABLE SET-UPS. TABLES, 22 x 32 IN.

LINEN.

- 36 table cloths, 36 in. x 45 in.
- 72 table tops, 23 in. x 35 in.
- 168 napkins, 20 in. x 20 in.
- 36 dish towels.
- 36 glass towels.
- 12 waiter's aprons.
- 6 cook's aprons.
- 12 waiter's jackets.
- 6 cook's jackets.
- 2 blue jackets.
- 2 blue aprons.
- 12 table felts.
- 2 small meat cloths, 18 in. x 36 in.
- 2 wrappers, 56 in. x 72 in.

KITCHEN UTENSILS.

- 3 egg fry pans.
- 1 fry pan.
- 2 small egg whips.
- 2 vegetable ladles.
- 3 aluminum saucepans.
- 1 aluminum saucepan.
- 2 meat platters.
- 1 improved rice boiler.
- 1 4-qt. improved coffee pot.
- 2 dredge boxes.
- 2 12-in. basting spoons.
- 4 14-in. basting spoons.
- 2 potato knives.
- 1 cook's fork.
- 1 bread board.
- 2 scrub brushes.
- 1 8-qt. galvanized pail.
- 1 broiler scraper.
- 1 weight, 2 in. x 4 in.
- 1 weight, 2 in. x 5 in.
- 3 1-qt. crock.
- 1 2-qt. crock.
- 1 pudding pan.

- 30 8-in. plates.
- 18 butter chips.
- 6 soup plates.
- 6 small platters.
- 15 large platters.
- 24 coffee cups.
- 24 coffee saucers.
- 8 small vegetable bakers.
- 8 sauce dishes.
- 2 mustard pots.
- 3 celery trays.
- 6 after-dinner cups.
- 6 after-dinner saucers.
- 4 holder egg cups.
- 3 cocoa pots.
- 4 fancy finger bowl plates.
- 6 bean pots.

GLASSWARE.

- 18 water glasses.
- 12 beer glasses.
- 6 whiskey glasses.
- 6 claret glasses.
- 6 straight champagne.
- 2 vinegar bottles.
- 2 water bottles.
- 5 salt shakers.
- 6 pepper shakers.
- 6 ale glasses.
- 2 toothpick holders, 594A.

SILVERWARE.

- 18 knives.
- 18 medium forks.
- 36 tea spoons.
- 12 dessert spoons.
- 6 after-dinner coffee spoons.
- 6 oyster forks.
- 4 white-handled knives.
- 2 silver tongs.
- 1 ginger ale holder.
- 2 loaf sugar bowls.
- 2 powdered sugar bowls.
- 1 cash tray.
- 2 silver hinged-cover creamers.

MISCELLANEOUS.

- 4 brass finger bowls.
- 2 2-cup tea pots.
- 4 independent tea pots.
- 2 nickel coffee pots.
- 2 aluminum trays.
- 1 knife board.
- 1 cork puller.
- 1 bar strainer.
- 2 bar towel hangers.
- 1 bar spoon.
- 2 rubber stoppers.
- 4 tea strainers.
- 1 ice pick.
- 1 ice shaver.
- 1 can opener.
- 2 mustard spoons.
- 1 ham knife.
- 1 bread knife.
- 1 steel.
- 1 ice scoop.
- 1 silver brush.
- 1 paste brush.
- 1 keeler.
- 1 2-qt. cream can.
- 1 1-qt. cream can.
- 1 small cleaver.

In the selection of attractive designs of Theodore Haviland china, Oneida silver, cut glass and other equipment it has been the aim of the management to inaugurate and maintain in all details a service of the highest class.

The above equipment was supplied with these cars when they were put into service and has been very satisfactory.

TEN-DAY COMPARATIVE STATEMENT

A new blank form for reporting comparative railway revenue collections is used by the smaller properties operated by the Illinois Traction System. One of these blanks as filled out is reproduced. This statement covers a period of 10 days and is made up three times a month—on the 10th, the 20th and the last day of the month. It was realized that with daily reports of revenue from the large number of small properties the general manager was unable to get accurate comparisons of the small amounts of receipts for each day, partly because of the great number of reports and partly because of the way in which they might vary on account of local conditions or Sunday traffic. The present report, which is received from each property three times in a month, not only lessens the work in the local offices, but it gives the manager a convenient number of figures with which to make comparisons and draw conclusions.

JACKSONVILLE RAILWAY & LIGHT COMPANY, FEB. 20, 1909. STATEMENT OF TEN-DAY COMPARATIVE RAILWAY REVENUE AND OTHER COLLECTIONS.

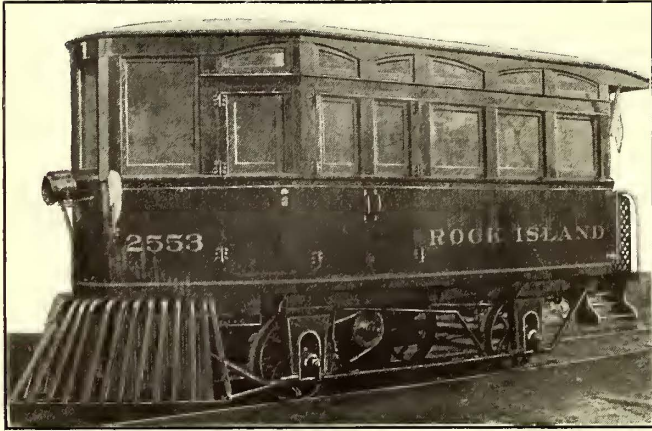
Date.	1909.	1908.	Gain or loss.	Weather.	Remarks.
Feb. 11.....	116.15	105.00	11.15	Clear	
" 12.....	110.40	114.90	4.50	Misty	
" 13.....	165.95	129.45	36.50	Rainy	
" 14.....	99.90	124.45	24.55	Rainy and cold	
" 15.....	123.70	164.80	41.10	Snow	
" 16.....	128.85	107.60	21.25	"	
" 17.....	127.45	130.65	3.20	Sloppy	
" 18.....	135.35	109.50	24.85	Rainy in evening	
" 19.....	166.85	111.85	55.00	Cloudy	Woods' sale
" 20.....	179.05	131.40	47.65	Partly cloudy	
Totals .....	1353.65	1229.60	124.05		
Previous 10 days .....	1312.75	1323.85	11.10		
Total 20 days.....	2666.40	2553.45	112.95	Gain, 4%	

	1909.	1908.
Cash fares .....	\$1,177.00	\$1,043.50
Ticket sales .....	176.00	188.00
Personal accounts (service).....	518.20	552.34
Personal accounts (miscellaneous).....	106.84	213.50
Coke .....	29.44	24.70
Miscellaneous .....	85.29	109.76
Total .....	\$2,093.67	\$2,131.80
Previous 10 days.....	11,242.61	10,338.53
Total 20 days.....	13,336.28	12,470.33

Certified: H. SAWYER, Auditor.

## A NEW GASOLINE MOTOR CAR FOR INTERURBAN SERVICE

The continually increasing demand for better transportation facilities in sparsely populated districts recently has resulted in the construction of a number of gasoline motor-driven passenger cars. The field for such equipment is found partly on steam railroad branch lines, which cannot be expected to afford enough passenger traffic to pay for the operation of the heavy trains, but where a pas-



Gasoline Motor Car—Front End View

senger service must be given as a matter of policy. Gasoline motor-driven passenger cars also have been used by steam roads to give a frequent service in direct competition with parallel electric lines. Another field for small gasoline motor-driven passenger cars is on lines which operate only part of the year. A large opportunity is also thought to exist in many localities not now served with any railroad facilities. Those promoting the sale of such cars suggest that where there may be a doubt as to the profitableness of an electric interurban line or extension,

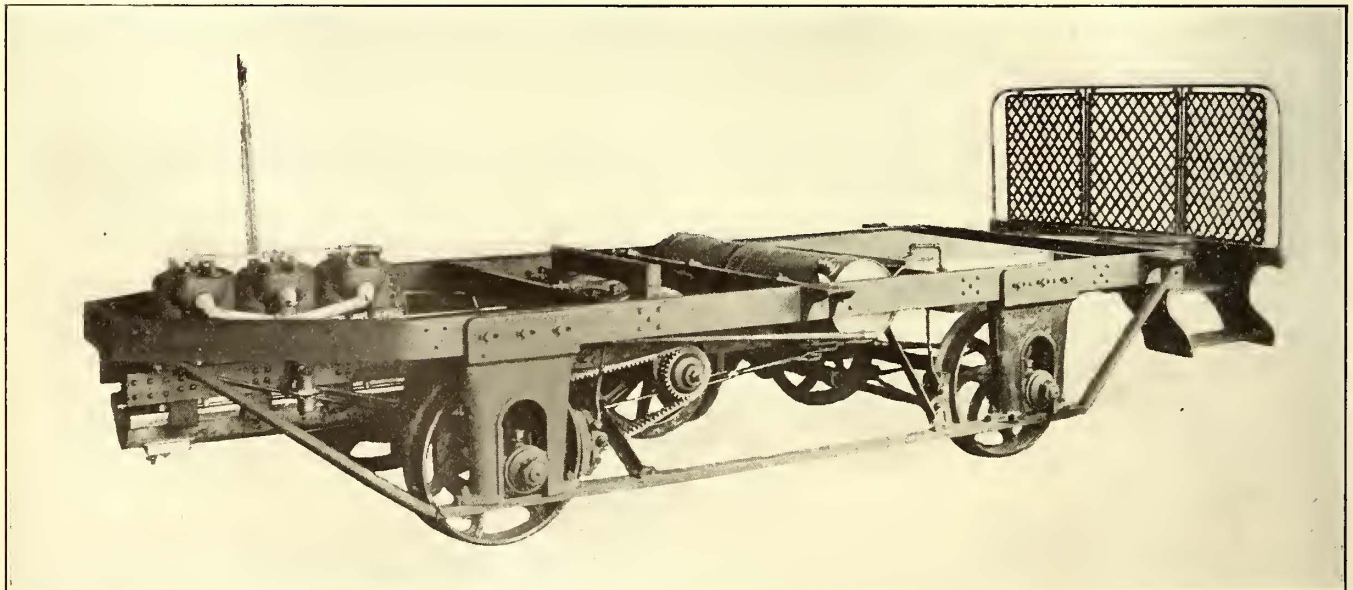
value. Accompanying illustrations present the general features of the 25-passenger gasoline engine-driven combination baggage and passenger car built by the Stover Motor Car Company, Freeport, Ill., and supplied to a number of steam and interurban roads. This car has a three-compart-



Gasoline Motor Car—Rear End View

ment body supported on an all-steel underframe carried by two axles set 8 ft. 6 in. on centers. The body is built of wood and designed to have the maximum strength with due regard for minimum possible weight. The weight of the body is spring-supported on the journal bearings by eight coiled springs distributed one pair at each journal. An extension of the steel underframe supports the rear platform, to which access is had by steps on either side. This platform is not vestibuled.

The interior of the body is subdivided by two bulkheads.



Gasoline Motor Car—Underframe, Showing Engine, Transmission and Tanks in Place

it will be found good policy, first, to build up the service by the use of independent gasoline engine driven motor cars, and, later, when the traffic warrants, install the electric equipment.

This latter field for gasoline cars should interest electric railway builders and a description of a type of car now being sold for local and branch line service may be of

The forward compartment includes the space within the wedge-shaped front end only, and is the operating cab. The bulkhead which divides the cab from the baggage compartment connects with the latter only by means of a window. Between the cab at the front and the main compartment is a section available for the use of smokers and for carrying baggage. Double doors which swing outward

provide a means for handling baggage on each side of the car. Wood-slat seats arranged to fold flatly against the wall are furnished in this compartment. The baggage and the main compartments are connected by a swinging door in a half-glass partition. The main compartment is fitted with leather-upholstered cross seats for 16 passengers. The center aisle is 22 in. wide. Gas for illumination is furnished from Prestolite tanks carried in the cab.

The main feature of a gasoline car is its power plant. The engine of the car here described is built by the car builder and is rated at 60 hp. There are six cylinders 5½

Passengers handled .....	3,483
Miles run .....	3,262
Miles run per gallon of gasoline.....	8.6
Cost per mile run.....	6.1 cents
Revenue per mile run.....	16 cents

The car illustrated was recently built for the Chicago, Rock Island & Pacific Railroad for operation on a branch line out of Atchison, Kan. This car easily carries a full load over steam railroad tracks at a schedule speed of 30 m.p.h.

**DENVER AS A CONVENTION CITY**

The selection of Denver as the site for the convention of the American Street & Interurban Railway Association in 1909 has brought the city and its environs, within the last week, prominently before the officials of all the electric railway companies in this country. No national street or electric railway convention has ever been held as far west as Denver. Three conventions, those of 1885, 1896 and 1904, were held in St. Louis; that of 1900 was held at Kansas City and that of 1889 at Minneapolis. With these exceptions, every convention of the American Street Railway Association and of the American Street & Interurban Railway Association has been held east of the Mississippi River.

There is much, however, to attract the visitor to Denver. It possesses excellent accommodations in the way of hotels and halls for large gatherings, and many national associations have held conventions there. Instructive lessons are to be learned from an inspection of its well-built and well-operated railway system. There is an abundance of scenic features. Finally, a convention in Denver will afford an opportunity of a mingling of railway operators from the Pacific Coast cities with those from east of the Rocky Mountains. The presence at the 1909 convention of men who are responsible for the wonderful development in the electric railway and power transmission systems on the Pacific Coast should greatly increase the scope of the features to be discussed and the resulting value from the exchange of ideas.

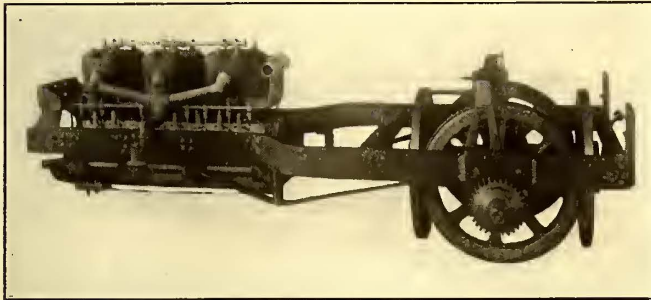
Readers of this paper are familiar with many of the interesting features of the local system at Denver, but a brief summary will be given here, as well as an account of some of the other points of interest which will undoubtedly attract the attention of the visitor.

**THE DENVER CITY SYSTEM AND ITS INTERURBAN BRANCHES**

The Denver City Tramway has 186.5 miles of track, which include the city system and the Denver & Northwestern Railway, connecting Golden with Denver. The tracks in the city system are 3-ft. 6-in. gage, while those of the interurban lines are standard gage. The track structure in Denver is notable for its excellence and because the first high T-rails were rolled for this work. The rolling stock equipment includes 306 cars for city and suburban service. Among these are comfortable "Seeing Denver" cars, always well patronized.

The types of cars used in the Denver city service were designed by the operating organization of the Denver City Tramway, and many were built in Denver. These cars are especially notable for their low weight. There are two general types of equipment—motor cars having either two or four motors and trail cars. Both types have the center side entrance, without doors, through which passengers are very satisfactorily and safely handled.

In the ELECTRIC RAILWAY JOURNAL for April 3, 1909, page 588, John A. Beeler, vice-president and general man-



**Gasoline Motor Car—Engine and Transmission**

in. in diameter by 6 in. stroke. The normal speed of the engines is 600 r.p.m. It is stated that with the car running at a speed higher than normal this engine is capable of developing 90 hp. A double system of ignition, employing a high-tension magneto for one set of spark plugs and a storage battery and spark coil for a second and independent set of plugs, assures reliability. Positive feed lubrication is provided for each cylinder and all crankshaft bearings. The motor is water-cooled from a supply tank carrying 50 gal. The radiators are placed below the front of the cab immediately behind the locomotive type pilot.

One illustration shows the running gear of the car, with the motor, transmission, fuel and water tanks mounted thereon. The motor and the double-drive friction type of transmission are built within a strong channel-iron frame, which, in turn, is supported from the underframe of the car at three points. By means of the friction drive, the wheels of which are connected through a system of levers to the main operating lever in the cab, the car may be driven forward or backward at will, or the engine thrown out of gear by the progressive movement of the one operating lever. All the transmission shafts run in Standard roller bearings, and the car journals rest in Hyatt roller bearings. Connection between the front car axle and the transmission shaft is made through two 2-in. Morse silent chains, either one of which is of sufficient strength to drive the car. The entire power plant and transmission can be taken from the trucks as a unit by removing the bolts at the three suspension points.

Strong claims are made for the operating economy of these units. The following statement of the performance of a 60-hp Stover car has been furnished by R. C. Jones, general manager, St. Joseph Valley Railroad, LaGrange, Ind., for the month of March, 1909:

Revenue .....	\$519.50
Expense of operation:	
Wages of crew.....	\$135.00
Material .....	2.10
Labor .....	11.30
Gasoline, 381 gal.....	40.00
Lubricating oil and waste .....	10.75
	199.15
Net revenue .....	\$329.45

ager of the Denver City Tramway, presented an article describing the operation of these cars and comparing the costs of operation of motor cars with trains of motor and trail cars. The 43-ft. closed four-motor car used in Denver weighs 43,400 lb. complete, and seats 52 passengers. During the rush hours these motor cars pull 38-ft. closed trailers weighing 13,000 lb. complete and seating 46 passengers. The problem of handling the rush-hour traffic with trail cars and the normal traffic of the day with single units has been carefully and satisfactorily worked out by the Denver City Tramway Company. A constant number of train units is operated throughout the day, and the rush-hour traffic is accommodated by the addition of a suitable number of trail cars to the motor cars, operating on the regular schedule with the regular headway.

The highly successful results with the operation of trail cars in Denver would not be possible, it is thought, if this company did not have so excellent a method of maintaining the regularity of its schedules. A telephone dispatching system serves this purpose. Nearly 20 years ago the plan of operating street cars by telephone was put into practice on the lines of the Denver City Tramway. With the growth of the railway system the dispatching methods and equipment have been improved, until now all cars in service on the city lines are operated directly under the orders of train dispatchers centrally located. The running time on all the lines and the time allowed for running between spacing points are published for the use of the trainmen, and by means of the telephone network, with call boxes along the lines, from which the crews report, the dispatcher is able to space the cars accurately and to handle them with great facility in times of emergency.

The power plants of the Denver City Tramway contain some very large reciprocating engine-driven generators, as well as later designed turbine units. The outlying lines of the tramway company are supplied with current through an a.c. transmission network feeding attractively designed substations.

Plans are now under way for the erection of new shop facilities for the Denver City Tramway. There will be found, however, in the present shops many ideas put into practice that have resulted in good car maintenance at low costs. The storekeeping and purchasing departments of the Denver City Tramway have complete systems for the handling and distribution of new and scrap materials that may be required at the five car houses.

The Denver & Northwestern Interurban Railway, which is operated by the City Tramway Company, reaches its terminus at Golden, the very foot of the Rocky Mountains. Golden is famous for being the scene of the earliest gold discoveries. This interurban road does a large freight business, particularly in the transportation of coal.

#### OTHER INTERURBAN LINES

A very interesting interurban line extending out of Denver is that of the Denver & Interurban Railway, which is the 30-mile electrified division of the Colorado & Southern Railroad. This line was described in the *ELECTRIC RAILWAY JOURNAL* for Sept. 5, 1908, page 595, and has two tracks between Globeville, a suburb of Denver, and Boulder, Colo. During the electrification work the roadbed was put into excellent shape and the tracks were relaid with 85-lb. rails and slag ballast. High-speed trains are operated over this line, taking single-phase current at 11,000 volts from catenary supported trolley wires. There are many detail features in connection with this road that will doubtless be of interest, and a trip over the line is

doubly attractive because the snow-capped Rocky Mountain range is within sight from the car window.

Another interesting line is that of the Inter-Mountain Railway Company, which operates by steam from Denver to Ralston, a distance of 19 miles, and by electricity from Denver to Lakewood, Golf, Bee Hive, Rifle Range and Golden. This line has 16 cars, and takes power from Denver City Tramway Company.

#### OTHER ATTRACTIONS

Outside of its railway systems, the city has much to attract the visitor. Within half a day's ride of Denver and, in fact, in one county of Colorado the mountain peaks rival in number and height those in all of Switzerland. The various steam and electric lines radiating from Denver to the south, west and north lead directly to features of great interest to those interested in the wonders of nature.

South from Denver 74 miles is Colorado Springs, which has a well-built and well-operated city and suburban system reaching attractive natural features. From Colorado Springs the famous trip up the Pike's Peak cog railroad can be taken in a day. Other well-known haunts of the sightseer are the Garden of the Gods and the Seven Sisters' Falls. From Colorado Springs the Royal Gorge can be reached in four hours' ride. The Cripple Creek District Railway, operating both steam and electric lines, also affords a trip of intense interest. The electric cars of this road pass among the famous Cripple Creek gold-mining camps, located 10,000 ft. above sea level.

Another interesting railroad trip is offered over the New Denver, Northwestern & Pacific Railroad, which is extending its standard-gage line from Denver over the mountains toward Salt Lake City. In the summer, excursion parties are taken by steam train to the Rocky Mountain divide, where snow is found the year round, and this trip requires less than a day's time.

#### ACCESSIBILITY OF DENVER

If one is not familiar with the train schedules of the roads leading to Denver he will be surprised at the excellent service offered and the accessibility of that city from all parts of the country. Denver is about 1050 miles west of Chicago, and may be reached in about 30 hours' running time from any of four main trunk lines. The leaving time of the Denver trains from Chicago is such that close connection can be made with the fast trains from the Atlantic Coast cities. It is possible to leave New York at 3:30 o'clock one day on one of the 18-hour trains, have more than an hour in Chicago the next day, and arrive in Denver at 3 p. m. the third day, the total trip requiring but 50 hours. In point of time Denver is midway between New York and San Francisco. A direct line from Galveston to Denver affords good transportation service for the rapidly growing interurban territory of eastern Texas. There are also several through trains to Denver from St. Louis and Kansas City, which will afford comfortable traveling for those from the Southern States.

Three principal gages of line are used on the various railways in the Commonwealth of Australia. The most common gage, 3½ ft., is used on about 7000 miles of line, scattered over five of the States. The 5-ft. 3-in. gage is second in importance, and the 4-ft. 8½-in. gage, used only in New South Wales, third, with 3472 miles of line. There are also 82 miles of 2½-ft. gage, and 23 miles of 2-ft. gage. Standardization has been proposed, but no action has been taken.



## MEETING OF EXECUTIVE COMMITTEE OF MANUFACTURERS' ASSOCIATION

A meeting of the executive committee of the American Street & Interurban Railway Manufacturers' Association was held, May 7, at the headquarters of the American Street & Interurban Railway Association, 29 West Thirty-ninth Street, New York. Those present were the president, J. R. Ellicott, H. F. Martin, K. D. Hequembourg, C. G. Castle, H. C. Evans, C. S. Hawley and James H. McGraw. W. S. McGowan was also present, representing O. H. Cutler, and S. M. Curwen, representing W. H. Heulings, Jr.

According to the amendments to the constitution and by-laws of the association, it was necessary to elect four vice-presidents, to take charge, respectively, of the subjects of entertainment, finance, exhibits and relations with the main association. Charles C. Peirce was elected vice-president in charge of entertainment; C. S. Hawley, vice-president in charge of finance; K. D. Hequembourg, vice-president in charge of exhibits, and James H. McGraw, vice-president in charge of relations with the main association. George Keegan was reappointed secretary-treasurer of the association.

The report of the committee on location, announcing the selection of Denver, was received and approved by the executive committee, and the officers of the association were authorized to execute the regular form of contract. The Brown Palace Hotel was selected as the headquarters in Denver for the Manufacturers' Association. The president was also authorized to appoint a committee of three on transportation. The members of this committee have not yet been announced. Charles C. Peirce was appointed chairman of the badge committee and James H. McGraw was appointed chairman of the printing committee.

Considerable discussion ensued on the question of convention souvenirs. It was found to be the experience of this association, as well as of other associations, that when souvenirs were given away at the different booths a great many people from the city in which the convention was located were attracted to the exhibits. These people were in no way interested in railway matters, but made every effort to obtain souvenirs, and often passed themselves off as railway men in their efforts to secure these gifts from exhibitors. The evil is one which has grown greatly in recent years at the electric railway conventions as well as at other conventions. It has been found so great a nuisance at the Master Car Builders' and American Railway Master Mechanics' conventions that the manufacturers' association connected with those associations passed a resolution following last year's convention that the members should not give souvenirs. As it was found that the same conditions had prevailed at recent electric railway conventions, the secretary of the American Street & Interurban Railway Manufacturers' Association was instructed to advise all members, in the next convention circular, that the practice of giving convention souvenirs was objectionable to the majority of the members, and it was the opinion of the executive committee that this practice should be discouraged and discontinued.

Great enthusiasm was expressed over the prospects for the next convention. Those members who were on the committee which visited Denver described the advantages of the city for convention purposes and the interest manifested in the proposal to meet there by Western managers. It was expected that the meeting would be very successful.

## FINAL HEARING ON CENTER SIDE-DOOR SUBWAY CARS FOR NEW YORK

On Tuesday, May 11, Commissioner Eustis, of the Public Service Commission, gave a hearing on the question of side-door cars for the New York subway. Frank Hedley, vice-president and general manager of the Interborough Rapid Transit Company, was the only witness. The commissioner said that the Public Service Commission was still of the opinion that the Arnold end side-door car was the most practicable design if properly operated, but owing to Mr. Hedley's expressed preference for the center side-door car, the commission was willing to give the Interborough Rapid Transit Company as free a hand as possible. In view of the company's position he would not call for any further testimony on the question of side doors and would arrange to rescind the order for the operation of the Arnold trains when issuing an order covering the operation of center-door trains.

Mr. Hedley denied that the end-side-door train had not been properly operated. He said that, in fact, it had been operated according to the instructions of the Public Service Commission and its consulting engineer. In his opinion it was a failure and not as good even as the present equipment. He stated that the center-door train as constructed and operated by the Interborough Transit Company is the best kind of train that his company has ever had in the subway express service. It reduces the station waits and the discomfort of passengers waiting to get on and off.

Mr. Hedley said further that the 50 cars built about two years ago had been designed for ultimate center-door operation and could be easily converted for the express service. In that event the run of these cars could be so arranged that they would follow each other around the route. He was not entirely satisfied with the experimental train now in service, but the outlook was very encouraging. He was desirous, however, of embodying some improvements to add to the safety of the passengers. Not all of the cars should be changed forthwith for center-door operation on express routes, although he believed it would be done ultimately. It was advisable to get more experience on the subject by trying the 50 cars before changing over any others.

In response to a question from Commissioner Eustis, Mr. Hedley said that adjustable or sliding platforms to cover the gaps at the curved platforms would only add another source of danger. Such devices necessarily are complicated and have a tendency to get out of order. Mr. Hedley added that car manufacturers were now preparing detailed estimates on 100 subway cars which the company contemplates ordering for the fall service. No definite order could be placed, however, until the commission had specified what type it wanted. If the commission would render a decision within a week he would place the requisition for these cars before his board of directors and if approved the work on the new cars could then be started in time to have them available in the autumn. Commissioner Eustis intimated that a definite order concerning the type of side-door car satisfactory to the commission would be issued within 10 days.

The Lower Austrian & Styrian Alpine Railway, 157 miles in length, is to be changed from steam to the single-phase system. Fourteen 500-hp locomotives will be required. As the gage is only 30 in., side-rod locomotives will be used. The trolley voltage will be 6000.

## CONTROVERSY OVER ABANDONMENT OF TICKETS IN PHILADELPHIA

The announcement of the Philadelphia Rapid Transit Company, published in the last issue of this paper, that it would withdraw from sale the tickets formerly sold at the rate of six for 25 cents and would charge a straight 5-cent fare, has aroused considerable opposition. On May 11 a public meeting to protest against the ruling was held at the Academy of Music. At this meeting Edwin O. Lewis, formerly a member of Councils, said he had letters from Bion J. Arnold and from Henry J. Pierce, vice-president of the Amsterdam Corporation, of New York, discussing the respective bases on which they would be willing to undertake an inquiry into the affairs of the transit company. These letters, made public later by Mr. Lewis, are as follows:

### LETTER FROM B. J. ARNOLD

I would prefer that the commission for undertaking the work come from the city, for the reason that I have never as yet acted in similar cases except for the city, or, by agreement, for both the city and the companies interested, and although I know that in this case your connection, and of those you represent, is entirely in the city's interest, I hesitate about offering to accept the commission from individuals, for the reason that it would be establishing a precedent on my part that might be embarrassing to me in the future.

If, therefore, it is practicable to bring it about so that I represent the city in the analysis of the case it would be preferable to me, and I believe much more effective in the results to you, for the reason that I could, as the city's representative, probably secure information necessary for the proper conduct of my work that the companies might consistently refrain from giving were I acting for individuals.

I will furnish the necessary skilled assistants, such as engineers, draftsmen and accountants, to compile the information upon which my reports are based and make such reports as are desired.

This is the same basis upon which I have acted for the city of Chicago, the Public Service Commission of the city of New York and other municipalities and public bodies, and it has been found very satisfactory, as it enables my clients to have as much or as little work done as they desire, and at the same time puts it on a safe basis for me to undertake the work.

### OFFER OF THE AMSTERDAM CORPORATION

The letter of the Amsterdam Corporation says:

Replying to your recent letter, would say that we are willing to undertake the preparation of a report upon the street railway system of Philadelphia, which shall contain a complete statement of its physical and financial condition, together with recommendations looking toward the establishment of first-class service at such rates of fare and issuance of transfers as is consistent with thorough maintenance of the property and fair return upon the capital it represents. The report would set forth the following:

A statement of the financial condition of the company; analysis of its agreements with subsidiary companies; character and extent of securities issued, owned or controlled by it; annual receipts and expenditures for, say, three years past; statistics and figures furnishing a complete financial statement.

A statement as to present value of entire property, together with estimate of cost and loss incurred in changing from horse-car system to cable and from cable to electricity, and setting forth as near as may be a fair and just value upon which the company should receive returns.

Routes: A careful study to be made of present routing of cars and volume of traffic and recommendations made for establishment of such routes as shall best conduce to economy of operation and convenience of the public.

Speed: Recommendations to be made as to requirements necessary to enable the rapid movement of cars, such as furnishing necessary power and passage of ordinance requiring vehicles to keep as much as possible off tracks.

Equipment: Recommendation of a standard, up-to-date type of car, to be gradually installed, which shall be commodious and comfortable, be equipped with the most practical electrical apparatus, have pay-as-you-enter feature, and not so heavy as to produce undue wear upon the tracks.

A thorough examination will be made of the physical condition of the property, such as power houses, car houses, track, equipment, and recommendations made, where necessary, as to their improvement.

Recommendations will be made for the establishment of such fares and issuance of transfers as consistent with first-class service under economical and capable management, together with a fair return to the company.

A statement to be made of results of operation of street railway systems in other large cities as compared with the service afforded at present by the Philadelphia system.

An analysis will be given of the existing situation between the company, the municipality and the public, together with recommendations for its improvement.

The report will be a comprehensive statement of the present condition of the street railway system of Philadelphia from a technical, financial and operating standpoint, and will present a plan for the establishment of relations between the public, the municipality and the company which shall be fair to all.

In order to furnish the information which you require and should have, and do ourselves justice, we should have, in the preparation of this report, the cordial co-operation of both the city authorities and the officials of the Philadelphia Rapid Transit Company. If the investigation is intrusted to us it shall be conducted with absolute impartiality, with the object of furnishing information and recommendations which will result in the settlement of all questions of difference now existing between the company and the municipality upon a basis that will be fair and just to all concerned.

The time required in the preparation of this report would be from two to three months, and we are prepared to undertake it with the understanding that the cost will range from a minimum of \$25,000 to an amount not exceeding \$35,000, depending on the required amount of detailed information.

### OTHER DEVELOPMENTS

The City Club, of Philadelphia, has written letters to John B. Parsons, president of the Philadelphia Rapid Transit Company, and to Mayor Reyburn, announcing its intention to make an impartial inquiry into the relations between the city and the company. George Burnham, Jr., president of the club, in his letter to Mr. Parsons on the subject, indicates that it is proposed to make a study of the questions involved "with the consent and co-operation of the company:

"First. Under the direction of Bion J. Arnold, who reported on the street railway situation in Chicago and New York.

"Second. If this is not acceptable, under a chief expert to be named by the Railroad Commission of the State of Pennsylvania.

"In either event, it is proposed that your company pay one-half of the expense of the inquiry and the other half be paid by public subscription, to be raised by this club. If these terms be accepted the reservation shall be made that the chief expert named by the State commission shall be subject to the approval of yourself and of myself as president of this club."

William H. Carpenter, a representative of the city on the board of directors, is quoted as having said in regard to the new rule on fares:

"If there is any way under the sun for the company ever to pay dividends I think this had to be done. I left before a vote was taken regarding the fares. But I think the vote was a proper one. I have no interest in it and I have not been influenced by any one. I have nothing to do with conditions as they were. I must accept the conditions as

they are; I must accept the contract as it exists to-day. That contract was not of my making. The raise in fare was necessary. Operating expenses are increasing; the price of materials is increasing; something had to be done, and the only thing seemed to be to abolish the six-for-a-quarter tickets."

George H. Earle, Jr., who retired recently from the board of directors of the company, made a statement in which he said:

"The company was being ruined by barefaced frauds on the transfer system. They had to be stopped, or transfers, strip tickets, exchange tickets would all have been ended by a receivership.

"Now, the business question is simply this: The city cannot grow unless its means of transportation grow. This year the company will come out nearly even, but only by holding up repairs and stopping all extensions.

"That policy is not only detrimental to the city, but must sooner or later break down of its own weight.

"Is it not better to get the matter in shape at once? That was the question the board had to face. It knows more than any one about it; and I do not see how any one can therefore safely say it must be wrong. Personally, I do not think anything would justify this or any change in charges but business necessity; but I do think that if that exists, and the directors know best, it is justifiable."

Councils of Philadelphia have defeated resolutions demanding restoration of the six-for-a-quarter tickets.

### WOOD PRESERVATIVES USED IN 1908

According to the United States Forest Service, more than 56,000,000 gal. of creosote and nearly 19,000,000 lb. of zinc chloride were used in preserving timber in the United States last year. Small quantities of crude oil, corrosive sublimate and other chemicals were also used. Assuming that on an average one gallon of creosote, or one-third of a pound of zinc chloride, will protect a cubic foot of timber from decay, more than 100,000,000 cu. ft. of cross-ties, piling, poles, mine and other timbers were given a treatment that will greatly increase their life and usefulness.

Never since timber treating began on a commercial scale in the United States has the domestic supply of creosote been equal to the needs of the industry. With the rapid development of wood preservation in recent years the insufficiency of the home production of creosote has become more marked. In 1908 almost seven-tenths—to be exact, 69 per cent—of the creosote used by the treating plants was imported, and but 31 per cent was obtained from domestic sources. Nearly three-fourths of the imported creosote comes from England and Germany; some is obtained in Nova Scotia, and some in Scotland and Holland. The domestic creosote used by the treating plants was obtained chiefly in New York, Philadelphia and other large cities.

Creosote is distilled from coal-tar, a by-product in the manufacture of illuminating gas and coke from bituminous coal. Not more than 20 per cent of the coke used in the United States is made in by-products ovens. No coal-tar is recovered from the beehive ovens in which most of the coke is made; consequently, the total production of coal-tar is far less than it would be with more conservative operations. Unfortunately, American operators do not even get the fullest use of the limited quantity of coal-tar made in this country, for it does not pay the operators to distill coal-tar for creosote alone; so, unless they can find

a market for the associated products, it is not separated. The zinc chloride used in wood preservation is all obtained from domestic sources, according to the reports. Most of it is produced by a few large chemical companies.

The railroads have always taken a leading part in timber preservation in the United States. Twelve of the forty-four firms or companies which are operating timber-treating plants are railroad companies. The railroads also have many ties treated by commercial plants. Statistics upon the number of ties treated in 1908 have not yet been compiled. In 1907, however, according to Forest Products Bulletin No. 8, of the Bureau of the Census, the steam railroads of the United States used 19,192,000 treated ties, of which 11,217,000 ties were treated at their own plants and 7,975,000 ties were treated at other plants.

The electric roads used 664,000 treated ties in the same year, nearly two-thirds of which were purchased already treated. The majority of the treated ties used by the steam railroads was preserved with the zinc chloride, while with the electric roads more ties were treated with creosote than with any other one preservative.

### PITTSBURGH A. I. E. E. MEETING

The regular monthly meeting of the Pittsburgh Section, A. I. E. E., was held in Carnegie Institute April 13, and was preceded by the usual dinner at the University Club. W. Edgar Reed, chairman, presided. The subject of the evening was "Repairing Live Lines While in Service," which was considered in a paper prepared by J. S. Jenks, assisted by W. H. Acker, both of the West Penn Railways, Connellsville, Pa. Mr. Jenks showed by means of a large number of lantern slides the system together with the tools which he and his assistants have developed on their 25,000-volt lines in order to avoid the necessity for linemen to come in contact with the line conductors, and showed how completely equipped poles could be stripped of all wires and crossarms, and the insulators, crossarms and conductors replaced without interrupting any circuit. The paper excited a lively interest among the body of engineers present, which included representatives from all the large electrical companies and public-service corporations in the territory. The discussion was participated in by H. N. Muller, D. E. Burke, W. H. Acker, N. W. Storer, A. J. Glenn, F. F. Espenschied, O. M. Jorstad, H. A. Calderwood, Graham Bright, R. A. L. Snyder and Bertrand P. Rowe.

F. Steinhart, general manager of the Havana (Cuba) Electric Railway, calls attention in the last annual report of that company to the efficiency of a system of discipline adopted in 1907, as follows: "The jury system established in October, 1907, whereby men chosen from the ranks of the carmen pass judgment upon infractions of rules committed by the men and determine the discipline to be imposed, was continued throughout the year 1908 with remarkable success. The feeling among the men in general, that they are judged by their own companions, is excellent. Aside from this, the men who serve on this jury acquire a knowledge of the importance of discipline and strict observance of the rules and regulations of the company, and can always be counted upon as important factors in harmonizing the interests of the company with the interest of the employees, and the exercise of this duty I find gives a sense of dignity and self-respect not only becoming the character of the men, but which adds to their private happiness."

## COMMUNICATIONS

### DISCHARGED EMPLOYEES

SHREVEPORT TRACTION COMPANY  
SHREVEPORT, LA., April 28, 1909.

To the Editors:

Apropos of the communication of Mr. Funk, of Louisville, Ky., concerning discharged employees, the writer was a witness in a suit tried in a neighboring city during the progress of a large fair, and was surprised to notice several conductors in service who had been but recently discharged from this company on account of stealing. From personal observation they were appropriating several times as much money *each trip* as they had stolen during a *day's service* with us. One of them frankly told me he was expecting his discharge, but intended to move on to another city in the same territory; in fact, I gathered from him that the "bunch" was traveling in a drove. One of them had written back to our crew explaining what good "picking" was to be had in the city where they then were, and requesting some of our men to join them.

It occurs to me that concerted action on the part of all the companies interested, looking to the rejection of applicants who do not produce a service letter or clearance certificate of a very recent date, and showing continuous employment over a considerable period would eventually eliminate the movement of such employees. If the applicant pleads that he was inexperienced, one trustworthy motorman or conductor could "try him out"; if he claimed to have been engaged in other lines of work he should give full reference or produce his certificate.

I am not unmindful of the existing laws in some States relating to discharged employees, but the plan above outlined would not render the companies liable in any way, as the seeker of employment would be obliged to produce his letters, else sign a release in behalf of the company to whom inquiry was made. In my humble opinion all of the "undesirables" could in a short while be permanently retired from the service.

L. M. LEVINSON,  
General Manager.

SHEBOYGAN LIGHT, POWER & RAILWAY COMPANY  
SHEBOYGAN, WIS., April 27, 1909.

To the Editors:

In the April 24 issue of the JOURNAL you print a communication from J. T. Funk, of the Louisville Railway Company, who puts his finger on one of the most abused features of electric railway operation. We heartily agree with Mr. Funk, and hope that some action will be taken by the American Street & Interurban Railway Association to prevent the re-employment of discharged men who have proved themselves unworthy of holding the position of motormen and conductors.

Four years ago it became my duty to reorganize the operating force of this company. Before that time accidents had been numerous and serious, and about that time actually threatened the existence of the company. Under Mr. Gonzenbach's instructions I rearranged for a systematic replacement of all the dead timber in our force, and it took some trouble, as well as diplomacy, to accomplish our purpose. I may here remark that since that time and during the past three and a half years the number of accidents has been negligible. No accident has occurred which has called for a settlement of damages in excess of \$100, and the total sum paid altogether for damages within the last three and a half years has been less than \$1,000, whereas the

accidents during the two years previous to that had cost over \$20,000. The difference, in my opinion, is entirely due to careful selection of employees.

To my utter astonishment I found that all of the undesirable employees who were weeded out from our force invariably found employment with other companies, and I was not surprised to hear from time to time of serious accidents on the lines of other companies in which, somehow or other, our old discharged employees figured; in fact, I know of three or four serious accidents which happened to cars in charge of some of our discharged former employees. We do not know if these employees were at fault, but the fact seems significant. It seems to me that a uniform reduction in damages would undoubtedly result from a more strict supervision of applicants' records, and by general co-operation among railway officers charged with the responsibility of employing platform labor.

H. J. PAGEL,  
Superintendent Railway.

### COST OF CAR HEATING

DETROIT, May 10, 1909.

To the Editors:

The article in your issue of May 8, page 876, prepared by W. A. Evans, Commissioner of Health, Chicago, is a valuable addition to the limited supply of information with regard to heating and ventilating electric railway cars. It is noted that the author of the article quotes costs for car heating as issued some time ago by the Chicago City Railway, these figures totaling 73 cents per day as the cost for heating a city car in Chicago by electric heaters. The basis on which this figure evidently has been obtained is for operation during a nine-hour period, while we believe an 18-hour basis approaches more nearly actual operating conditions.

It may not be uninteresting to present figures which differ widely from those quoted by Dr. Evans and which,

COMPARISON OF COST OF HEATING A 25-FT. CAR, 45 FT. OVER ALL, BY HOT WATER AND ELECTRICITY, BASED ON OPERATING CONDITIONS ON A 32-MILE INTERURBAN RAILWAY.

Conditions.	Hot water.	Electricity.
Weight of car with load.....Tons	28	28
Schedule speed.....M.p.h.	20	20
Car-miles per day per car.....Miles	240	240
Cost of heating equipment installed.....Dollars	175	75
Weights of heating equipment installed.....Pounds	1400	225
Cost of electric power (at power station) per kw.....Dollars	.0135	.0135
Watt-hours at power station, per ton mile.....Watt-hrs.	125	125
Heating season.....Days	180	180
Hours per day heating.....Hours	18	18
Moving car equipment per ton-mile (at power station), Dollars	.0017	.0017
Moving heating equipment during heating season, per day.....Dollars	.306	.0459
Weight of heating equipment during summer.....Pounds	840	225
Moving heating equipment during summer day, per day.....Dollars	.18	.0459
Heater coal consumed per day.....Pounds	55	....
Cost heater coal per day at \$7.50 per ton.....Dollars	.206	....
Attendance for the season.....Dollars	9	2.70
Interest and depreciation at 10 per cent heating equip- ment.....Dollars	17.50	7.50
Repairs figured at.....Per cent	3	2
Cost of repairs.....Dollars	5.25	1.50
Increased feeders required.....	2.70	20
Yearly cost feeders, interest and depreciation, at 7½ per cent.....Dollars	6.06	37.50
Maximum current capacity of electric heater.....Amp	....	18
Average kw at station, electric heater.....Kw	....	5
Cost electricity per day, electric heater.....Dollars	....	1.21
Summary:		
Interest and depreciation on heater equipment.....	\$17.50	\$7.50
Repairs of heater equipment.....	5.25	1.50
Attendance.....	9.00	2.70
Interest and depreciation on extra feeders.....	6.06	37.50
Elec. hauling heating equipment for one year.....	88.70	16.75
Cost of coal consumed in one year.....	37.08	....
Cost of electricity used in heater for one year.....	....	217.80
Yearly cost.....	\$163.59	\$283.75
Difference in favor of hot-water heaters.....	....	\$120.16

contrary to his basis of figuring, show that a car can be heated more economically with hot water heaters than with electric heaters. With the idea in view of presenting

these figures to show that electric car heating costs far more than the amount cited by Dr. Evans, we submit the accompanying complete report of a test comparing under actual operating conditions the costs for heating the same type of car by hot water and by electricity. These tests were made by the Green Bay Traction Company, Green Bay, Wis., and are based on a small interurban car running at a schedule speed of 20 m.p.h. In the light of present costs, the charges in the hot-water column are high in some instances, but nevertheless the comparison of total charges shows a difference in the yearly cost of \$120.16 in favor of hot water heaters.

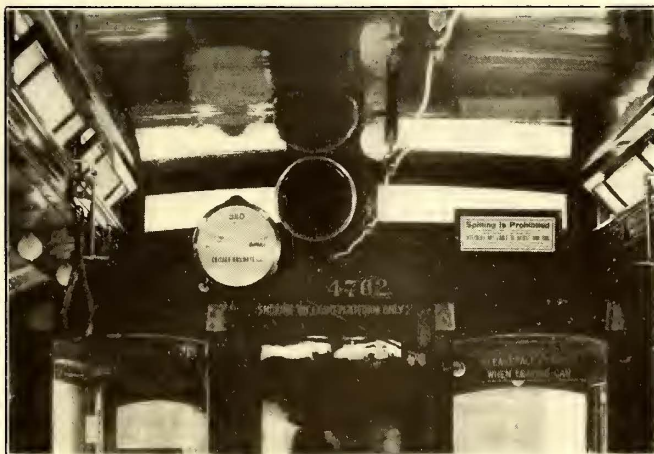
THE PETER SMITH HEATER COMPANY,  
Daniel W. Smith,  
President and Manager.

### STREET ANNUNCIATOR IN CHICAGO

The Curtain Supply Company, Chicago, Ill., has placed on the market a street annunciator which is intended to facilitate the announcement of streets and stations and to give the conductor better control of his car. It was devised especially for installation on cars of the prepayment type, but has proved so successful that it is now also recommended for use on elevated and subway trains and all other trains where fast schedules and frequent stops are necessary.

The annunciator consists of a metallic mouthpiece, a metallic conducting tube and a distributing horn. The mouthpiece, which is adjustable to any required height, is attached to the end of the tube in the vestibule. The tube extends up to the top of the vestibule and through the bulkhead into the car, where it joins with the horn, which may be made secure at any desired point within the car. The horn resembles the horn ordinarily used on a phonograph. By the aid of this device the voice of a conductor is intensified sufficiently to assure it being heard distinctly in all parts of the car.

The illustrations herewith presented show the annunciator as installed on one of the pay-as-you-enter cars of the Chicago Railways Company. It will be noted that the speaking tube is located on the rear platform at a height convenient for the conductor, and that the horn is fastened



Interior of Car, Showing Horn of Annunciator

to the bulkhead in one end of the car. This type of installation will undoubtedly be the most common in practice, but the manufacturers have provided other forms to meet different conditions. If desired, a mouthpiece and speaking tube can be placed on the front as well as the rear platform,

and the horn can be located near the center of the car. In either case all of the parts of the annunciator are painted the same color as the interior decorations of the car, and are not, therefore, unsightly. The device can be installed on any type of car.



Conductor Using Mouthpiece of Street Annunciator

It is claimed the device, when properly used, facilitates the unloading of passengers, tends to prevent patrons being carried past their destinations, eliminates the draft ordinarily caused by the opening of the doors to announce street intersections or stations, allows the conductor more time to collect fares and look after the comfort of passengers, and helps to make it possible to maintain an even temperature within the car.

### SEMAPHORE LIGHT FOR CITY CARS

The Trolley Supply Company, Canton, Ohio, maker of headlights and other lanterns for railway cars, is now offering for service on city cars the novel semaphore light shown in the accompanying illustration. This lamp is of sturdy construction and is recommended for use either as



Semaphore Light

a dash or signal light. The dimensions are as follows: Diameter, 11½ in.; depth, 6 in., and lens, 9 in. The lens usually furnished is white, but blue, green or red glass can be supplied if desired. The reflector is made of No. 18 gage, nickel-plated brass.

## ELECTRIC RAILWAY LEGAL DECISIONS

### CHARTERS, ORDINANCES AND FRANCHISES

**Indiana.**—Eminent Domain—Proceedings—Hearing as to Right to Take—Pleading—Conclusions—Facts to be Established by Plaintiff.

Act Feb. 27, 1905 (Acts 1905, p. 59, c. 48; Burns' Ann. St. 1908, § 933), relating to eminent domain, provides that a defendant may object to proceedings for condemnation on certain grounds, which objections shall be in writing, filed not later than defendant's first appearance, and, if the objections are overruled, the court or judge shall appoint appraisers, as provided in the act. Held that, by the objections provided for, a preliminary hearing may be had, at which the landowner may controvert plaintiff's right to condemn his land, and have all such questions determined and disposed of by the judge in vacation or the court in term time, before making the interlocutory order appointing appraisers to assess damages.

An allegation, in a complaint in eminent domain proceedings, "that the change of line of said road is desirable with a view to a more easy ascent and descent to and from the same," etc., is a conclusion, and not a statement of fact.

An allegation, in a complaint in proceedings under Act Feb. 27, 1905 (Acts 1905, p. 59, c. 48; Burns' Ann. St. 1908, § 929 et seq.), relating to eminent domain, that "plaintiff has been unable to agree with the owner for the purchase of said land for the purpose of such change in the highway," is not insufficient as a mere inference, since it employs the language prescribed by section 930, providing that if such person, etc., shall not agree with the owner of the land touching the damages sustained, he may file a complaint.

Act Feb. 27, 1905 (Acts 1905, p. 59, c. 48; Burns' Ann. St. 1908, § 929), relating to eminent domain, provides that any person, etc., having the right of eminent domain, before proceeding to condemn, shall make an effort to purchase the lands, etc. Section 933 provides that defendant may file objections to the proceedings, and if they are overruled the court or judge may appoint appraisers. Held, that a corporation proceeding under the act must establish, as preliminary to its right to demand that the court appoint appraisers, that it is a corporation which is invested with the right to exercise the power of eminent domain, and that it has made an effort to purchase the property sought to be taken, and it is error to appoint appraisers without that proof being made.—(Slider et al. v. Indianapolis & L. Traction Co., 85 N. E. Rep., 372.)

**Louisiana.**—Constitutional Law—Obligation of Contracts—Impairment—Ordinance—Police Power—Surrender—Right to Charges and Tolls—Right "to Regulate."

Corporations and individuals are entitled to the same protection under the contract clause of the Federal Constitution.

An ordinance granting a right accepted and acted upon by the grantee becomes an irrevocable contract. The right cannot be amended or diminished without the consent of the grantee.

It is generally true of governmental power, especially the police power, that it cannot be surrendered or alienated.

The power retained after the grant does not include the authority to repeal, change, or modify the right granted.

An ordinance, granting the right to a street railway company to run its cars on terms and conditions stated, by its acceptance confers a right, and thereafter the City Council cannot lower the fare to be charged over the objection of the company.

If it were to do so it would impair the obligation of the contract. *Cleveland v. Cleveland City R. R.*, 194 U. S. 517, 24 Sup. Ct. 756, 48 L. Ed. 1102; *Detroit v. Detroit*, 184 U. S. 368, 22 Sup. Ct. 410, 46 L. Ed. 592; *Knoxville v. Knoxville*, 189 U. S. 434, 23 Sup. Ct. 531, 47 L. Ed. 887.

The first authority cited directly reaffirms the other two; all three are pertinent. They announce the rule laid down by the Supreme Court of the United States.

In each of these decisions the agreement between the municipality and the street railway was treated as binding.

The right "to regulate" cannot be held to affect the contract right transferred by the ordinance and accepted by the company.

The contract in effect exempts the street railway from the municipal regulation of rates.—(*Shreveport Traction Co. v. City of Shreveport et al.* 47 S. Rep., 40.)

**Massachusetts.**—Evidence—Judicial Notice—Domestic Corporations—Organization—Corporations—Creation by Charter—Estopped to Question Constitutionality of Restrictions—Street Railroads—Organization Under General Law—Lawful Restrictions—Statutory Provisions—Estoppel—Unlawful Restrictions—Effect—Right of Municipal Authorities—Fixing Rates as a

Condition of Granting Location—Failure to Have Railroad Commissioner Revise Fares—Subsequent Legislation—Reasonableness of Regulation—Time Governing—Carriers—Regulation—Fares—Pupils in "Schools"—Who Are Included—Words and Phrases—"Pupils."

The courts will take judicial notice that a domestic street railway corporation was organized under the general law, and not under a special charter.

A corporation cannot question the constitutionality of a proceeding in accordance with the charter, which it was content to accept.

Pub. St. 1882, c. 113, § 2 et seq., relating to the organization of street railway companies, provided that 15 or more persons might associate to form a street railway corporation, that the directors named in the articles might petition to the local authorities of the cities or towns through which the road was to run, and these officers might refuse or agree to such locations under such restrictions as they deemed for the interest of the public, and upon acceptance of such locations under the restrictions, if any, by the directors named in the articles, the corporation could be established. Held, that the granting and acceptance of a location under such lawful restrictions as were imposed by the officers granting the location was a condition precedent to the granting of the franchise to be a corporation, and if the restrictions were originally lawful, and were not withdrawn or subsequently modified, the corporation cannot, while it continues to exercise its franchise, complain of the enforcement of the restrictions to which it consented.

If a restriction imposed by a municipality in granting a street railway location were unlawful, either because it requires the performance of a forbidden act or because without its scope of authority, such restrictions could not be enforced; for, while the location would be valid, the attempt to impose unlawful restrictions would be a mere nullity.

Pub. St. 1882, c. 113, § 43, provides for the fixing of fares by the directors of a street railway, section 44 provides that on certain applications the board of railroad commissioners shall revise and regulate fares, etc., and section 45 provides that nothing in the two preceding sections shall authorize a company or the board to raise the fare above the rate established "for a locality" by agreement made as a condition of location or otherwise, except by mutual agreement with the local authorities. St. 1898, p. 743, c. 578, § 13, in force Oct. 1, 1898, in effect withdrew the right of municipal officers to impose conditions regulating and restricting fares, but confirmed prior locations and continued them, subject to regulations or conditions in force. Held that, in view of the statutes, the municipal officers, granting a location under which a street railway was organized, prior to October, 1898, could impose restrictions as to fares not unlawful in themselves, and the reasonableness thereof could not be thereafter questioned by a street railway company organized on the basis of such location and restriction.

Where the reasonableness of restrictions imposed in granting a location to a street railway are questioned in an action, only their validity at the time they were originally imposed is to be considered.

The word "schools" is one of broad signification, and sometimes it may appear, by the connection in which it is used, to include higher institutions of learning; but ordinarily, and without something to indicate that a wider meaning was intended to be given to the word, it will not be taken to include higher institutions of learning, such as colleges, universities, or institutions for the teaching of trades, professions, or business; and where a street railway was, as a condition to a grant of a location, required to provide to pupils in attendance upon the public schools, the State Normal School of W., or any school in W., transportation at half price while going to and from school, neither a college nor a business institute in W. could fairly come within the language of the restriction.

The word "pupils," by derivation and the definition of lexicographers, is properly applicable to children and youth, and students in colleges and professional schools are not called pupils; hence students attending a college or business institute are not properly within the correct construction of the term, nor the meaning of the restriction in question.—(*Murphy v. Worcester Consol. St. Ry. Co.*, 85 N. E. Rep., 507.)

**Massachusetts.**—Street Railroads—Compelling Operation—Statutes—Retroactive Effect—Status—Duty to Operate—Licenses—Nature—Right to Abandon—Operation—Right to Discontinue—Railroads—Operation to Particular Point—Continuous Operation.

St. 1906, p. 302, c. 339, now St. 1906, p. 614, c. 463, pt. 3, § 76, provides, if a street railway voluntarily discontinues the use of any part of its tracks for six months, the streets

so occupied shall be cleared at the company's expense upon the order of the city, and if a street railway, without the right or lawful excuse, discontinues the use of any track and refuses to operate it when requested by the city, the Mayor may petition the Supreme Judicial Court to compel the company to resume the use thereof, but nothing contained herein shall be deemed a legislative construction of existing law or the impairment of existing rights to discontinue such use. Defendant street railway abandoned operation of a part of its road in 1905, before the enactment of the statute. Held, that a petition could be maintained under the statute to compel the company to resume operation, even though the statute was enacted after it had abandoned the road, as the statute did not affect any rights of the railway, but simply provided a new remedy for an unlawful discontinuance, and applied to past as well as future discontinuances.

Street railway companies are quasi public corporations organized for the exercise of an important public franchise, and bound to exercise the franchise for the benefit of the public, and not merely for their own profit.

As a bare license may, at any time, be revoked by the licensor, so the licensee may at any time wholly cease to avail himself of the permission given, and to discontinue his action thereunder, in the absence of an agreement to the contrary.

St. 1899, p. 264, c. 304, authorized respondent street railway to purchase the line it subsequently discontinued, and to complete the road and operate it, but did not compel it to do so. By St. 1864, p. 30, c. 53, incorporating respondent's predecessor, its right to lay its track upon the streets was subject to the determination of the Mayor, etc., of the cities, and those officers could, after one year from beginning operation, revoke the location and require the tracks to be removed, and neither respondent's charter nor that of its predecessor required it to continue the operation of its road. St. 1864, p. 160, c. 229, § 19, provided that, if a street railway voluntarily discontinued the use of its tracks for six months, the tracks should upon the order of certain city officials be removed from the streets. After the enactment of the latter act, commissioners appointed under Resolves 1864, p. 333, c. 86, in their report advised that further provisions to allow city railways to discontinue the use of their tracks were unnecessary, nevertheless the provisions of section 19 were substantially re-enacted by St. 1871, p. 735, c. 381, § 25, Pub. St. 1882, c. 113, § 25, Rev. Laws, c. 112, § 36, and St. 1906, p. 614, c. 463, pt. 3, § 76. St. 1891, p. 794, c. 216, substantially re-enacted by St. 1906, p. 619, c. 463, pt. 3, § 97, provides that whenever, in the opinion of the railroad commissioners, additional accommodations are required upon any street railway, they may make an order requiring such accommodations after notice and hearing, and Pub. St. 1882, c. 112, §§ 14, 17 giving the board of railway commissioners general supervision over all railways, provides that upon complaint and application of the Mayor, etc., of any city in which a railroad is situated, the board shall examine its condition, and 20 or more legal voters may request the Mayor to make complaint, and on his refusal they may present their complaint to the board, which shall make such order as is necessary. Respondent street railway discontinued the use of the whole of a branch line, over which it had operated for some years and which was built by its predecessor, and suit was brought under St. 1906, p. 614, c. 463, pt. 3, § 76, to compel it to resume operations; but the board of railway commissioners had made no order to that effect. The discontinued line did not produce receipts sufficient to meet its running expenses. Held, that the course of legislation contemplated that a street railroad might discontinue operations, subject to certain control by the public officials, and the discontinuance was not "without right or lawful excuse," within the statute.

If a charter of a railroad expressly requires it to operate its road as a continuous line, it may be compelled to do so, and if its charter requires it to construct its road and operate its cars to a certain point, which it has done, it may be compelled to continue to do so; but if the charter simply authorizes the corporation to construct its road to a certain point, without requiring it to do so, it cannot be compelled to complete or maintain its road to that point when it would not be remunerative to do so.—(Selectmen of Amesbury v. Citizens' Electric St. R. Co., 85 N. E. Rep., 419.)

**New York.**—Carriers—Carriage of Passengers—Refusal to Give Transfer—Penalties—"Aggrieved Party"—Fares—Amount of Fare—"Connecting Branch Thereof"—"Main Line of Road and Any Branch or Extension Thereof"—Statutes—Construction—Surrounding Conditions—Other Statutes.

Railroad Law, Laws 1892, p. 1406, c. 676, § 104, provides that a street railroad corporation operating different lines

of road under contracts shall carry between any two points on the lines embraced in the contracts any passenger desiring to make one continuous trip between such points for one single fare, and that the corporation shall give to such a passenger paying one single fare a transfer entitling him to a continuous trip, and that for every refusal to comply with the requirements of the section the corporation shall forfeit \$50 to "the aggrieved party." Held, that the section contemplates a person who enters on or continues a trip with the actual desire of getting to some place, and whose controlling purpose is interfered with by an unjust refusal to give him a transfer, and who therefore is defeated of his aim, and does not apply to a person who boarded a car merely to seek information as to the custom of the corporation to issue or not to issue transfers at a certain point over a certain route, which information he desired for use in litigation, and who had no definite purpose of going to any particular place, since he was not prevented by the refusal of a transfer from accomplishing all he had intended, and was therefore not an "aggrieved party."

Railroad Law, Laws 1892, p. 1405, c. 676, § 101, provides that no corporation constructing and operating a railroad under the provisions of the article shall charge any passenger more than 5 cents for one continuous ride from any point on its road, or on any road, line, or branch operated by it or under its control, to any other point thereof, or any connecting branch thereof within the limits of any incorporated city, and that not more than one fare shall be charged within the limits of any such city for passage over the main line of road and any branch or extension thereof, etc. Held, that the terms "connecting branch thereof" and "main line of road and any branch or extension thereof" contemplate an original or main line which by an off-shoot and tributary line has been extended, the two constituting a single continuous and connected line of road, and not two originally separate lines not constructed with reference to one another, which have become related simply because they have been taken into a general railroad system; and hence, where a street car line did not of itself directly connect with another line upon which a passenger took passage and paid his original fare, but had to be reached by passage over a third line, the latter was not a "connecting branch" of the first line, and he was not entitled to ride on it without payment of additional fare.

In construing a statute, it is proper to consider conditions existing when it was enacted, and which it may be assumed the Legislature intended to meet, and also other statutes relating to the same subject.—(Bull v. New York City Ry. Co., 85 N. E. Rep., 385.)

## MISCELLANEOUS

**Colorado.**—Negligence—Protection of Passengers from Other Passengers.

A common carrier is under the same strict obligation to protect a passenger from the negligence or wilful conduct of a fellow passenger that is to carry him safely.

Where a street railway passenger so carried a hoe that its handle caught under the hood of the forward car as it rocked up and down, and broke, hurling a piece back into the car and striking another passenger, the test of negligence by the carrier is whether, in view of the condition of the roadbed, the position of the trucks, and consequent rocking motion of the cars, and all the surrounding conditions, the conductor ought, as a reasonable man, to have anticipated or foreseen, as a natural and probable result of the way in which a passenger held his hoe, that this or a similar accident would likely happen.—(Farrier v. Colorado Springs Rapid Transit Ry. Co., 95 Pac. Rep., 294.)

**Florida.**—Railroads—Injuries to Licensees—Who Are.

A licensee is a person who is neither a passenger, servant nor trespasser, and not standing in any contractual relation to the railroad, and is permitted by the company to come upon its premises for his own interests, convenience or gratification.—(Gainesville & Gulf R. Co. v. Peck, 46 S. Rep., 1019.)

**Michigan.**—Damages—Pleading—Personal Injuries—Evidence—Sufficiency.

A declaration, in an action for injury to a street railway passenger, alleging that she was hurt, cut, bruised and injured in and about the face, head, body and shoulders, and was greatly injured and bruised internally, and in consequence thereof was sick, sore, lame, disordered and was seriously and permanently injured, and suffered a permanent injury to the spine, involving the spinal nerves, and that by reason thereof she suffered bodily pain, and will so continue to suffer, was sufficient to warrant the reception of evidence to show permanent injury to the uterus.

Evidence, in an action for personal injuries, held sufficient to warrant a finding that plaintiff's nerves were injured, and

that the trouble was organic, and not merely functional.—(Groat v. Detroit United Ry., 116 N. W. Rep., 1081.)

**Missouri.—Carriers—Street Railroads—Ejection of Passenger—Malice—Questions for Jury—Pleading—Scope of Complaint—Evidence—Opinion Evidence—Damages—Excessive Damages.**

Evidence held sufficient to warrant the submission to the jury of the question whether defendant street railroad's conductor, in ejecting plaintiff, a passenger, from a car, was insulting and abusive in his language and demeanor and acted with malice.

Where the complaint alleged that defendant street railroad company's conductor wrongfully refused to accept a transfer tendered by plaintiff, a passenger, accused the latter of attempting to defraud the company, and maliciously ejected plaintiff from the car, and that after plaintiff paid his fare and reboarded the car the conductor thereafter continued the charge in the presence of passengers that plaintiff had attempted to defraud defendant, the scope of the cause of action was broad enough to include insults offered during the entire period of transportation, and hence evidence as to what the conductor said after plaintiff returned to the car was admissible.

In an action against a street railroad for the wrongful ejection of a passenger from a car, accompanied by insulting and abusive language on the part of the conductor, it was proper for a witness to state that the conductor spoke sneeringly or angrily, and that his countenance bore a threatening or contemptuous aspect.

Plaintiff, accompanied by a woman, boarded defendant street railroad company's car and tendered the conductor transfers in payment of fare. The conductor refused to accept the transfers, saying that they were worthless, accusing plaintiff of trying to defraud defendant and threatening to put him off unless the fares were paid. Plaintiff thereupon paid the woman's fare, but refused to pay his own, and the conductor seized him and pushed him off the car, saying that he could not return without paying the fare. Plaintiff paid the fare and returned to the car, but the conductor continued to treat him in an insolent manner, saying: "Well, I put you off, didn't I? You feel a little better now, don't you?" etc. Held, that a verdict of \$250 punitive damages was not excessive.—(White v. Metropolitan St. Ry. Co., 112 S. W. Rep., 278.)

**Missouri.—Carriers—Injuries to Passengers—Street Railroad—Burden of Proof—Contracts—Construction—Lease—Affect—Evidence—Written Instruments—Sufficiency—Presumptions—Damages—Personal Injury—Excessive Damages—New Trial—Grounds—Res Ipsa Loquitur—Witnesses—Physicians—Competency—Appeal and Error—Review—Prejudicial Error—Evidence—Invited Error.**

Where plaintiff, who was injured in a collision between street cars, sued two street railroad companies, and charged that she suffered damages through the negligence of the servants of both, the burden was on her to prove such charge.

A street railway company contracted with another to lease its railway to the latter for forty years in consideration of a specified rent to be paid and the performance of certain duties in the nature of the restoration of the property at the end of the term and for re-entry in case of default. The contract did not provide that the lessee company should transact business in the name or for the benefit of the lessor, except in so far as the former was benefited by the consideration to be paid by the latter. Held, that the contract was a lease and relieved the lessor company from liability for torts committed in the operation of the road by the lessee's servants.

Where plaintiff introduced in evidence a lease from one of the defendant street railway companies to the other, plaintiff could not thereafter object that the lease was void because of defendant's failure to show municipal assent thereto required by Const., Art. 12, § 20 (Ann. St. 1906, p. 309).

Where a street railway company leased its line and property to another company, it must be presumed in the absence of evidence to the contrary that municipal assent to such lease required by Const., Art. 12, § 20 (Ann. St. 1906, p. 309) was obtained.

Plaintiff was injured in a street car collision. None of her bones were broken, and there was only a slight temporary discoloration outwardly visible. There were no discoverable lesions or known existing abnormal organs traced to the injury, but she lost considerable weight, and claimed to be suffering from locomotor ataxia or paralysis, affecting her ability to walk. A commission of doctors appointed by the court, however, testified that her trouble was traumatic neurasthenia and traumatic hysteria, and that she would probably recover. There was also evidence that she had

incurred indebtedness in the sum of \$1,000 for medical treatment and \$500 for drugs and medicines. Held, that a verdict awarding her \$18,000 was excessive.

Damages so great as to indicate passion or prejudice on the part of the jury are ground for new trial.

Where, in an action for injuries to plaintiff, a street car passenger, in a collision between the car on which she was riding and a following car, the petition counted on general negligence, plaintiff was entitled to the benefit of the doctrine *res ipsa loquitur*.

The statute declaring a physician incompetent to testify concerning any information acquired from his patient while attending him in a professional capacity, and which was necessary to enable him to prescribe or do any act as a surgeon, did not disqualify plaintiff's physician from testifying in her action for injuries that on one occasion when he went to her house to collect a bill he saw her walking about and go up a flight of stairs without crutches.

Where, in an action for injuries, defendant's chief contention was over the extent and permanency thereof and the amount of damages, and the whole trend of plaintiff's case was that she could not walk without artificial aid, the erroneous exclusion of evidence of plaintiff's physician that on one occasion he saw her walk about the house and go upstairs without crutches was prejudicial.

In an action for injuries defendant offered to prove by plaintiff's physician that on one occasion he saw her walking about the house and upstairs without artificial aid, an objection that the witness was incompetent having been overruled, defendant's counsel then stated: "This doctor has not been discharged as plaintiff's physician, but has continued to treat her and was, at the time of going to see her with reference to his bill." On such statement the objection was erroneously sustained. Held, that the statement made by defendant was not an invitation to the court to change its ruling on the objection so as to render the changed ruling invited error.—(Chlanda v. St. Louis Transit Co. et al., 112 S. W. Rep., 250.)

**New York.—Carriers—Injuries to Passengers—Assault by Conductor—Damages.**

A street car conductor called a passenger asking for a transfer a "Sheeny" and struck him in the face, causing his nose to bleed, necessitating his leaving the car. There were other passengers on the car, and he was a peaceable, law-abiding citizen, holding an important position with a manufacturing company. Held, that a verdict for \$500 was not excessive.—(Coorman v. Brooklyn Heights R. Co., 111 N. Y. Sup., 531.)

**Washington.—Carriers—Railroads—Operation of Cars—Transportation of Passengers—Performance of Contract by Carrier—Rights of Passengers—Trespassers—Ejection—Force—Questions for Jury—Assault by Servant—Scope of Employment.**

An electric railroad is not required to run all its cars the entire length of its line in the same direction, nor provide for the transfer of passengers from one car to another in the same direction, but may run its cars to such points or stations as will best serve its own convenience and the convenience of the traveling public, and require passengers to take such cars only as will transport them to their destination without change.

Where a passenger boarded an electric car going in the direction he desired to travel, but not to his destination, owing to his own mistake in taking the wrong car, he was required to leave the car on the conductor's request that he do so at the end of its journey, notwithstanding the conductor's refusal to give him a transfer to another car on which he might complete his journey for the same fare, and, on his refusal to do so, he became a trespasser subject to ejection.

Where a passenger became a trespasser on an electric car, the carrier's employees were entitled to use only such force as was reasonably necessary to eject him from the car in case he refused to leave of his own accord, and were not entitled to eject him while the car was in motion, so as to endanger life or limb, nor to wilfully or unnecessarily assault him.

Where, in an action for the ejection of a passenger from an electric car after he had become a trespasser, there was evidence that more force was used than was necessary, and a wilful and unprovoked assault had been committed, the weight of such testimony was for the jury.

Where a car greaser employed by an electric railroad company committed an assault on a passenger who had become a trespasser in endeavoring to eject him from the car, the greaser's act was not within the scope of his employment, so that the carrier was not responsible therefor, unless what was done was to assist the conductor, at his express or implied request.—(Mills v. Seattle R. & S. Ry. Co., 96 Pac. Rep., 520.)



# News of Electric Railways

## Cleveland Traction Situation

A report of the operation of the Municipal Traction Company, Cleveland, Ohio, for April, made on May 5, shows a surplus of \$68,444. The total deficit of the company from May, 1908, to January, 1909, amounting to \$229,678, has been reduced to \$71,047, and it is believed that the surplus for May will offset the deficit which now remains. As it is, the deficit from 3-cent-fare operation has been cleared up. The remainder came under the receivers while they were operating at the old rate. In three months of operation under the fare allowed by the franchises the receivers have cleared up the books and after the present month the surplus receipts will go to other funds. The report for April follows:

Gross earnings.....	\$509,487
Maintenance .....	\$96,010
Transportation .....	169,903
General .....	37,808
	303,721
Net earnings.....	\$205,766
Neutral Street Railway rental.....	\$936
Taxes .....	24,114
Interest rental.....	38,893
Dividend rental.....	73,378
	137,321
Surplus .....	\$68,444

At the meeting of the City Council on May 4 the treatment of the stockholders of the Forest City Railway in the event of settlement was discussed. Mayor Johnson insisted that they should lose nothing in case of a reduction in the valuation of the property of the Cleveland Railway from the figures reached a year ago. Horace E. Andrews, president of the company, stated that the companies had been consolidated and that it would be impossible to proceed with negotiations on any other basis than that all stockholders should be treated alike. The Mayor insisted that there had been no consolidation and that the Cleveland Railway is still bound by a gentlemen's agreement.

On May 5 Mayor Johnson issued a statement to the effect that he is willing to accept the finding of a board of arbitration on the value of the property of the Forest City Railway and the Cleveland Railway and to make an agreement in advance on that point. Mr. Andrews refused to make even a tentative statement until he had considered the matter. Mr. Johnson refused to give his reasons for changing his mind other than that representatives of both sides have the right to alter their opinions if they think they have been in the wrong. The opinion prevails that the Mayor desires to force a disagreement on the maximum rate of fare if a disagreement must result; and the expectation is that in this case the difference would be made a campaign issue this fall.

At the meeting on May 5 Mr. Andrews stated that it will be of little use to proceed further with the negotiations until an adequate maximum rate of fare is agreed upon. He read additional letters from representatives of Speyer & Company and N. W. Harris & Company, New York, stating that the bonds could not be handled to advantage with a maximum of seven tickets for 25 cents and that there is serious doubt whether they could be sold at all. The letters from these men also stated that the clause giving the city an option to take over the property would defeat the sale of bonds unless a sinking fund is provided and the city agrees to assume the payment of the bonds.

The City Council has voted that the members of the board of arbitration need not necessarily be residents of Cleveland. This will give a wider latitude for the selection of men who have the ability to consider a subject of this kind and render a valuation that will be fair to both the company and the city.

The receivers have put a large number of men to work on the various lines replacing wornout track and will continue the work until the money allowed by the court is exhausted. The receivers have a fund of \$552,000 and another distribution to the preferred claimants could be made if thought best by the court. Holders of bonds which become due in July may object to further distributions, however, until these obligations have been satisfied. Nothing has been made public regarding the manner in which this matter will be handled.

Mr. Andrews returned from New York on May 9 to resume negotiations on May 10, but Mayor Johnson telegraphed from New York that if he was not urgently needed by the City Council he would like to remain in New York a few

days. Later Mayor Johnson notified City Solicitor Baker that he would not return until May 18. The meeting originally set for May 10 was adjourned subject to the Mayor's call and Mr. Andrews returned to New York. The City Council was to have voted upon a maximum fare on May 10, but consideration of this matter was also postponed.

## Program for Meeting of Central Electric Railway Association

The regular meeting of the Central Electric Railway Association will be held at The Anthony, Fort Wayne, Ind., June 3. It is suggested to members living at a distance that the trip be made in special interurban cars, which will tend to increase the interest and make the trip one of immense value by personal observation. Members may invite any friends they wish to have present at this meeting. It is especially urged that electrical engineers and master mechanics attend. The program for the meeting follows:

### MORNING SESSION

10:00 a. m.—Business session and reports of special committees.

10:45 a. m.—Would Piece-Work System be Practicable and Profitable? Paper by J. A. Gohen, representing the Cleano Company, Indianapolis, Ind.

11:30 a. m.—Report of executive committee on Charges for Handling Equipment.

12:00 m.—Adjournment for luncheon.

### AFTERNOON SESSION

1:30 p. m.—Auditing Department. Paper by W. B. Wright, auditor, Indianapolis & Cincinnati Traction Company, Rushville, Ind.

2:30 p. m.—Description of Spy Run Power House. Paper by M. J. Kehoe, superintendent of power, Fort Wayne & Wabash Valley Traction Company, Fort Wayne, Ind.

3:15 p. m.—New Things for the Benefit of Our Members.

4:00 p. m.—Visit to Spy Run power house on Fort Wayne & Wabash Valley Traction Company's line.

A. A. Anderson, president of the Central Electric Railway Association, has made the following request:

"It has been suggested that it will add greatly to the interest of our meeting in Fort Wayne on June 3, if members attending will come prepared to tell of any new devices or appliances they have adopted, or of any new methods they have applied in operation, construction or equipment.

"Please let me know if you have 'anything new' to tell us about, and we will give you an opportunity to present the matter for the benefit of the 'Craft.'

"We are sure an exchange of ideas will be interesting and beneficial.

"Supply men who are members of the association are invited to display new apparatus or appliances, models or samples, and should make early application to the hotel management for space in rooms or corridors."

## Transit Affairs in New York

The Board of Estimate and Apportionment, to which the Public Service Commission referred the franchise grant of the Hudson & Manhattan Railroad which it has already approved, has referred the matter to a committee consisting of Comptroller Metz, President McGowan, of the Board of Aldermen, Borough President Ahearn and Chief Engineer Lewis, of the city, and ordered a public hearing on the application for May 14. The conditions of the grant have already been accepted by the Hudson & Manhattan Railroad.

To save work and expense in dealing with railroad franchises the Public Service Commission has proposed to the Board of Estimate that a uniform standard of franchise for street railways be adopted by the two bodies. The commission recommends that grants be for as short periods as possible to assure good service; that a scale of rates for compensation be established and that questions of repairs and allowances, which are similar in nearly all surface-car franchises, should be worked out on a uniform basis.

The Public Service Commission has reconsidered its action of a month ago, refusing approval of the franchise granted by the Board of Estimate and Apportionment for the building of an extension of the Union Railway in Pelham Avenue from Third Avenue at Fordham College east about 3000 ft. to the Southern Boulevard at the northern

entrance to the Zoölogical Park. The commission's refusal was based partly upon the fact that while the company applied for a franchise from the Southern Boulevard clear across the Bronx to Pelham Avenue and Sedgewick Avenue and across University Heights Bridge to Broadway in Manhattan, it proposed to build at once only the section east of Third Avenue. Commissioner Eustis, who wrote the opinion on which the commission acted, states in a supplemental opinion that he had become satisfied that the bondholders will not consent to the building of the complete line at present and that consequently only the section east of Third Avenue can be built. Frederick W. Whitridge, receiver of the company, has paid the \$52,000 consideration fixed by the commission for the franchise.

The Metropolitan Street Railway has sent a letter to the Public Service Commission regarding its 145th Street line, in which it says: "We are quite willing to continue to operate the 145th Street line, but we do not intend to subject ourselves any further to charges that we are operating in violation of law. We think that the present is the best time to determine the question whether the operation of the line shall be continued, and we shall be obliged if you will let us know whether in view of the facts stated in our letter to the Board of Estimate and Apportionment you consider that our operation on 145th Street is unlawful and should be discontinued. If that be your view and you are ready to assume the responsibility of directing us to cease operation we shall comply with your order, but we desire to have it distinctly understood that the responsibility for the cessation of operation rests on you and not on us." The letter has been referred to Commissioner Maltbie, who will hold a public hearing and then report back to the commission.

The Public Service Commission has received a petition of realty interests asking for the construction of a west side subway on what is known as the Seventh Avenue route from Times Square to the Battery. The petition has been referred to the special committee having subways under consideration.

**New York Electrical Show.**—The electrical show in New York will be held this year at the Madison Square Garden from Oct. 11 to 21. This is the third annual show of the kind. The directors of the show are: Arthur Williams, president; George F. Parker, vice-president and general manager; Dudley Farrand, secretary, and Walter Neumuller, treasurer.

**Massachusetts Railroad Commission Approves Cambridge Subway Plans.**—The Massachusetts Railroad Commission has formally approved the location and construction of the tracks, stations and approaches of the subway to be built in Cambridge by the Boston Elevated Railway between the Charles River and the Harvard Square district. Stations will be located at Kendall, Central and Harvard Squares.

**Lake Shore Electric Railway Offices Moved from Norwalk to Sandusky.**—The operating offices of the Lake Shore Electric Railway will hereafter be located in the Moore Building, Sandusky, Ohio, where quarters have been leased for a period of years. F. W. Coen, vice-president and general manager; L. K. Burge, general superintendent; A. C. Henry, auditor; Harry Rimelspach, claim agent; C. E. Mason, assistant claim agent; E. P. Denman, roadmaster; J. O. Mann, chief lineman, and A. V. Brown, engineer, will all have their headquarters in Sandusky.

**Technology Club House in New York.**—The new club house of the Technology Club of New York City, at 17 Gramercy Park, was opened with appropriate ceremonies May 7. The president-elect of the Institute of Technology, Dr. Richard C. Maclaurin, made an address and I. W. Litchfield, secretary of the second technology reunion committee, described the plans for the proposed Technology Reunion in Boston, June 7 to 9. The new club house is much more spacious and conveniently located for most Technology men than that formerly occupied on Twenty-eighth Street and adjoins the Princeton Club and the National Arts Club.

**Cleveland Subway Discussed.**—At a special meeting of the City Council of Cleveland on May 4, a difference of opinion arose as to whether the Cleveland Underground Rapid Transit Company, recently incorporated, should be granted a franchise covering both the proposed upper and lower level subways or whether separate franchises should be provided. The lower level subway would be largely for the use of the steam roads, while the upper subways would probably be used for city traffic. It is probable that the interurban cars may also be handled in the lower subway. A committee of the Chamber of Commerce will give its views to the City Council.

**Lecture on the New York Subway.**—On April 23 Frank Hedley, vice-president and general manager of the Interborough Rapid Transit Company, New York, addressed the Men's Forum of St. Andrew's Memorial Church, Yonkers, N. Y., his subject being the New York subway. Mr. Hedley stated that while the daily papers and citizens in New York often speak about the subway as being built with the money of the city, the interest on the bonds and all charges to the sinking fund by which these bonds will be retired are paid by the company. Mr. Hedley also described the generating and transmission system of the company, the development of the steel cars, the block signal system and other technical features of the line, and dwelt briefly upon matters like the proposed operation of special cars for women, which have attracted considerable attention recently.

**Meeting of the New England Street Railway Club.**—The regular monthly meeting of the New England Street Railway Club was held at the American House, Boston, on April 30. The usual technical program was dispensed with and the evening was devoted to a series of addresses on the work of the United States Navy. The guests of the club were Rear-Admiral William Swift, U. S. N., Commandant of the Boston Navy Yard and Naval Station; Colonel T. N. Wood, U. S. M. C., in command of the marines, Boston Navy Yard; Captain M. H. H. Sutherland, U. S. N., in command of the battleship *New Jersey* at the present time and also on the recent trip of the battleship fleet around the world, and Medical Inspector H. E. Ames, U. S. N., in command of the Naval Hospital at Chelsea, Mass. All spoke on naval topics at the conclusion of the banquet. About 150 members of the club and their friends were present.

**Electrification Plans of the New York, New Haven & Hartford Railroad.**—On page 702 of the issue of the *ELECTRIC RAILWAY JOURNAL* of April 1, 1909, it was mentioned that plans were under consideration by the New York, New Haven & Hartford Railroad for the electrification of the company's line between Stamford and New Haven. On May 10 the company issued the following statement regarding this matter: "In connection with the rumor relative to the extension of the electrification of the New York, New Haven & Hartford Railroad, preliminary estimates have been prepared and submitted for the information of the board of directors, and the entire matter is being considered by the board, but it is unlikely that any definite action will be taken or authority granted for some time. The extension is a work of very considerable magnitude, and the preparation of detail plans and specifications will consume considerable time before the actual work of construction is commenced."

**Exhaust Steam Turbine Discussed Before the Chicago Electric Club.**—At the weekly luncheon of the Electric Club of Chicago, on May 5, W. L. Stockton, manager of turbine sales of the Western Electric Company, discussed the exhaust steam turbine. He called attention to the very high heat economy obtainable by the use of a steam regenerator and exhaust steam turbine in connection with a reciprocating engine. The steam regenerator is a large shell in which a mixture of hot water and steam is held and into which the low-pressure cylinders of the reciprocating engine exhaust. The exhaust steam turbine takes its steam supply from the regenerator. With this large steam and water-holding capacity between the engine and the exhaust steam turbine the combination of units will readily absorb railway peak loads with economy, because the pressure in the regenerator decreases as the load increases and the hot water in the regenerator quickly supplies steam to maintain the overload on the turbine. Such regenerators have been built to carry the full load of moderate sized turbines for from four to eight minutes. Mr. Stockton did not claim that the exhaust steam turbine would increase the economy of all reciprocating engine plants, but said that the condenser problem is the determining factor, and that on this account and on account of the increased efficiency available in suitable installations, a thorough study of the possibilities of the exhaust steam turbine is warranted before increasing the engine capacity of any plant.

**Advertising Campaign of the Interborough Rapid Transit Company.**—Mention was made in the *ELECTRIC RAILWAY JOURNAL* of April 17, page 747, of the publication by the Interborough Rapid Transit Company in the daily newspapers of New York on April 13, of the first of a series of advertisements dealing with affairs of the company in which the public is interested. The first advertisement was entitled "What Chokes the Subway?" Since April 13 a number of other cards by the company have appeared in the press, perhaps the most important of which were entitled "The Safest Rapid Transit in the World." "It Costs

Seven Cents—You Pay Five," and "Four More Express Tracks for the Bronx." The very important fact was brought forcibly to public notice in the advertisement "The Safest Rapid Transit in the World," that more than 900,000,000 passengers were transported in the last two years by the company without a single fatality. In the advertisement "It Costs Seven Cents—You Pay Five" the company laid emphasis on the fact that it costs on the average 7 cents to carry every passenger that rides from the Bronx to the Brooklyn Bridge. As the company said, the long-haul loss is part of its business that must be met by short-haul profits, but that, short-haul and long-haul, its subway profits last year amounted to less than 6 per cent on cost. The advertisement "Four More Express Tracks for the Bronx" contained general reasons why the company should be granted the rights for which it has applied to build new lines.

**Meeting of the Detroit Committee.**—A meeting of the committee of 50 selected by Mayor Breitmeyer, of Detroit, to consider the terms of the extension of the franchise of the Detroit United Railway was held on May 3. The committee on extension and rearrangements made a final report. It recommends an increase in the mileage in Detroit from 195 miles to 270 miles, suggesting the construction of 57 miles of new double track and 26 miles of single track to make the present single track double. Only 9 miles of track now laid are recommended to be abandoned. Details are given of the routes which the committee thinks ought to be established so as to improve the service when the new lines which it has recommended are placed in operation. In considering the future transit needs of the city, the committee calls attention to the growth of the city as a manufacturing center and to the poor arrangement of the streets in different parts of the city and to the multiplicity of grade crossings. It recommends that the construction of a subway along Jefferson Avenue and Woodward Avenue to care for the Bell Isle and State Fair traffic be considered at once. The committee on paving and taxes presented data on some of the subjects which it has already considered, and announced that at a meeting in the near future it proposes to present additional figures on the cost of repaving and renovating the tracks of the 3-cent fare line. The committees on appraisal, municipal ownership and legal matters announced that their final reports will not be ready for presentation to the committee of the whole for 60 days. The members of the committee that visited Cleveland recently to study operating conditions in that city expressed their views individually. The opinion is that actual conditions in Cleveland disprove the statements made by municipal ownership advocates in Detroit regarding the results obtained in Cleveland during the short experiment there.

#### LEGISLATION AFFECTING ELECTRIC RAILWAYS

**Connecticut.**—The supporters of the public utilities bill in the House succeeded on May 5 in fighting off a vote to reconsider the vote to refer the bill to a special committee. On May 6 the point was decided, based on a ruling of 1897, that the adjournment in the midst of debate did not end the legislative day. The motion to reconsider being before the House, Representative Burns forced a roll-call vote, which was carried affirmatively, 124 to 95. A resolution was then carried naming a joint committee to frame a new bill without delay. The Senate had adjourned for the week, however, before the matter could be presented before that body.

**Massachusetts.**—The reports of committees on matters of interest to street railways are now largely finished. One of the important measures pending in the House provides for a report by Jan. 10 by the Railroad Commission and the Boston Transit Commission acting as a joint board on the desirability of constructing additional subways, tunnels and elevated structures in Boston. Twelve petitions and proposed bills were given hearings by the committee on metropolitan affairs prior to the recommendation for a joint report. All relate to proposed new subways or tunnels, or to the use of existing subways or tunnels in Boston, and one relates to the necessity and the cost of construction of a tunnel or subway between Boston and Chelsea. If the resolve passes both branches the question of future transportation developments in Boston will be left open for action next year. After a public hearing and various conferences the joint board of the Railroad Commission and the Boston Transit Commission has reported to the Legislature that in view of the pending resolve for a general investigation of the transit bills, and a resolve for a similar investigation into various financial and corporate questions affecting the Boston Elevated Railway in particular, with an important bearing on the whole question of transportation within the metropolitan district, it would be more desirable to consider the application of the Bos-

ton & Eastern Electric Railroad to construct a tunnel under Boston Harbor in connection with the anticipated forthcoming study of the whole situation by the joint board than as a single transportation problem. The joint board states that if the resolves before mentioned do not pass, or if the Legislature should desire that a bill be drawn up in favor of the Boston & Eastern Electric Railroad containing the necessary safeguards and restrictions, the board will endeavor to comply promptly with such a request. The past or future action of the Railroad Commission with respect to the public convenience and necessity of this project is not prejudiced by the report sent this week by the joint board to the Legislature, but the project is now before the Senate and House for decision whether present action or postponement shall take effect at the current session. The Senate has given a first reading to the adverse report of the committee on taxation regarding the so-called Dean bill purporting to provide for a more equitable distribution and system of taxation for corporations. The Senate bill to change the date when stockholders in railroads and street railways may subscribe for new stock has passed the Senate to be enacted. The bill to allow the Connecticut Valley Street Railway to fund its floating debt has been passed to be engrossed by both the Senate and House, and will probably be laid before the Governor within a few days. The committee on taxation has reported favorably the Fairbanks petition and bill providing for the taxation of poles and wires erected on private property by private corporations. This bill provides for the assessment of underground conduits, wires and pipes laid in streets or private property or on a railroad by any corporation except a railway company. It also provides for the deduction from the corporate franchise valuation of a railroad, telegraph or street railway of so much of its capital stock as is proportional to that part of the line outside the State, as stated in the acts of 1902, and for deduction of the value of real estate, machinery, underground conduits, poles, wires and pipes subject to local taxation within the State. In the existing law the item of poles was not deducted from the franchise valuation in making assessments, and this measure if passed will tend to reduce the dangers of over-taxation through the omission or the withdrawal of important portions of the physical plant of street railways and other public utility corporations. The committee report has been received by the House and given a first reading. The bill to provide for a consolidation of the properties and franchises of the Boston Elevated Railway and the West End Street Railway has been passed to be engrossed by the House.

**Missouri.**—The House passed the Wade public utilities bill on May 5 by a vote of 72 to 59. The fate of the bill in the Senate is uncertain. It is a drastic measure in many respects, supplanting the public utilities commissions of St. Louis and Kansas City, created by the last Legislature, and appointed by the mayors of the respective municipalities. It also abolishes the Railroad & Warehouse Commissioner and places in the hands of five men, to be named by the Governor, power equal, as far as State utilities are concerned, to that possessed by the Interstate Commerce Commission to regulate national utilities. Governor Hadley has promised to appoint as members of the commission the three present members of the Railroad & Warehouse Commission, two of whom are Democrats. The bill carries an appropriation of \$75,000. Each commissioner is to receive \$3,500 annually and the secretary \$2,500.

**Pennsylvania.**—Governor Stuart has signed the Murphy bill providing for connections between the tracks of steam railroads and electric railways and the interchange of both passenger and freight cars over such connected tracks, provided consent is secured from local authorities, which is made revocable after 10 years. The Shields bill, which the Governor has also signed, gives street railways the right to transport all kinds of freight, subject to consent of local authorities, and is revocable after 10 years. Among the bills of interest to electric railways which the Governor has vetoed are the Bentley boiler inspection bill, the measure providing that "any foreign corporation registered in this commonwealth may purchase, hold or acquire not more than 1000 acres of land within this commonwealth in its corporate name and in the transaction of its business"; the Wertz bill, extending the authority of the Courts of Common Pleas over the disputes as to the reasonableness of the amount of license fees "names in any ordinance of a municipal corporation for the inspection and regulation of the poles, wires, cables, conduits, pipes and other instrumentalities under its police powers," to water, gas, natural gas and other companies and corporations occupying said public highways, thereby including electric railway companies, and the bill for the incorporation of motor omnibus companies for the purpose of carrying passengers for hire.

# Financial and Corporate

## New York Stock and Money Market

May 11, 1909.

For another week the stock market has been strong in tone and fairly active. The better condition of industrial business, the increase in railroad earnings and the general feeling of optimism as to the future are responsible for a strength with which no existing reactionary element can compete successfully. While the trend of prices is upward the traders take in profits at every advance. The traction stocks have been fairly active with trifling price changes.

Money continues easy and cheap. To-day's quotations were: Call, 1½ to 2 per cent; 90 days, 2¾ to 3 per cent.

It is certain that continued improvement in business will lead to greater absorption of funds for manufacturing and mercantile purposes, which will be reflected in increasing demands for funds and, eventually, higher rates.

### Other Markets

In the Boston market, tractions were inactive with prices practically unchanged.

In the Philadelphia market, traction shares were the absorbing feature, due to the abandonment of the sale of six tickets for 25 cents. During the last week Rapid Transit has shown a tendency to decline on heavy transactions. From the high point of 36½ the stock sold off to 31¼. To-day large interests came forward with supporting orders and the market closed at 33. Union Traction also sold 3 points lower during the week.

With the exception of Subway, there has been little trading in tractions in Chicago. This stock advanced to a new high record, 28½. Kansas City Railway & Light has been in evidence to some extent.

Heavy transactions in the bonds of United Railways marked the Baltimore market. Prices were a trifle stronger. A few blocks of stock were sold at 11½ to 12.

Among the New York sales of securities at auction last week were \$90 Lexington & Eastern scrip, 30½.

Quotations of various traction securities as compared with last week follow:

	May, 4.	May 11.
American Railways Company.....	45½	45½
Aurora, Elgin & Chicago Railroad (common).....	*45½	a37½
Aurora, Elgin & Chicago Railroad (preferred).....	*38½	a87½
Boston Elevated Railway.....	129	128½
Boston & Suburban Electric Companies (common).....	*15	*10
Boston & Suburban Electric Companies (preferred).....	72	72
Boston & Worcester Electric Companies (common).....	12	12
Boston & Worcester Electric Companies (preferred).....	56½	a58
Brooklyn Rapid Transit Company.....	78½	79¾
Brooklyn Rapid Transit Company, 1st ref. conv. 4s.....	86½	87½
Capital Traction Company, Washington.....	137	135½
Chicago City Railway.....	*190	*190
Chicago & Oak Park Elevated Railroad (common).....	*4½	*4½
Chicago & Oak Park Elevated Railroad (preferred).....	*11	*11
Chicago Railways, ptctg. ctf. 1.....	a110	*110
Chicago Railways, ptctg. ctf. 2.....	*38	*39
Chicago Railways, ptctg. ctf. 3.....	a28	*28
Chicago Railways, ptctg. ctf. 4s.....	*11½	*9½
Cleveland Electric Railway.....	*78	*78
Consolidated Traction Company of New Jersey.....	a77½	a78
Consolidated Trac. Co. of N. J., 5 per cent bonds.....	a107¼	a107
Detroit United Railway.....	*57	*57
General Electric Company.....	159¼	159½
Georgia Railway & Electric Company (common).....	84	85
Georgia Railway & Electric Company (preferred).....	84	*84
Interborough-Metropolitan Company (common).....	*16½	16½
Interborough-Metropolitan Company (preferred).....	46¾	46
Interborough-Metropolitan Company (4½s).....	80	79½
Kansas City Railway & Light Company (common).....	*52	49¼
Kansas City Railway & Light Company (preferred).....	*83	85¼
Manhattan Railway.....	144¾	146
Massachusetts Electric Companies (common).....	14	a14½
Massachusetts Electric Companies (preferred).....	71	a71½
Metropolitan West Side, Chicago (common).....	a19	*19
Metropolitan West Side, Chicago (preferred).....	a50½	*50½
Metropolitan Street Railway.....	*26	*26
Milwaukee Electric Railway & Light (preferred).....	*110	*110
North American Company.....	83¼	83
Northwestern Elevated Railroad (common).....	a24	*24
Northwestern Elevated Railroad (preferred).....	a71	*71
Philadelphia Company, Pittsburg (common).....	43½	a43½
Philadelphia Company, Pittsburg (preferred).....	43	a44
Philadelphia Rapid Transit Company.....	35¾	a33
Philadelphia Traction Co.....	94	93
Public Service Corporation, 5 per cent col. notes.....	a100½	a100¾
Public Service Corporation, cfs.....	a84½	a86½
Seattle Electric Company (common).....	*91	*91
Seattle Electric Company (preferred).....	a98	*99
South Side Elevated Railroad, Chicago.....	a57	*60
Toledo Railways & Light Company.....	12¾	9
Third Avenue Railroad, New York.....	34½	33¾
Twin City Rapid Transit, Minneapolis (common).....	103	103½
Union Traction Company, Philadelphia.....	58	56¾
United Railways & Electric Company, Baltimore.....	12¼	a12
United Railways Inv. Co., San Francisco (com.).....	37¼	35
United Railways Inv. Co., San Francisco (pf.).....	57¾	56¼
Washington Railway & Electric Company (com.).....	a41¾	a42
Washington Railway & Electric Company (preferred).....	a92½	a92½
West End Street Railway, Boston (common).....	a98	a95
West End Street Railway, Boston (preferred).....	*111	109
Westinghouse Electric & Manufacturing Company.....	83¼	83¾
Westinghouse Elec. & Mfg. Company (1st pref.).....	120	a120

aAsked. Last sale.

## Report of Chicago Railways Company for February and March

The Chicago (Ill.) Railways Company has made public its earnings for February and March, 1909, and its balance sheet as of March 31, 1909. The earnings of the company for February follow:

	1909.	1908.
Receipts from passengers.....	\$850,200	\$742,826
Other income.....	20,520	16,116
Gross receipts.....	\$870,720	\$758,942
Expense.....	624,247	564,837
Balance (actual).....	\$246,472	\$194,104
Balance (based on 30 per cent for operation).....	\$261,216	\$227,682
Deduct interest 5 per cent on valuation.....	162,530	135,787
Net income.....	\$98,685	\$91,894
Division of { City of Chicago, 55 per cent.....	\$54,277	\$50,542
net income { Chicago Railways, 45 per cent.....	44,408	41,352

The earnings of the company for March follow:

	1909.	1908.
Receipts from passengers.....	\$963,655	\$840,743
Other income.....	22,272	16,989
Gross receipts.....	\$985,927	\$857,732
Expense.....	690,909	608,310
Balance (actual).....	\$295,017	\$249,422
Balance (based on 70 per cent for operation).....	\$295,778	\$257,319
Deduct interest 5 per cent on valuation.....	166,310	136,064
Net income.....	\$129,467	\$121,254
Division of { City of Chicago, 55 per cent.....	\$71,207	\$66,690
net income { Chicago Railways, 45 per cent.....	58,260	54,564

The balance sheet of the company as of March 31, 1909, follows:

ASSETS		
"A" purchase price:	Represents price that the city of Chicago would have to pay for property of company if same was taken over for municipal operation by city, under terms of ordinance....	\$41,165,209
"B" purchase price:	Value of merged assets of predecessor companies in addition to city purchase price.....	5,851,554
Treasury securities.....		252,642
Cash in banks and on hand.....		5,998,576
Accounts receivable.....		734,483
Advance rents and insurance premiums.....		23,610
Income accrued treasury securities.....		15,716
		\$54,041,790
LIABILITIES.		
Capital stock.....		\$100,000
First mortgage bonds, 5 per cent, due 1927.....		14,000,000
Consolidated mortgage bonds, "A" 4, 5 per cent, due 1927.....	\$18,600,000	
Less collateral to notes.....	9,265,200	
		9,334,800
Consolidated mortgage bonds, "B" 4, 5 per cent, due 1927.....	\$17,194,000	
Less on hand in treasury.....	\$255,900	
Less reserved by trustee.....	29,525	283,425
		16,910,575
Consolidated mortgage bonds, "C" 4, 5 per cent, due 1927.....	\$3,593,845	
Less on hand in treasury.....	\$203,806	
Less reserved by trustee.....	333,398	537,204
		3,056,640
Collateral notes:		
Union Trust Company, 6 per cent, due 1913.....	\$5,000,000	
Less on hand.....	224,000	
		\$4,776,000
First Trust & Savings Bank, 5 per cent, due 1913.....	498,000	
Union Trust Company, 6 per cent, due 1913.....	1,200,000	
		6,474,000
Reserve for damages.....		834,124
City of Chicago, 55 per cent net earnings.....		739,290
Vouchers unpaid.....	\$1,221,526	
Pay rolls unpaid.....	311,119	
Miscellaneous.....	115,395	
		1,648,040
Accrued interest, bonds, notes, taxes.....		944,321
		\$54,041,790

### Consolidation of Chicago Elevated Railroads

The committee composed of Ira M. Cobe, E. K. Boissot and Samuel Insull presented the plans for the consolidation of the Northwestern Elevated Railroad, South Side Elevated Railroad and the Metropolitan West Side Elevated Railway upon which it has been at work, to the executive committee of the three companies at a meeting on May 17. Briefly, the plan is to form a corporation to be known as the Central Terminal Company, which will purchase outright the Union Elevated Loop and will have a paid-in capital of \$4,000,000 to guarantee the payment of rentals ranging from 3 per cent to 5 per cent to the separate companies entering into the consolidation. In the case of the Chicago & Oak Park Elevated Railroad, it will be required to elevate its track through Austin before the property is taken over by the Central Terminal Company. The rental to be paid the South Side Elevated Railroad begins at \$300,000 for the first year, 1910, and gradually increases until 1921, when the rental reaches the sum of

\$500,000, at which rate it continues during the term of the lease, which it is proposed shall run as long as the existing franchise rights of the company. The Central Terminal Company is to pay interest on existing bonds and on such bonds as may be necessary to retire the floating indebtedness and the car equipment notes. Interest on all extension and improvement bonds which may be issued shall be paid by the terminal company as additional rental. For the purpose of consolidation, the Northwestern Elevated Railroad and the Chicago & Oak Park Elevated Railroad have been considered as one property by the committee, as the interests which control the companies are the same or closely allied. The Central Terminal Company will pay \$200,000 the first year, or 4 per cent on the preferred stock of the Northwestern Railroad, and \$250,000 thereafter, or 5 per cent on the stock. An additional amount is guaranteed the two companies after the first two years, beginning in 1912 with \$50,000, and increasing to \$350,000 in 1921 and thereafter. The terms on which the Central Terminal Company will take over the Metropolitan West Side Elevated Railway were not submitted at the meeting. Following are the essential provisions of the proposal submitted:

"A corporation will be formed, to be called the Central Terminal Company or some other name to be hereafter selected, which will lease and operate the lines of the elevated companies, paying the rental as hereinafter mentioned.

"The terminal company will have at least \$4,000,000 of cash paid-in capital, and in addition thereto will acquire what is known as the downtown loop.

"The terminal company will agree that \$4,000,000 of its cash paid-in capital shall be expended only for the acquisition by it through construction, purchase or otherwise, of plant, equipment or other property for use in its business, and that until so expended such fund shall not be used except that it may be invested in marketable interest-bearing securities.

"Each lease shall continue for such time as the lessor's lines in the city of Chicago may be maintained and operated under existing ordinance rights and such additional ordinance rights as may be hereafter obtained. Each lease shall include all the physical property of the lessor company, including rolling stock, elevated structure, power plants, transmission lines, lands, buildings and all miscellaneous equipment, tools and supplies.

"The rental under each lease will be paid quarterly or at such other times as may be agreed upon in order to enable the lessor to promptly meet its interest payments on bonds.

"All costs of operation, repairs and replacements and all damages, taxes and legal expenses accruing during the term of the lease shall be paid by the terminal company.

"Each lessor company shall agree to make from time to time such extensions of and improvements to its lines as may be requested by the terminal company, subject, however, to such conditions as may be agreed upon and stated in the lease. To cover the cost of such extensions and improvements the lessor company shall issue its bonds to be purchased by the terminal company, or otherwise, as may be agreed upon in the lease."

#### Report of Liverpool Corporation Tramways

The annual report of the general manager of the Liverpool Corporation Tramways for 1908 shows decreases in the gross receipts and the number of passengers carried in the year, as compared with 1907, of 1.7 per cent. The total passenger traffic receipts amounted to £563,144, a decrease of £9,678. The total revenue was £591,193. Operating expenses, including rental of leased lines, amounted to £407,072, or 68.9 per cent of the total revenue, as compared with 67.6 per cent in the previous year. Interest and sinking fund requirements were £109,547. The charge for reserve, renewal and depreciation was £49,716. The balance after provision for these deductions was £24,858.

The number of passengers carried was 121,927,883, a decline of 2,115,356. The number of car-miles run was 12,244,353. The average earnings per car-mile were 11.04d., as compared with 11.24d. in the preceding year.

C. W. Mallins, the general manager, attributes the decline in the receipts principally to the great depression in trade experienced during the year. An additional factor in the discrepancy was the extra traffic in 1907, due to celebrations. Under these circumstances the car-mileage was reduced considerably. Observations were also taken of the Sunday traffic, which showed that a considerable amount of unremunerative mileage was run, and it was decided that all mileage which did not amount to 6d. per mile should be eliminated and the time-tables recast accordingly. Following this rearrangement, the car-mile earnings

of the week-day traffic have increased 0.08d. and of the Sunday traffic 0.10d. per car-mile.

The Tramways Benefit Society had a total income in the year of £3,930 and expenditures of £3,504. A scheme has been adopted for providing retirement allowances to members of the benefit society; a fund for this purpose was started by the transfer of £3,000 from the surplus of the society.

**Berkshire Street Railway, Pittsfield, Mass.**—The Massachusetts Railroad Commission gave a hearing on May 10 on the application of the Berkshire Street Railway to issue \$248,000 in debenture bonds, the proceeds to be expended for a cut-off at Cheshire Harbor, Mass., a trestle fill near Farnham station and for reducing the floating debt. The application was not opposed and the board took the case under advisement.

**Camden & Suburban Railway, Camden, N. J.**—Cramp, Mitchell & Shober, Philadelphia, Pa., are prepared to exchange first mortgage 5 per cent bonds of the Camden & Suburban Railway, dated 1896, and due July 1, 1946, for the \$250,000 of first mortgage 5 per cent bonds of the Camden Horse Railroad, maturing May 1, 1909, on a basis of 105 and interest for the 5 per cent bonds of the Camden & Suburban Railway and par for the 5 per cent bonds of the Camden Horse Railroad, subject to previous sale or change in price.

**Coney Island & Brooklyn Railroad, Brooklyn, N. Y.**—A hearing was held before the Public Service Commission of the First District of New York on May 6 on the application of the Coney Island & Brooklyn Railroad for permission to issue \$350,000 of bonds for the purpose of providing funds for improvements. Commissioner Bassett, before whom the hearing was held, asked the company how a delay by the commission in granting consent might affect the reconstruction work which the company has under way. J. J. Kuhn, for the company, said that the company would continue to make improvements to the property out of earnings as far as it could do so, but is anxious to have the sanction of the commission as soon as possible so that the issue of new securities may be underwritten to the best advantage. Mr. Bassett said that he would probably recommend that the track on Franklin Avenue be relaid by the company and that the company be given a long period in which to do the work, but that meanwhile the company be instructed to repair the track so as to alleviate the conditions about which residents along the line have complained.

**Dayton & Xenia Traction Company, Dayton, Ohio.**—Judge Thompson, of the United States Circuit Court, has ordered the sale of the property of the Dayton & Xenia Traction Company on June 3. The upset price is \$400,000. Each bidder will be required to deposit \$20,000 in cash or \$35,000 in first mortgage bonds of the company. The successful bidder will be required to deposit \$40,000 in cash or \$75,000 in first mortgage bonds of the company.

**Gainesville (Ga.) Electric Railway.**—At the recent sale of the property of the Gainesville Electric Railway under foreclosure the bondholders bid \$80,000. Gen. A. J. Warner, however, bid \$90,000 and was given until April 17 to deposit the required \$10,000 with the receiver. This he has since done, and the court has directed the receiver to re-advise the property for sale on June 1.

**Georgia Railway & Electric Company, Atlanta, Ga.**—Curtis & Sanger, Boston; Blodget, Merritt & Company, Boston, and Spencer Trask & Company, New York, have recently sold \$1,000,000 of Georgia Railway & Electric Company refunding and improvement sinking fund 5 per cent gold bonds dated January, 1909, and due January, 1949, at 96 and interest. These bonds are part of an authorized issue of \$20,000,000. A sufficient amount of the \$20,000,000 issue will be reserved to retire all underlying bonds amounting to \$11,000,000. The balance can be issued from time to time to pay for improvements and extensions up to 75 per cent of the actual cost. The issue of \$1,000,000 was made to take up floating debt and improvements.

**Havana (Cuba) Electric Railway.**—Gross earnings of the railway and stage properties of the Havana Electric Railway in 1908 were \$2,276,807, an increase of \$133,685 over 1907. The railway operations alone resulted as follows: Gross earnings, \$1,937,797; operating expenses, \$971,725; net earnings, \$966,072. Adding the net earnings of \$64,311 derived from the stages, the result is \$1,030,383. Fixed charges and taxes were \$451,000, leaving a balance of \$579,383. Havana transfer office and miscellaneous expenses were \$3,781, leaving a net divisible income of \$575,602. From this amount there were deducted \$299,998, or 6 per cent dividends on the preferred stock and \$74,637, or 1 per cent dividend on the common stock, leaving a

surplus of \$200,967. The number of miles of railway operated was 50 and the operating ratio was 50.15 per cent.

**Hudson & Manhattan Railroad, New York, N. Y.**—The Hudson & Manhattan Railroad has increased the number of directors from 9 to 11 and has elected Richard W. Meirs, Philadelphia, and Frank O. Briggs, Trenton, N. J., as new members of the board. There is still a vacancy on the board. The officers of the company have all been re-elected. Harvey Fisk & Sons, New York, having placed \$9,000,000 of the total of \$10,000,000 of 6 per cent secured convertible gold coupon notes due Oct. 15, 1911, are offering the remainder at par and interest. Interest is payable on April 15 and Oct. 15. The Standard Trust Company, New York, is trustee, and the denomination of the notes is \$500 and \$1,000. They are redeemable at the option of the company at 100 and interest on any interest date upon 30 days' notice.

**Meadville & Conneaut Lake Traction Company, Meadville, Pa.**—Charles Fahr and G. A. Gaston have been appointed receivers of the Meadville & Conneaut Lake Traction Company.

**Metropolitan Street Railway, New York, N. Y.**—Judge Lacombe, of the United States Circuit Court, has adjourned the sale of the property of the Metropolitan Street Railway under foreclosure from June 1 to June 29, on the petition of the Guaranty Trust Company, New York, which is trustee for the mortgage under which foreclosure proceedings were begun. It is the intention of the Guaranty Trust Company to appeal to the United States Circuit Court of Appeals from the decree ordering the foreclosure sale. The United States Circuit Court of Appeals does not convene until May 17. The appeal and the request for adjournment are understood to be in connection with the proposed reorganization of the Metropolitan Street Railway.

**Middlesex & Boston Street Railway, Framingham, Mass.**—This company has asked the Railroad Commission to approve an issue of \$822,000 additional capital stock, for use in consolidating the Middlesex & Boston Street Railway and the Newton Street Railway. A petition has also been presented to the commission for the approval of the consolidation of the companies.

**North Carolina Public Service Company, Greensboro, N. C.**—W. N. Coler & Company, New York, in whose interests the North Carolina Public Service Company was recently organized with a capital stock of \$3,500,000, all common, under a special act of the Legislature of North Carolina, have issued a circular about that company, which has recently taken over the property of the Greensboro (N. C.) Electric Company. Coler & Company say that they have purchased all of the property of the Greensboro Electric Company, which includes the gas plant and distributing system, electric light and power station and transmission lines and an electric railway in Greensboro embracing 11½ miles of track. It is proposed under the new management to discontinue the operation of the present electric plant at Greensboro and to take power from the Southern Power Company, owned and controlled by James B. Duke, of the American Tobacco Company, the plan being to reserve the present steam plant in Greensboro for emergency service. Coler & Company say that the street railway at Greensboro can be extended advantageously, and that additional cars are needed to give prompt service. A feature of the plan proposed for the new company is the construction of an interurban connection between Greensboro and High Point, about 12 miles distant, and between Greensboro and Winston-Salem, 24 miles distant. The circular says regarding new securities: "The new bonds (\$3,500,000) will be first mortgage on the interurban railway connecting Greensboro, High Point and Winston-Salem, on the gas plant and distributing system of High Point, on the electric light and power plant at High Point, a first mortgage on all extensions, tracks, cars, transmission lines and apparatus installed by the new company in Greensboro, and a refunding mortgage on all the property of the present company. The holders of over one-half the present bonds of the Greensboro Electric Company have signified their willingness and desire to exchange their present bonds for bonds of the new company, and it is our belief that within a year or less all of the prior liens will be retired and that these bonds will be an absolute first mortgage on the entire property. The trust deed securing this issue of bonds has been carefully prepared in order to safeguard these bonds and provide sufficient funds to care for the future development of the property." The probable directors and officers of the company are: L. H. Hale, president; Bird S. Coler, vice-president; L. H. Hale, Jr., secretary and treasurer; E. P. Wharton and Z. V. Taylor.

**Philadelphia Company, Pittsburgh, Pa.**—The pamphlet report of the Philadelphia Company for the year ended March

31, 1909, shows gross earnings of \$16,554,593; operating expenses and taxes, \$8,664,860; net earnings, \$7,889,733; other income, \$265,546; total income, \$8,155,279; deductions from income, \$1,425,301; net income, \$6,729,978; fixed charges, \$3,366,572; net income, after deducting fixed charges, \$3,363,405; improvements and betterments and notes issued April 1, 1905, and car trust notes issued Dec. 1, 1905, all retired, \$895,353; surplus, \$2,468,052; dividends on preferred stocks, \$382,921; balance, \$2,085,131.

**Rio de Janeiro Tramway, Light & Power Company, Rio de Janeiro, Brazil.**—The stockholders of the Rio de Janeiro Tramway, Light & Power Company have approved an increase in the capital stock of the company from \$25,000,000 to \$40,000,000. Stockholders of the company on May 5 are offered the right until May 24 to subscribe for \$6,250,000 of the new stock in the proportion of one share of the new stock for every four shares now held. Twenty-five per cent of the purchase price under this option is payable on application and the remaining 75 per cent is due in three installments, on June 13, July 13 and Aug. 13. The new stock has been underwritten at par at a commission of 2½ per cent.

**Scranton (Pa.) Railway.**—Bioren & Company and Newburger, Henderson & Loeb, Philadelphia, Pa., offer for subscription an issue of \$200,000 of Scranton Railway first consolidated 5 per cent gold bonds due 1932, which was purchased from the American Railways Company. The bonds are issued to retire an equal amount of Scranton Suburban Railway first mortgage 6 per cent bonds maturing on May 1, 1909. An option is given to exchange the old bonds for the new bonds at par, with adjustment of interest as of May 1.

**Springfield & Xenia Traction Company, Springfield, Ohio.**—John B. Linn, Springfield, Ohio, is negotiating for the purchase of the property of the Springfield & Xenia Traction Company. If Mr. Linn should conclude the purchase he will buy Neff Park at Yellow Springs and operate both the railway and the park.

**Third Avenue Railroad, New York, N. Y.**—Frederick W. Whitridge, receiver of the Third Avenue Railroad, filed the report of that company for the three months ended March 31, 1909, with the Public Service Commission of the First District of New York on April 11. The gross receipts of the four divisions of the system were \$1,344,177; the net earnings \$250,438 and the surplus \$182,395. In transmitting the report to the commission Mr. Whitridge said that hereafter he proposed to make the earnings of the company public from his office when the reports are filed with the commission.

**United Railways Company, St. Louis, Mo.**—The Mississippi Valley Trust Company, Francis Brothers & Company, St. Louis, and McCoy & Company, Chicago, offer for subscription at 86 and interest \$1,500,000 general first mortgage 4 per cent gold bonds of the United Railways Company dated July 1, 1909, and due July 1, 1934. These \$1,500,000 bonds are part of an authorized issue of \$42,000,000, of which there are outstanding \$30,769,000. The remaining \$11,231,000 are reserved to redeem prior liens of \$11,211,000. The United Railways has secured an extension of the charter of the Missouri Railroad for 50 years from April 28, 1909, in accordance with a resolution passed by the stockholders recently accepting the general provision of the corporation laws of the State.

**Virginia Passenger & Power Company, Richmond, Va.**—The property of the Virginia Passenger & Power Company was sold under foreclosure at Richmond on May 6 to Douglas Robinson, New York, representing the bondholders' protective committee, for \$8,100,000. The protective committee is composed of Douglas Robinson and Frank J. Gould, New York; Percy M. Chandler, Philadelphia; R. Lancaster Williams, Baltimore, and Fritz Sitterding, Richmond. The sale will have to be confirmed by the United States District Court before the reorganization can be perfected.

**Washington, Baltimore & Annapolis Electric Railway, Washington, D. C.**—Announcement is made that the Washington, Baltimore & Annapolis Electric Railway, which did not pay the interest on its terminal 5 per cent bonds due on March 1, 1909, will pay the coupons on May 20. The coupons on the first mortgage and second mortgage 5 per cent bonds due on May 1 are still unpaid, though it is understood that the management will pay them before they actually come into default, which under the terms of the mortgage is six months.

**Yonkers (N. Y.) Railroad.**—The Public Service Commission of the Second District of New York has authorized Leslie Sutherland, receiver for the Yonkers Railroad, to issue \$100,000 of 6 per cent receiver's certificates, payable in not less than two years. The proceeds are to be used for renewal and reconstruction of the company's lines in Yonkers and the purchase of new rails.

# Traffic and Transportation

## Re-Hearing on Fenders, Wheel Guards and Safety Devices for Brooklyn Cars

A re-hearing on the order of the New York Public Service Commission, First District, as to fenders, wheel guards and safety devices used on the surface cars operated in the boroughs of Brooklyn and Queens was held by Commissioner Maltbie on May 7. Commissioner Maltbie stated that the re-hearing was held at the request of the constituent companies of the Brooklyn Rapid Transit and the Coney Island & Brooklyn systems.

W. S. Menden, assistant general manager and chief engineer of the Brooklyn Rapid Transit Company, stated that the order of the commission providing for the re-hearing contained the objections of the companies. One objection was that the Brooklyn Union Elevated Railroad was included, whereas that company did not operate trolley cars. Commissioner Maltbie said that that company could be excepted, but that at some future time it might operate other cars. If it was excepted entirely, it would be necessary for the commission to see to the actual operation, whereas if the order issued excepted all but trolley cars it would work automatically.

Mr. Menden said that if the Brooklyn Union Elevated Railroad was to be included the company would like to have the order except all equipment operated by third rail; at least it wanted to have the order show that it was not the intention to compel the installation of fenders on what was known generally as elevated equipment. The company would also like to have the order modified so as to exclude the cable cars operated on Montague Street.

Commissioner Maltbie asked whether the company, if the cable cars were excepted, would equip them with wheel guards so long as they were operated. Mr. Menden said that the company operated only six cars on the Montague Street line, and the speed of these cars was so low it did not seem to be an urgent matter. The company had in mind a change in the motive power of this line to electricity. Wheel guards, if applied temporarily to the present cable cars, would not fit the new electric cars. On an incline which formed 25 per cent of the track mileage of this line, there was no traffic across the track. Commissioner Maltbie said it would cost approximately \$200 to equip six cars with wheel guards, and the expense of one accident which might have been less serious or even prevented entirely would be far out of proportion to this cost. Mr. Menden said that the traffic on the Montague Street line had decreased to probably one-third of what it was before the subway was opened.

The Brooklyn Rapid Transit Company would also like to have the order modified as to all lines, requiring a fender on the forward end only on each car. The order contemplated the installation of two fenders on each car. Some of the roads operated elevated equipment over a portion of the lines and the order should be so worded as to make it clear that the fenders were intended to be used on trolley cars only. A further objection was that the order asked the company to agree to accept an order the import of which was not clear at this time unless it should be assumed that the fenders which the company now had on cars, which it proposed to offer for the acceptance of the commission, should be accepted. If a different type should be required than the fender now on the cars it would be impossible to comply with the order.

S. W. Huff, president and manager, Coney Island & Brooklyn Railroad, in stating his position, asked modification of the order to provide for fenders on the front end only of the cars. The order of the commission provided that the fenders should be approved by the commission. As the time was so short it would be practically impossible to equip the cars with other fenders than those the company now had, if they should not be approved by the commission.

Mr. Menden said that the company, if the commission desired, could present plans of the fenders which it proposed to use. They might be presented in advance of the issue of the order by the commission, if that should be thought desirable.

The following information has been obtained in reply to an inquiry addressed to the electric railways in Greater New York regarding the steps taken by them to comply with the recent order of the Public Service Commission of the First District of New York regarding fenders and wheel guards. The Third Avenue Railroad is equipping all its cars with the H-B wheel guard, manufactured by Wonham, Magor & Sanger, New York. The Brooklyn Rapid Transit Company still has the matter of fenders and wheel guards under discussion with the Public Service

Commission and no decision has yet been made by it in regard to these matters. The Coney Island & Brooklyn Railroad has agreed to make tests with automatic wheel guards. When the order of the commission has been made final, the company will submit types of fenders now in use to the commission for approval. The order of the commission to the New York & Queens County Railway calls for the equipment of its cars with fenders only. The company will not be in the market for additional equipment as it expects to use the fenders with which its cars are at present equipped. The Metropolitan Street Railway has ordered 50 wheel guards of the latest truck-suspended type from the Parmenter Fender & Wheel Guard Company, Boston, Mass.

## Joint Traffic Agreement Between Illinois Traction System and the Rock Island-Frisco Lines

Tariffs are being issued for joint freight and passenger rates between all points on the Chicago & Eastern Illinois Railroad, Chicago, Rock Island & Pacific Railway and the Illinois Traction System. The advantageous location of the Illinois Traction System with regard to its connections with the 15,000-mile Rock Island-Frisco system should bring about a considerable increase in the already large freight traffic of the electric railway.

The main lines of the Illinois Traction System connect Peoria and Danville, Ill., with St. Louis, Mo. The lines of the Chicago, Rock Island & Pacific Railway extend south in Illinois to Peoria; the lines of the Frisco system extend east to St. Louis and the lines of the Chicago & Eastern Illinois Railroad extend west of the junction point with the lines of the Illinois Traction System at Glover, near Danville. Thus the three main divisions of the steam railroads are tied together in competitive territory by the Illinois Traction System, whose lines are within territory not now served by the participating steam railroads.

The first freight tariff issued was dated April 27, and showed joint rates on all classes between Chicago, Ill., the suburban territory as far south on the Chicago & Eastern Illinois Railroad as Chicago Heights and as far southwest on the Chicago, Rock Island & Pacific Railway as Joliet and all stations on the Illinois Traction System. The arrangement between the steam roads and the electric railway includes an exchange agreement for the Illinois Valley lines operated under the same management. The new tariff applies to all industries in the vicinity of Chicago reached by the following participating carriers: Chicago Lighterage Company, Chicago Warehouse & Terminal Company, Indiana Harbor Belt Railroad, Merchants' Lighterage Company, Northern Michigan Transportation Company and the parties to the tariff.

This arrangement for interchange with the large steam railroads makes it possible for the Illinois Traction System to serve all its territory in the handling of through and local freight, and will be particularly beneficial to the shippers of farm produce. All foreign cars will be handled on the per diem basis under Master Car Builders' rules, and the Illinois Traction System, thus placed under the rules of the Interstate Commerce Commission, will be allowed the same division of through rates as a steam road similarly situated. Large shipments of coal and farming produce originate in the territory served by the Illinois Traction System, and under the rules of the Illinois Railroad and Warehouse Commission the originating or the delivering road, in this case the Illinois Traction System, receives at least 25 per cent of the total freight charge.

## Massachusetts Electric Companies Purchase Automobiles

The Boston & Northern and the Old Colony Street Railway companies have purchased four automobiles from the Chalmers Company, of Detroit, Mich., for the use of the general superintendents of the system. Each is a 30-hp gasoline car of the "tourabout" type, seating five persons. One machine will be assigned to Lynn, one to Lowell, one to Brockton, and one to Fall River, Mass. Each general superintendent will operate his own automobile, and for the present the machines will be maintained and cared for in local garages. The company expects that the use of these machines will save the operating officers of the organization a great deal of time in traversing the system, and will greatly facilitate the general supervision of the operating divisions. A source of saving will be in the time required to travel from points separated only a few miles in air line, but which are not reached by trolley lines except in a roundabout way, and the possibilities of covering a wide territory in times of heavy traffic where the operating conditions require executive handling have

also been appreciated by the companies. Inspection by visiting officials will also be facilitated by the use of these machines, and the time formerly lost in trying to pass through streets of more or less congested character or irregular topography will be minimized through the superior accelerating and braking qualities of the motor vehicle.

The company also has a 30-hp Studebaker gasoline car used by the superintendent of equipment, and a Stanley steam runabout used by the superintendent of lines and bonding. These machines are kept in Boston, and are also used by the officers of the company at the State Street headquarters. For emergency service and as a means of saving the time of the higher officers of the organization, the automobile has come to be an important factor in street railway work, and the magnitude of the Boston & Northern and Old Colony systems, covering over 850 miles of track, assures a practical field of usefulness for these machines.

**Toledo Cars Stop on Near Side of Street.**—The Toledo Railways & Light Company, Toledo, Ohio, recently issued an order to stop cars at street railway intersections in the business section of Toledo before crossing the streets.

**Semi-Convertible Pay-As-You-Enter Cars in New York.**—The Third Avenue Railroad, New York, N. Y., placed 14 of the semi-convertible cars which were described on page 828 of the ELECTRIC RAILWAY JOURNAL of May 1, 1909, in operation on May 5.

**Hearing Asked on West Roxbury Service.**—The Massachusetts Railroad Commission has been asked to give a hearing regarding service on the lines of the Boston Elevated Railway and the Old Colony Street Railway in the West Roxbury district.

**Reduction in Fare Ordered in Ontario.**—The Ontario Railway & Municipal Board has ruled that the International Railway shall reduce the fare on its line from the town of Niagara Falls, Ont., to Niagara Falls proper from 10 cents to 5 cents.

**Cash Fares Increased by Massachusetts Lines.**—On March 15, 1909, the rate of cash fares was raised from 8 to 10 cents by the Dedham & Franklin and the Medfield & Medway Street Railway companies which operate a continuous line 22 miles in length. The rate for the total trip is now 50 cents instead of 40 cents, five collections being made. Tickets are sold in strips of 12 for \$1, which gives a fare of 8 1/3 cents.

**Rochester Railway Renews Agreement with Employees.**—The Rochester (N. Y.) Railway has renewed for a period of five years the agreement which it has had for some time with its employees regarding wages and hours of service. The agreement specifies a wage of 20 cents an hour the first six months of employment, then 22 cents an hour, with a final increase to 24 cents an hour. On the Rochester & Sodus Bay Railway the rate per hour for the same periods is 22 cents, 24 cents and 26 cents per hour.

**Complaint Against Women's Cars Dismissed.**—The complaint of Thomas Dundon, New York, to the Interstate Commerce Commission at Washington that the reservation of cars for women by the Hudson & Manhattan Railroad is a violation of the law has been dismissed by the commission. The commission holds that as men are not excluded from the women's cars, the law is not infringed. A copy of the decision by the commission has been sent to Wm. G. McAduo, president of the Hudson & Manhattan Railroad, against whom the complaint was directed.

**Interurban Railways Take Over Express Business.**—The Ohio Electric Railway, the Indiana Union Traction Company, the Fort Wayne & Wabash Traction Company and other companies have entered into a contract with the United States Express Company and the Southern Ohio Express Company, by which they will operate the express business on electric railways in Ohio and Indiana aggregating about 2600 miles. The freight traffic developed by the various companies, however, will be retained by them. The arrangements for transferring the business go into effect on June 1. Extensions tentatively planned for the system will provide connections with Chicago, St. Louis and other large cities.

**Chamber of Commerce on Surface Transportation in New York.**—At a meeting of the Chamber of Commerce of New York recently, Gustav H. Schwab, on behalf of the executive committee, submitted the following preamble and resolution, which were adopted: "Whereas, A proper solution of the questions relating to the surface street railways of the borough of Manhattan is of great importance to the commercial interests of this city as well as to all its inhabitants; now, therefore, be it resolved, that the president appoint a special committee of five for the purpose of ex-

amining into the conditions affecting the surface street railways of the borough of Manhattan, and for the purpose of presenting such conclusions as they may arrive at in the premises." The committee has been appointed, with Joel B. Erhardt as chairman.

**Ban Placed on Carrying Fish in Brooklyn Cars.**—The Brooklyn Rapid Transit Company has issued an order prohibiting the carrying of fish on any lines of the company. The order reads in part as follows: "Hereafter agents must decline to accept fare from passengers who are carrying fish or baskets which have been used for the purpose of carrying fish. In the case of trains running on the surface trainmen must decline to permit passengers carrying fish, or fish baskets, to board their trains." Many passengers of the company have been in the habit of purchasing fish in the New York markets for use at home and others have been frequenters of the waters of Long Island, which are plentifully stocked with fish at certain seasons, and the practice of carrying fish on cars has increased steadily for some time until it has finally degenerated into an abuse.

**"Suburban Outlook."**—On May 15 forms will close for the first issue of the *Suburban Outlook*, a new magazine published under the direction of Ernest Gonzenbach, general manager Sheboygan Light, Power & Railway Company, Sheboygan, Wis. It is the aim of the magazine to encourage suburban life and thus be of indirect benefit to street and interurban railways. Arrangements are being made to distribute large quantities of the first issue to various electric railroads. It is thought that in this way any medium-sized city road or any interurban road may, by judicious distribution in its own territory, indirectly encourage its patrons to build homes outside of the confines of their city. The first issue of the magazine will contain 42 pages of reading matter devoted to such topics as the comparative cost of living in city and suburban homes; physical culture as a by-product of suburban living; a discussion on the way the doctor and the tradesman pay the suburban carfare, and detailed information on truck gardening, poultry raising and agriculture. The magazine will be illustrated.

**Agreement Between Company and Employees in Pittsburg.**—The employees of the Pittsburg (Pa.) Railways Company have accepted the terms offered by the company for a renewal of the agreement covering the conditions of service to govern employees. The men withdrew their requests for an increase in wages and the employment of none but union men. The sections of the original agreement between the company and the men which have been modified are Nos. 1, 8, 12 and 16. Under Section 1 the hours of service are to be made as near as possible equal on a basis of a maximum of 11 hours and a minimum of 8 hours, with 10 per cent leeway. Under Section 8 all men are to be placed on a list as to seniority of hire at the car house where they report, and have the choice of runs according to the length of service. Under Section 12 all trippers and trailers working less than 5 hours are to be paid \$1.20 when working as extra men who have not worked any during the day. Under Section 16 the president of the company at 10 a. m. on the first and third Tuesday of each month is to hear such individual cases by employees as have been appealed from the decision of the superintendent. The communication is concluded with a list of the lines on which motormen will be permitted to use stools. The use of stools outside of the limits set by the company will subject the employee to dismissal.

Members of the Board of Supervising Engineers, Chicago Traction, are now making a trip to several cities in the East where supplies for the rehabilitation of the surface lines of Chicago are being manufactured. At Pittsburg the board inspected the works of the Pressed Steel Car Company where 50 all-steel cars are now being built for the Chicago Railways. At Johnstown the works of the Lorain Steel Company, which is rolling 20,000 tons of rails and building special work for Chicago track, were visited. At Harrisburg the Pennsylvania Steel Company's plant, which is furnishing a large amount of special track work, was visited. The plan of the trip includes trips to several other Eastern cities where there are large manufacturing plants. The works of the General Electric Company, at Schenectady, where the railway electrical equipment for the Chicago rehabilitation is being manufactured, may also be inspected.

Employees of the Portland Railway, Light & Power Company, Portland, Ore., have organized an electric club composed entirely of employees of the company. Meetings of the club are to be held once a month at which plans will be discussed for improving the service of the company, and lectures will be delivered on technical subjects by the heads of the various departments.



## Personal Mention

**Mr. Alfred F. Potts** has resigned as secretary and treasurer of the Winona Interurban Railway, Winona Lake, Ind.

**Mr. Horace E. Andrews**, president of the Cleveland (Ohio) Railway, and president of the New York State Railways, Rochester, N. Y., has been elected a director of the Lackawanna Steel Company, West Seneca, N. Y.

**Mr. U. S. Sliter**, formerly superintendent of transportation of the Mahoning & Shenango Railway & Light Company, Youngstown, Ohio, has been appointed assistant superintendent of the Flint division of the Detroit (Mich.) United Railways to succeed Mr. E. E. Maitroit.

**Mr. D. T. Pierce**, New York, has just been appointed assistant to the second vice-president of the Philadelphia (Pa.) Rapid Transit Company, with offices in the Land Title Building, Philadelphia. He will have charge of the relations of the company with the public press. Mr. Pierce has had a long daily newspaper experience and for seven years was editor of *Public Opinion*. He gained a wide acquaintance in Philadelphia through his connection with the Pennsylvania Railroad.

**Mr. Alfred A. Gardner** has resigned as general solicitor of the Interborough Rapid Transit Company, New York, effective on June 1. Mr. A. E. Mudge, who has been connected with the legal department of the company, has also resigned. Mr. Gardner and Mr. Mudge will establish offices for themselves in New York for private practice. The work of Mr. Gardner's office with the Interborough Rapid Transit Company in the future will be divided between Mr. James L. Quackenbush, general attorney of the company, and Mr. Richard Reid Rogers, counsel for the company, who recently resigned as general counsel to the Panama Canal Commission in Washington to accept an appointment with the Interborough Rapid Transit Company.

**Mr. E. P. Seymour** has been appointed division roadmaster of the Lowell division of the Massachusetts Electric Companies, Boston, Mass. Mr. Seymour has long been engaged in street railway work, having entered the employ of the Naumkeag Horse Railroad, Salem, Mass., on May 16, 1883. After being connected with this company five years, he accepted a position as track foreman with Shaw & Ferguson, street railway contractors, with whom he remained four years. Mr. Seymour then accepted a position as superintendent of construction of the Pierce Construction Company and remained with this company two years, resigning to become superintendent of construction for James F. Shaw & Company, Boston, with whom he remained until January, 1909. While with James F. Shaw & Company, Mr. Seymour had full charge of construction, including track and overhead work, low and high-tension line and highway work.

**Mr. John Derby** has resigned as fire protection engineer of the Metropolitan Street Railway, New York, effective June 1. Mr. Derby entered the employ of the Metropolitan Street Railway in November, 1907, to prepare the general layout and supervise the installation of the sprinkler systems, chemical extinguishers, standpipes, fire alarms, etc., for the protection of the property of the company from fire. In addition, he organized fire brigades and a department for maintaining the efficiency of the system which he had created. Previous to coming to New York, Mr. Derby spent six years installing sprinkler systems and eight years as inspector of sprinkler risks for the New England Fire Underwriters' Bureau. He was then engaged by the Phoenix Fire Insurance Company, Hartford, Conn., to take charge of its sprinkler risks in the Western States. Illness, however, prevented him from leaving the company's home offices where he was engaged at the time he was appointed to the Metropolitan Street Railway. Mr. Derby proposes to open an office in New York as a fire protection engineer and insurance broker, and will make a specialty of fire protection systems for electric railways.

**Mr. W. F. Goble**, whose appointment as superintendent of the mechanical department of the Los Angeles & Redondo Railway, Los Angeles, Cal., was announced recently in the *ELECTRIC RAILWAY JOURNAL*, entered the employ of the Los Angeles & Consolidated Electric Railway, which later became the Los Angeles Railway, as a car repairer in August, 1892. In 1894 Mr. Goble was appointed night foreman of the company, a position from which he resigned in 1897 on account of ill health. In 1898 Mr. Goble entered the employ of the Main, Fifth & San Pedro Street Railway, Los Angeles, as mechanical foreman. Subsequently the property of this company was purchased by the Los Angeles Railway and Mr. Goble again entered the employ of the Los Angeles Railway, this time as an inspector in charge of the overhauling work. When the

Pacific Electric Railway opened its Long Beach line Mr. Goble equipped the cars for service and remained with the company as general car inspector until 1903, when he again entered the employ of the Los Angeles Railway as general foreman under Mr. E. L. Stephens, master car builder of the company. On Jan. 1, 1907, Mr. Goble was appointed general foreman of the Los Angeles & Redondo Railway, and on April 1, 1909, was appointed superintendent of the mechanical department of the company.

## OBITUARY

**Charles T. Hughes**, one of the notable Edison pioneers of 30 years ago, died last week at his residence in East Orange, N. J. Mr. Hughes was actively associated with Mr. Edison in the experiment which he conducted with electricity as motive power for railways at Menlo Park in the early 80's.

**Jacob E. Ridgway**, one of the organizers of the Union Passenger Railway, Philadelphia, Pa., is dead. Mr. Ridgway retired from active street railway work several years ago. At the time of his death he was a director of the Keystone Telephone Company and president of the Atlantic City & Chelsea Improvement Company. He retired as president of the Quaker City National Bank in January, 1909.

**Charles A. Gardiner**, counsel for the Manhattan Elevated Railway, New York, N. Y., is dead. Mr. Gardiner was born in Canada on Sept. 2, 1855, attended an academy at Fort Covington, N. Y., Hungerford Collegiate Institute, at Adams, N. Y., and Hamilton College, where he was graduated in 1880. In 1884, having studied at the Columbia Law School, he began his practice in New York and in 1888 became a member of the firm of Davies & Rapallo, which had among its clients the elevated railway companies. Afterward he became the head of the law department of these companies.

**Samuel M. Manifold** died at York, Pa., on May 8. Mr. Manifold became ill shortly after he had accepted the position of manager of the Morris County Traction Company, Morristown, N. J., and before he had entered upon the duties of that position. Mr. Manifold was born in the United States on May 8, 1842, and served in the Twenty-first Pennsylvania Cavalry during the Civil War, and was mustered out of service with the rank of second lieutenant. In 1872 he began his railroad career, and shortly thereafter was appointed superintendent of the New York & Peachbottom Railroad. Subsequently he became connected with the Baltimore & Harrisburg Division of the Western Maryland Railroad and was eventually made general superintendent of the company. He was appointed general manager of the York (Pa.) Street Railway and Edison Electric Light Company, York, in 1904. Mr. Manifold was elected sheriff of York County later in 1904 on the Republican ticket, and served several terms as a member of the City Council. He is survived by a widow and six children.

## NEW PUBLICATIONS

**Electric Railway Power Stations.** By C. C. Swingle. Chicago: Frederick J. Drake & Company, 1909; 718 pages; illustrated. Price, \$2.

This book is largely a compendium describing most of the apparatus used in electric railway power stations, with a strong tinge of the schoolmaster in its definitions of power devices. Apparently, the book is designed for students, as every chapter is accompanied by a set of questions and answers. Some of the latter might well be omitted, as for example: Question—"How should a boiler be arranged with regard to cleaning?" Answer—"All parts should be easily accessible for cleaning." Engineers are not made by memorizing catechisms, even of the best kind.

**Water Power Engineering.** By Daniel W. Mead. New York: McGraw Publishing Company, 1908; 787 pages; illustrated, curves and tables. Price, \$6 net.

The writer, who is a consulting engineer and professor of hydraulic and sanitary engineering in the University of Wisconsin, has produced a work which will be worth many times its cost to those interested in water power development. Perhaps the most commendable features are the very thorough discussions on stream flow, head, run-off and rainfall, as the author takes great pains to show the considerable variations possible in each of these factors. Professor Mead is not satisfied with the few measurements on which stream flow is usually based, but recommends the use of hydrographic curves to show daily variations for a full year at least. The book also contains data on many types of hydraulic machinery and a discussion of commercial considerations in the sale of power. The lists of books given at the ends of the chapters are in themselves a most valuable guide to those who desire more detail on certain branches of the subject.

# Construction News

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

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

## RECENT INCORPORATIONS

**\*Columbus, Plain City & Urbana Traction Company, Columbus, Ohio.**—Incorporated for the purpose of building an electric railway to connect Columbus and Urbana, by way of Plain City. Capital stock \$10,000. Incorporators: Charles E. Heath, W. L. McVey, Randolph Walton, Frank E. Ruth and Herbert Myers.

**Cobourg, Port Hope & Havelock Electric Railway, Cobourg, Ont.**—Chartered to construct an electric railway which is to extend across Northumberland County to Warkworth and Campbellford and on to Havelock, with branches to Blairton and to the Marmora mining district, and other branches from a point near Warkworth to Roseneath and Hastings. Incorporators: H. T. Bush, E. S. Huycke, Port Hope; W. J. Crossen, Cobourg; Reeve J. Knox, Havelock. Col. H. A. Ward, Port Hope, secretary. [E. R. J., April 24, '09.]

**\*Inland Oregon Electric Railway, Portland, Ore.**—Incorporated in Oregon to build an electric railway from Condon, through Fossil, southeast to Canyon City. Another branch is to be built from Fossil through Wheeler, Wasco and Crook counties to the confluence of Trout Creek and the Deschutes, where it will join the main line of the Portland-Baker City & Butte Electric Railway. Capital stock, \$1,000,000. Incorporators: M. W. Gill, H. J. Martin and C. D. Charles.

**\*South Dakota Interurban Railway, Centerville, S. D.**—Incorporated to construct an electric railway from Sioux City to Bijou Hills, 160 miles. Headquarters, Centerville. Capital stock \$1,000,000. Directors, William E. Miller, Fred E. Graves, Ralph W. Thwing and Charles E. Todd, Bijou, and George A. Miller, Academy.

**\*Fayette County Traction Company, Richmond, W. Va.**—Incorporated to construct an electric railway from Fayette Station to Fayetteville, W. Va. Capital stock \$75,000. Incorporators: R. D. West, John Reese, E. G. Blume, G. E. Nestor and W. G. Wheatley.

**\*Dousman & Marlboro Railroad, Milwaukee, Wis.**—Incorporated for the purpose of constructing an electric railway 6¾ miles long, from Dousman to Marlboro. Capital stock \$25,000. Incorporators, James M. Pereles, Thomas J. Pereles, Mason Pereles, Jr., William H. Lindwurm and Henry Campbell.

## FRANCHISES

**Burnaby, B. C.**—The Municipal Council has passed a by-law giving the British Columbia Electric Railway permission to construct an extension from the east boundary of Hastings townsite east for several miles almost in the direction of New Westminster.

**Los Angeles, Cal.**—The Los Angeles Railway has purchased two franchises calling for extensions to its lines in Los Angeles. About 2½ miles of new track are covered by these franchises.

**\*Twin Falls, Idaho.**—The City Council has granted a franchise to George D. Aiken to build an electric railway in Twin Falls.

**Norris, Ill.**—The City Council has granted a franchise to the Peoria & Galesburg Railway to build its proposed electric railway over certain streets of Norris. [E. R. J., March 20, '09.]

**Boston, Mass.**—The Worcester & Providence Street Railway, which proposes to construct an electric railway between Worcester and Providence, has petitioned the Railroad Commission for an extension of time to Dec. 8, 1910, in which to begin construction. [E. R. J., Feb. 20, '09.]

**Mexico, Mo.**—The Mexico, Santa Fe & Perry Traction Company, which contemplates building an electric railway from Hannibal through Mexico to Fulton and Columbia, has been granted a franchise to build its proposed railway through Mexico.

**New York, N. Y.**—The Board of Estimate and Apportionment has granted the South Shore Traction Company a franchise for a street railway from the Manhattan end of the Queensboro Bridge over the bridge, and through Thompson Avenue and Hoffman Boulevard to the line dividing the counties of Queens and Nassau.

**New York, N. Y.**—The Public Service Commission of the Second District has granted its approval to the construction, extension and improvement of the New York & North Shore Traction Company's line from Roslyn, westerly on

and along the North Hempstead turnpike, to the easterly limit of the Borough of Queens at Little Neck.

**New York, N. Y.**—The Public Service Commission of the First District has approved the franchise granted to the Union Railway by the Board of Estimate to build an extension on Pelham Avenue in the Bronx.

**Carthage, Ohio.**—An agreement has been reached between the Cincinnati Traction Company and Carthage by which a 5-cent fare will be given the people in return for a 25-year franchise. A line will be built out Paddock Road from the Avondale line and a loop will be used to turn the cars near Carthage.

**Oklahoma City, Okla.**—At a special election recently held at Oklahoma City the Oklahoma Interurban Traction Company was granted a blanket franchise over the streets of Oklahoma City. Construction work will be started at once, the franchise conferring all necessary entrance facilities. The company proposes to build an electric railway from Oklahoma City through Capitol Hill to El Reno. E. I. Wade, secretary. [E. R. J., March 20, '09.]

**Portland, Ore.**—An ordinance has been introduced in the City Council to grant the United Railways an extension of time until July, 1910, in which to complete its line to Mount Calvary and giving the company permission to operate its main line to Burlington in the meantime.

**Greenville, S. C.**—The Paris Mountain Electric Railway, which proposes to build an electric railway from Greenville to the summit of Paris Mountain, has applied to the City Council for an electric railway franchise. A. E. Sussex, Greenville, is interested in this proposition. [E. R. J., Feb. 13, '09.]

**\*Fayetteville, W. Va.**—The Fayette County Traction Company, which has just been incorporated to build an electric railway between Fayette Station and Fayetteville, has applied for a street railway franchise in Fayetteville.

**Milwaukee, Wis.**—The City Council has granted the Milwaukee Electric Railway & Light Company a franchise for a number of extensions to its lines in Milwaukee.

## TRACK AND ROADWAY

**Rogers, Pea Ridge & Northern Interurban Railway, Rogers, Ark.**—Bryan Snyder advises that this company has completed the preliminary survey for its proposed 20-mile electric railway and it is probable that construction work will be under way within 90 days. It will connect Rogers and Pea Ridge, 10 miles north, also Diamond and Electric Springs. Articles of incorporation are now being prepared. It is the intention to erect a power plant and a repair shop at Rogers. Officers: A. R. Potter, Rogers, president; J. F. Walker, Rogers, first vice-president; W. T. Patterson, Pea Ridge, second vice-president; Bryan Snyder, Rogers, secretary; J. J. Putman, Pea Ridge, treasurer. [E. R. J., April 10, '09.]

**Colorado Springs & Interurban Railway, Colorado Springs, Colo.**—This company has placed orders recently for material for the construction of about 4 miles of new track.

**\*Mascontah, Ill.**—Capt. Charles Hewitt and H. M. Needles, Belleville, are said to be promoting a plan to connect Mascontah and Belleville with an electric railway.

**\*Toledo, Defiance & Ft. Wayne Electric Railway, Ft. Wayne, Ind.**—Official announcement is made that this company has financed its proposed electric railway, and that construction work will be started within two weeks. The distance is 43 miles. It will follow the old canal bed for the greater part of the way and will parallel the Wabash Railroad from Defiance to Cecil, and for 18 miles east of Ft. Wayne will parallel the Nickel Plate Railroad. E. D. Ruggles & Company, Chicago, Ill., are said to have underwritten bonds amounting to \$1,250,000. The deal includes the purchase and the rebuilding of the electric railway now operating in Defiance.

**Cincinnati, Louisville, Lexington & Maysville Traction Company, Dry Ridge, Ky.**—This company, which was incorporated recently to build an electric railway to connect Cincinnati with Louisville, Lexington and Maysville, advises that it will start construction at once. W. T. S. Blackburn, Dry Ridge, president. [E. R. J., April 24, '09.]

**Lewiston, Augusta & Waterville Street Railway, Lewiston, Maine.**—It is reported that this company is planning to expend \$100,000 during the present year in the improvement of its line. A large part of this will be spent on the division between Augusta and Gardiner, where new rails will be laid and the track re-ballasted.

**Winnipeg (Man.) Electric Railway.**—At the annual meeting of this company it was decided to issue \$1,500,000 in new stock, the proceeds to be used in extensions and improvements.

**\*Bay City, Mich.**—It is stated that P. S. Doyle and A. Haur, Chicago, Ill., and E. Boggs, St. Paul, Minn., are interested in the promotion of an electric railway from Port Huron to Bay City.

**Western Transportation Company, St. Paul, Minn.**—J. N. Braun, president, advises that this company will soon be in the market for material for the construction of a number of proposed electric railways in which it is interested. One of these lines is projected from Portage to Grand Rapids, via Briggsville, Oxford and Friendship, a distance of 70 miles. Surveys have been made and rights of way secured for a distance of 30 miles from Portage via Briggsville to Oxford. Contracts have been let for ties and grading. The repair shops for this line will be located at Briggsville, as well as an amusement park on the shore of Lake Mason. The company also contemplates constructing a railway from Galesville to Etrick, Wis., a distance of about 10 miles. Mr. Braun states that the company is planning to construct a 60-mile interurban railway in Montana. Surveys have not as yet been made for this project. [E. R. J., Dec. 5, '08.]

**Licking, Mo.**—Announcement is made that financial arrangements for the construction of the Rolla-Cabool Interurban Railway, passing through Licking, Raymondville and Houston, have terminated successfully. Towns along the right of way are said to have subscribed \$100,000 to the project. The line will be 75 miles long. E. E. Young, Licking, promoter. [E. R. J., April 10, '09.]

**Interstate Railway, Kansas City, Mo.**—Announcement is made that this company is closing up the right-of-way preparatory to beginning construction work on its proposed electric railway from Kansas City to Dearborn and St. Joseph, a distance of 48½ miles. A total of about 110 miles of single track and sidings will be built. It is planned to have preliminary arrangements completed in order to start construction about June 15. Headquarters, 735 New York Life Building. Officers: George R. Collins, president; Ernest D. Martin, vice-president; Samuel P. Martin, secretary; Thos. F. Marshall, treasurer.

**Hickory (N. C.) Railway.**—M. E. Thornton, president, Water Power Electric Company and the Hickory Railway, which proposes to build an electric railway to run from Hickory, N. C., to Catawba Springs, Newton, Brookford, Hildebran and Cliffs, advises that the railway will not be ready for consideration until the electric company has been financed for construction and is quite ready for operation. The latter is now looking to floating its securities. The stock is \$500,000, of which \$240,000 is in the treasury, and the bonds will be \$650,000 of 6 per cent, interest payable semi-annually. [E. R. J., April 24, '09.]

**New York City (N. Y.) Railway.**—It is stated that this company will place an order this week for 3000 tons of grooved rails. The section called for in the specifications differs slightly from that previously called for by the company.

**Buffalo & Lake Erie Traction Company, Buffalo, N. Y.**—This company has just placed an order with the Pennsylvania Steel Company for 500 tons of 7-in. girder and high T-rails.

**Elmira Water, Light & Railroad Company, Elmira, N. Y.**—This company has just placed an order with the Pennsylvania Steel Company for 400 tons of girder and high T-rails.

**Morrisburgh Electric Railway, Morewood, Ont.**—This company, which proposes to build an electric railway between Morrisburgh and Ottawa, 70 miles, advises that it has secured the right of way and is now ready to begin construction work. Williamsburg, Winchester, Chesterville, Morewood, Kenmore, Metcalfe and Greeley will also be connected by the line. C. M. Willard, Box 45, Morewood, president. [E. R. J., Jan. 23, '09.]

**\*Stratford, Ont.**—N. M. Cantin, St. Joseph, has submitted a proposition to the City Council on behalf of New York capitalists to build an electric railway between St. Joseph and Stratford, a distance of about 65 miles, upon the condition that the city guarantee the bonds of the concern up to \$250,000.

**\*Corvallis, Ore.**—It is reported that Ernest A. Miller is interested in a proposition to organize a company to be known as the Corvallis & Southwestern Railway, to construct an electric railway from Corvallis to Alsea via Philomath.

**Pittsburgh & Westmoreland Railway, Pittsburgh, Pa.**—It is stated that this company is ready to extend its line north from Irwin and has agreed to build a bridge from the foot of Oak Street to North Irwin, at a cost, it is estimated, of about \$50,000.

**Nashville (Tenn.) Interurban Railway.**—This company has begun regular operation of its line between Nashville and Franklin, Tenn., about 17 miles. Eleven cars will be operated each way daily.

**Greenville, Tenn.**—P. C. Ottinger, Route B, Greenville, writes that he represents New York financiers who are planning to establish an electric railway between Greenville and Newport. He is now at work securing the right-of-way. It is proposed to dam the Nolo Chucky River for the necessary power. [E. R. J., April 24, '09.]

**San Antonio (Tex.) Traction Company.**—J. J. King, general superintendent, advises that this company will purchase 450 35-ft. x 8-in. cedar poles and 4 miles of 55-lb. T-rails.

**Cle Elum-Roslyn Railway & Power Company, Cle Elum, Wash.**—Announcement is made that it is the plan of this company to begin the work of construction of its projected electric railway within two weeks. It will extend from Cle Elum to Roslyn, 12 miles. The proposed power plant will be located at Cle Elum. Frank S. Farquhar is one of the incorporators. [E. R. J., Jan. 30, '09.]

**Pasco, Wash.**—J. B. Hubrick, Pasco, writes that he intends to start construction, about June 15, on the proposed narrow-gauge railway between Pasco and Kennewick, 3½ miles. The line will be equipped with two 4-cylinder, 60-hp gasoline motor cars.

**Nooksack Valley Traction Railway, Seattle, Wash.**—J. S. Wheeler, president of this company, writes that the right of way for this proposed motor railway has been secured and is now being cleared. The railway will be 60 miles in length and will connect the following cities: Bellingham, Ferndale, Blaine, Custer, Lynden, Sumas and intermediate towns. It will connect with the Vancouver & British Columbia Railway at Blaine and Sumas. No contracts have been awarded as yet. Headquarters, 914 Fourth Avenue, Seattle. Officers: J. S. Wheeler, Seattle, president and general manager; J. E. Morrison, Seattle, vice-president; J. W. Welch, Ferndale, secretary; W. P. Alward, Seattle, treasurer. Capital stock authorized and issued, \$1,250,000. [E. R. J., Jan. 30, '09.]

**\*Grand Rapids (Wis.) Street Railroad.**—It is officially announced that this company will begin work within two weeks on its proposed electric railway which is to extend from Grand Rapids to Port Edwards and Nekoosa, a distance of about 7 miles. No definite arrangements have yet been made in regard to power to operate the line. It will reach the City Park, but the company also contemplates establishing others. Officers: Neal Brown, Wausau, president; L. M. Nash, vice-president; G. M. Hill, secretary; F. J. Wood, treasurer, all of Grand Rapids. Capital stock authorized and issued, \$125,000.

#### SHOPS AND BUILDINGS

**Washington, Alexandria & Mt. Vernon Railway, Washington, D. C.**—This company will begin shortly the erection of a passenger station on its line about half way between Washington and Alexandria. Plans have been prepared by Vogt & Morrell, architects. The station will be one story in height; the entire building will be of concrete. J. F. Rodgers has the contract for the building.

**Boston & Northern Street Railway, Boston, Mass.**—This company has awarded a contract to C. G. McLean for the erection of a new car house at Melrose Highlands to replace the one destroyed by fire on Feb. 6. It will adjoin the present car house, which was not damaged, and will be 72 ft. x 200 ft. in size. There will be five tracks with accommodations for 28 cars. It will be of wood construction with a flat roof and skylights. On the side nearest the car house the construction will be of concrete, thus acting as a fire wall. There will be a lobby, superintendent's office, rooms for the employees, lockers and machine shop.

**Second Avenue Railroad, New York, N. Y.**—The general contract for the reconstruction of the car house for this company on the east side of Second Avenue at Ninety-sixth Street at a cost of about \$300,000 has just been awarded to Charles H. Peekworth, 415 Hudson Street. Plans prepared by Maynicke & Franke, 298 Fifth Avenue, call for using the old foundation and a building measuring 201 ft. x 482 ft., three stories, of reinforced concrete and brick.

**Oregon Electric Railway, Portland, Ore.**—This company has begun work on its depot at Forest Grove. The building will be in the shape of a triangle and will be 94 ft. 6 in. x 16 ft. on the west end and 52 ft. 10 in. on the east end. There will be 44 ft. on the west end occupied by waiting room and ticket office.

#### POWER HOUSES AND SUBSTATIONS

**Slate Belt Electric Street Railway, Pen Argyle, Pa.**—This company contemplates making a number of improvements to its power plant.

# Manufactures & Supplies

## ROLLING STOCK

**Pacific Electric Railway, Los Angeles, Cal.**, it is reported, will build 50 new cars in its own shops.

**Rochester, Syracuse & Eastern Railroad, Syracuse, N. Y.**, has ordered 13 cars from the G. C. Kuhlman Car Company.

**Clinton (La.) Street Railway** has purchased two second-hand GE-52 motors from the Dorner Railway Supply Company, Chicago.

**Great South Bay Ferry Company, Freeport, N. Y.**, has purchased two 9-bench open second-hand cars complete from MacGovern, Archer & Company, New York.

**Marshall (Tex.) Traction Company**, which is building an electric railway at Marshall, is in the market for one or two second-hand open motor cars with a seating capacity of 25 to 35.

**Lincoln (Neb.) Traction Company** has purchased three sets of Taylor improved short wheel-base trucks. These trucks will be used under 35-ft. car bodies and will be mounted on 33-in. wheels.

**Pittsburgh & Kansas City Railway, Pittsburgh, Kan.**, which was reported in the *ELECTRIC RAILWAY JOURNAL* of May 8 as making inquiry for interurban cars, has placed an order for four cars with the American Car Company.

**Los Angeles & Redondo Railway, Redondo Beach, Cal.**, mentioned in the *ELECTRIC RAILWAY JOURNAL* of April 17, 1909, as contemplating the construction of six new cars in its shops, does not expect to have these cars ready until early in 1910.

**Topeka (Kan.) Railway**, which was reported in the *ELECTRIC RAILWAY JOURNAL* of May 8, 1909, as being in the market for 10 city cars, has placed an order through the L. E. Myers Company, Chicago, with the American Car Company for 12 cars.

**Michigan United Railways, Lansing, Mich.**, mentioned in the *ELECTRIC RAILWAY JOURNAL* of April 3, 1909, as being in the market for five double-truck city cars, has ordered the cars from the St. Louis Car Company, St. Louis, Mo., for delivery within 30 days.

**Grand Valley Railway, Brantford, Ont.**, mentioned in the *ELECTRIC RAILWAY JOURNAL* of April 17, 1909, as being in the market for cars and trucks, has purchased four sets of double trucks from the Curtis Motor Truck Company, Decatur, Ill., and one set of single trucks from the Taylor Electric Truck Company, Troy, N. Y. The order for cars has not yet been placed.

**Ocean Electric Railway, Far Rockaway, N. Y.**, reported in the *ELECTRIC RAILWAY JOURNAL* of May 8, 1909, as having purchased six double-truck cars from the St. Louis Car Company, has drawn the following specifications in addition to those mentioned in previous issues:

Seating capacity	.....48	Curtain material	...Pantasote
Weight	.....21,000 lb.	Gears and pinions	...Nuttall
Length over vestibule	...46 ft.	Heaters	..... Consolidated
Width over all	...8 ft. 6 in.	Headlights	..... Neal
Body	..... wood	Journal boxes	..... St. Louis
Interior trim	...mahogany	Motors	.....2—West., 112
Underframe	..... metal	Push buttons	...Consolidated
Air brakes	...Westinghouse	Registers	.....New Haven
Brakeshoes	...Am. B. & F. Co.	Roofs	..... Monitor
Curtain fixtures	...National	Seating material	.....rattan

**Illinois Central Electric Railway, Canton, Ill.**, has placed an order with the McGuire-Cummings Manufacturing Company for one double-truck combination baggage and passenger car and two double-truck closed motor passenger cars. The baggage car is to have an over-all length of 49 ft. 1½ in.; inside length of baggage compartment, 9 ft. 8¾ in.; length of passenger compartment, 32 ft. 10½ in.; length of vestibule (inside measurement), 4 ft. 4½ in.; width over all, 8 ft. 9½ in.; over side sills, 8 ft. 6 in.; width (inside measurement), 7 ft. 9 in. The passenger cars are to have an over-all length of 44 ft.; length of vestibule, 3 ft. 10¾ in.; width over side sills, 8 ft. 6 in. The cars are to be equipped with National air brakes, McGuire-Cummings hand brakes, Peter Smith heaters, Hale & Kilburn seats, GE-80 motors, McGuire-Cummings 10-A trucks, Pantasote curtains and Curtain Supply Company's fixtures. They are to have double-end vestibules. The interior finish is to be of mahogany with solid bronze trimmings. The date of delivery has been set for July 1, 1909.

## TRADE NOTES

**Northern Engineering Works, Detroit, Mich.**, have furnished the Southern Wisconsin Power Company, Madison, Wis., with a 30-ton Northern traveling crane and a 6-ton electric mono-rail hoist.

**MacGovern, Archer & Company, New York, N. Y.**, have sold two second-hand, 150-kw rotary converters to the Long Island Railroad for use at the Huntington substation. They have also sold a 500-kw rotary converter to the Elgin, Aurora & Southern Traction Company.

**Electric Service Supplies Company, Philadelphia, Pa.**, has received an order from the Railway Equipment Company, New York, for six Imperial arc headlights, 18 single International fare registers, 12 oil headlights and 12 Knutson No. 2 trolley retrievers for use on the 12 cars recently bought from the Wason Manufacturing Company for the Conestoga Traction Company.

**Arthur D. Little Laboratory, Boston, Mass.**—Dwight T. Randall, M. E., member of the American Society of Mechanical Engineers, late engineer in charge of fuel tests, technologic branch, United States Geological Survey, has associated himself with the Arthur D. Little Laboratory of Engineering Chemistry, of Boston, in charge of the Department of Fuel Engineering. Mr. Randall, who is a graduate of the University of Illinois, was formerly connected with R. W. Hunt & Company and Westinghouse, Church, Kerr & Company, and later in charge of the steam engineering laboratory of the University of Illinois and of steam and boiler tests at the St. Louis Exposition.

**Bird-Archer Company, New York, N. Y.**, announces that, owing to the increasing demand for its boiler compounds in the Far East, agencies have been established in the following cities: Honolulu, J. P. Lynch, 42 Young Building; Manila, Lambert Springer Company, 99 Plaza Santa Cruz; Yokohama, T. M. Lafin, Exchange Market; Hong Kong, Shanghai and Singapore, United Asbestos Oriental Agency, Ltd. The Bird-Archer boiler compounds have been used successfully in the Philippine Islands, where magnesium and other sulphates in boiler feed-water have always caused serious trouble with scale. Similar scale-forming impurities are found in most of the boiler waters used in China and Japan.

**McLeer Electric & Manufacturing Company, Brooklyn, N. Y.**, has recently been incorporated by C. B. McLeer, J. F. McLeer and Edward McLeer, Jr. A factory has been equipped in one of the Bush Terminal Buildings at the foot of Thirty-sixth Street, Brooklyn. These buildings are located on the Upper New York Bay, and therefore have excellent receiving and shipping facilities. The shop occupies between 7000 sq. ft. and 8000 sq. ft. of floor space, has plenty of light and air and is equipped with machine tools and labor-saving appliances. The company will do general repair work, such as rewinding and reshafting of armatures, repairing motors, generators, transformers and controllers, and will manufacture armature, field and magnet coils on a large scale. It will make a specialty of vacuum drying and impregnating process of treating coils. Two machines are installed for that purpose; one for oil repelling and the other for repelling water and moisture. The company will also carry a complete line of electric railway supplies.

## ADVERTISING LITERATURE

**Dean Brothers Steam Pump Works, Indianapolis, Ind.**, have issued catalog No. 77, containing lists of parts of their pumps, directions for operating them and detail data.

**Frank Ridlon Company, Boston, Mass.**, calls attention in its May list of second-hand machinery to a considerable number of 500-volt d. c. motors suitable for shop purposes.

**Sterling Varnish Company, Pittsburg, Pa.**, has issued its 1909 catalog on insulating material for field and armature coils. The booklet also contains considerable information on specific gravities and solvents, coil baking, coil dipping, dipping tanks, etc.

**Walter A. Zelnicker Supply Company, St. Louis, Mo.**, has mailed Bulletin No. 83, dated May 1. It lists second-hand rails and other track material for sale, locomotives, cars, trucks and miscellaneous power plant, repair and construction apparatus.

**Niles-Bement-Pond Company, New York, N. Y.**, give some interesting tire turning records in the *Progress Reporter* for May. One of the best records is that of the Third Avenue Railroad, New York, which has turned 12 to 16 pairs of wheels in one day.

**Ohio Brass Company, Mansfield, Ohio**, has issued catalog No. 20, which is devoted entirely to catenary construction. This catalog not only illustrates materials in detail with numerous views of installations, but also contains much valuable information on engineering features. The latter data gives the proper calculations and allowances to be made for different forms of catenary construction and for the ordering of material.