

Electric Railway Journal

A CONSOLIDATION OF

Street Railway Journal and Electric Railway Review

VOL. XXXVI.

NEW YORK, SATURDAY, DECEMBER 31, 1910

No. 27

PUBLISHED WEEKLY BY

McGraw Publishing Company

239 WEST THIRTY-NINTH STREET, NEW YORK

JAMES H. MCGRAW, President.

HUGH M. WILSON, 1st Vice-President. A. E. CLIFFORD, 2d Vice-President.

CURTIS E. WHITTLESEY, Secretary and Treasurer.

TELEPHONE CALL: 4700 BRYANT. CABLE ADDRESS: STRYJOURN, NEW YORK.

HENRY W. BLAKE, Editor.

L. E. GOULD, Western Editor.

Associate Editors:

RODNEY HITT, FREDERIC NICHOLAS, WALTER JACKSON.

News Editors:

G. J. MACMURRAY, FRANK J. ARMEIT.

CHICAGO OFFICE.....1570 Old Colony Building
CLEVELAND OFFICE.....1015 Schofield Building
PHILADELPHIA OFFICE.....Real Estate Trust Building
EUROPEAN OFFICE....Hastings House, Norfolk St., Strand, London, Eng.

TERMS OF SUBSCRIPTION:

For 52 weekly issues, and daily convention issues published from time to time in New York City or elsewhere: United States, Cuba and Mexico, \$3.00 per year; Canada, \$4.50 per year; all other countries, \$6.00 per year. Single copies, 10 cents. Foreign subscriptions may be sent to our European office.

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

NOTICE TO ADVERTISERS.

Changes of advertising copy should reach this office ten days in advance of date of issue. New advertisements will be accepted up to Tuesday noon of the week of issue.

Copyright, 1910, by MCGRAW PUBLISHING COMPANY.

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

Of this issue of the ELECTRIC RAILWAY JOURNAL 8500 copies are printed.

NEW YORK, SATURDAY, DECEMBER 31, 1910.

CONTENTS.

Our Index of Articles.....	1261
Traffic Suggestions from Conductors.....	1261
The Outstanding Securities.....	1262
Public Service Companies and Policies.....	1262
Safety on Interurban Railways.....	1262
Encouraging Invention and Extraordinary Inspection.....	1263
Reinforced Concrete Car House, Dayton, Ohio.....	1264
Hints from a Conductor.....	1269
New Through Rates and Joint Rates in New York.....	1270
Hearing on Commutation Rates in New York.....	1270
Train Staff System on the Warren & Bristol Railroad.....	1271
Meeting of the New England Street Railway Club.....	1272
The Sale of Reduced Rate Tickets on Cars.....	1274
Shelter Stations on Illinois Traction System Lines.....	1276
Monthly Statistical Report of Illinois Traction System.....	1277
Marseilles (Ill.) Hydroelectric Development.....	1277
Testimony Before Railroad Securities Commission.....	1278
Second Conference on Interurban Operating Methods in Indiana.....	1279
Progress on Worcester Consolidated Plant.....	1280
Automobile Equipment of Kansas City Railway and Light Companies.....	1280
Large New Indianapolis Power Plant.....	1281
Spokane & Inland Railway Completes Bridge Over Spokane River.....	1281
Approval of Bond Issues for Coney Island & Brooklyn Railroad.....	1282
Three Cable Anchors.....	1284
A New Freight Locomotive for the Calt, Preston & Hespeler Railway.....	1284
Cars for the Utah Light & Railway Company.....	1284
Pay-as-You-Enter Cars for Omaha.....	1285
Seamless Cold-Drawn Steel Trolley Poles.....	1285
Recording Maintenance Cost of Individual Cars.....	1286
News of the Week.....	1287
Financial and Corporate.....	1291
Traffic and Transportation.....	1293
Personal Mention.....	1295
Construction News.....	1296
Manufactures and Supplies.....	1298

Our Index of Articles

This number completes the current volume of this paper and, according to our regular practice, includes the index to the articles in the volume. The publication of the index this week involved the entry of the articles in this issue after the paper was prepared for the press, and hence some additional expense and delay. But the advantages to the subscriber of having each volume complete with its index before he begins to receive copies of papers belonging to the next volume are so manifest as to outweigh any disadvantages which the plan entails. A year ago we published in the editorial columns of this paper a statement of the principles upon which our indexes are compiled and briefly our views of the best method of using these indexes, so that the subject need not be further discussed here. We shall only say that we have paid the same amount of careful attention to the preparation of the index in this volume as in previous volumes and have attempted to make it even more nearly perfect. Most of the articles appear under several entries, and to long articles in which various topics are discussed have been given as many as 10 and even 20 entries. While every developing art is accompanied by changes in the nomenclature of the apparatus used, instances of this kind have been few this year, and, so far as this index is concerned, have not occurred in any of the important key words. We believe that the more any good index of periodical literature is used the more its value becomes apparent, and we trust that this will be the case with the indexes of the ELECTRIC RAILWAY JOURNAL.

Traffic Suggestions from Conductors

On railways which cannot afford an inspection system it is a good practice to invite the conductors to submit suggestions for improvements in the transportation service. The fact that no one is more familiar than the conductor with the traffic conditions over his particular route was brought out very forcibly by these means a short time ago in a small Eastern city where the railway offered prizes for available ideas. As the result of the suggestions turned in it was found possible to reduce the amount of transfer business and dead mileage in directions which had never occurred to the company. Furthermore, several pertinent changes in car equipment were also suggested and accepted, among them being the introduction of automatic ventilators. The company is highly gratified with its experiment, for by this call for co-operation it has saved in one year far more than the total amount of the prizes, it has become better acquainted with the wants and habits of its patrons and it has made all of its employees feel that they too can have more than a perfunctory share in the operation and maintenance of the transportation service.

The Outstanding Securities

Conservative views upon one point of importance and seriousness have been expressed by several of those who have given their opinions at the hearings before the Railroad Securities Commission appointed by President Taft to investigate the practicability of federal supervision of securities issued by common carriers. They have said that the jurisdiction of any governmental regulating body that may be appointed to pass upon such securities should be limited absolutely to new securities. We assume that the natural effect of this policy would be to give some sanction to outstanding issues of stocks and bonds. This would reassure the holders of outstanding securities. Of course, no governmental authority could be expected to bestow integrity in flagrant cases of over-capitalization and excessive impairment of the capital value of the physical and non-physical property. But the assurance of fair protection to holders of outstanding securities issued for value would contribute a confidence which is needed in the general situation. The question of the fate of outstanding securities is one that affects not only thousands of individual holders throughout the country, but also many thousands whose combined savings, now in the custody of banks and insurance companies, are invested at rates of interest that are so small as to imply perfect safety of the principal.

Public Service Companies and Policies

Mr. McCarter's address in Boston on "The Electric Railway Situation," published in abstract in our issue this week, is a common-sense view of a much debated question. He did not attempt to justify the policies which had actuated all public utility companies in the past, but saw equal, if not greater, danger to the public from too wide a swing of the pendulum in the other direction. Mr. McCarter might have added that the basis for the extreme reactions which are often experienced in popular movements of the kind which he was discussing is usually to be found in politics. Fortunately, the responsibility of office usually sobers even radical men, and this fact has constituted the salvation of democratic government. It has given rise on numerous occasions to the complaint that post-election performance has not "squared" with pre-election promise. This is a serious charge, but it is not so serious as one that an elected officer, with all the facts before him, did not administer the law in accordance with his oath of office and did not do his duty to the whole people, instead of simply pleasing the portion which elected him. Mr. McCarter approved of intrusting to commissions the supervision of public utility corporations to prevent overcapitalization and secure proper service, but he did not think they should administer the properties, as some have attempted to do. Finally, he scored the policy which would exclude from all activity in civic and political matters the responsible officials of public utility corporations. Modern business life is essentially corporate, and the corporations necessarily attract the services of many, if not most, of the men with broad executive ability and experience. These men may be railroad men or they may be managing the affairs of some other public service property or other corporation. But they are primarily citizens, and to disregard their suggestions upon subjects to which they have given the study of a lifetime, on the ground that they were disqualified because of their connections, would be a public misfortune, as well as an individual injustice.

SAFETY ON INTERURBAN RAILWAYS

During the past two weeks three conferences between State officials and interurban railway managers have been held in the Middle West to discuss means for improving the safety of operation of high-speed electric roads. The recommendations of the railroad commissions and the governors of Indiana and Illinois were strikingly similar. The officials of each State desire a higher standard for interurban trainmen and the immediate adoption of the block system on all lines of heavy traffic. A serious problem confronts the interurban railways in this territory. Governor Marshall of Indiana intimated that drastic legislation might be necessary, in order to bring about the improvements in operating methods which were deemed absolutely essential, although it was admitted that these improvements, if carried out as they should be, might be so costly that there would be little or nothing left from the operating income of many roads to pay interest on the bonds, to say nothing of dividends on the stock. A gratifying spirit of harmony and unity of purpose, however, was manifested on both sides at these conferences, and they promise to result in some immediate reforms which will go far toward improving the safety of interurban railway travel.

At both the Indiana and the Illinois conferences emphasis was laid on the importance of investigating the character and previous record of applicants for positions as interurban motormen and conductors. It was claimed that by means of forged letters of recommendation or by other dishonest practices men discharged by one company have obtained employment from another company. The Indiana commission in its report cited the record of the conductor who was partly responsible for one of the most serious interurban wrecks last fall. In his application he stated that he was a farmer and had never before been employed by a railroad. This was false, as he had been employed at one time as a telegraph operator on a steam railroad. It was agreed at the Illinois conference that it would be desirable to have the Legislature enlarge the powers of the railroad commission so as to give the latter authority to require the use of a uniform employment application blank, with provision for suitable penalties for making false statements thereon. In this connection it may be interesting to state that the penal code of the State of New York imposes a severe penalty for making false statements on application blanks. Section 570 of the code reads as follows: "A person who obtains employment or appointment to any office or place of trust by color of or aid of any false or forged letter of recommendation or of any false statement in writing as to his name, residence, previous employment or qualifications * * * is guilty of a misdemeanor and is liable to imprisonment for not more than one year or a fine of not more than \$500, or both." Many electric railway companies in the State print this extract from the penal code at the top of the application blank as a warning and require all applicants to swear under oath before a notary that the answers made by them are true and correct. Unfortunately the statute is seldom enforced with severe punishment, and we doubt if all the railway companies to which protection is thus afforded under the law are much, if any, more immune from the vicious "floaters" than companies in other States which have no statute of this kind. Any man who is caught in the act of lying about his previous experience ought to be punished to the limit of the law, and the law should be adequate to protect both the company and

the public in this respect, for both are vitally concerned in it.

The training of interurban trainmen is quite as important as their selection. The Indiana commission has recommended that at least one year's experience in steam or interurban train service should be required of all interurban motormen, but the recommendation of the Illinois commission is merely that motormen "should have as long experience as possible." It is coming to be generally conceded that men with previous steam railroad experience in the majority of instances do not make the best interurban trainmen. The lower scale of wages paid to interurban employees does not serve to attract good men from steam railroad service, and those men who do change have to be taught as much as a green man. Furthermore, they are inclined to be careless and do not seem to appreciate the responsibility of having charge of a car. Interurban railway service provides no adequate training school for prospective motormen employed in subordinate positions on the cars. An idle man in the motorman's cab would only be a menace. The Illinois Traction System has inaugurated a plan of putting new men to work as brakemen on freight trains, but there are only a few interurban roads which at the present time are operating enough freight cars or passenger trailers to afford an opportunity for training a sufficient number of men to take the place of those motormen who leave the service each year. This phase of the difficult problem of training employees cannot be solved by legislation. No rigid rules of this kind can be laid down that will provide absolute safeguards against the employment of incompetent men and at the same time will not bar competent and efficient men from the service.

Both commissions recommend that motormen shall not be required to assist in handling baggage and express on and off the cars. This imposes a hardship on the railway companies and is of doubtful value as a safety precaution. This recommendation was defended on the ground that during the time spent at station stops the motorman should have an opportunity of consulting his train orders and timetables. If the train orders are placed in a clip in the front of the motorman's cab where they can be seen at all times, there should be no necessity for the motorman to consult them at station stops.

The Indiana officials seem to be a little hazy in their own minds as to their recommendation that all lines be equipped promptly with block signals where the volume of traffic requires it. In the discussion at the first conference the Governor and the commissioners seemed willing to accept an installation of dispatcher's signals as fulfilling this requirement. It is possible, of course, to operate dispatcher's signals substantially as a manual block system, but this would require the crew of every car to stop at every signal and report to the dispatcher before resetting the signal arm to the clear position. Dispatcher's signals are very useful and efficient safeguards, but they do not take the place of a block signal system. We believe that it would be most unwise for the State officials to order or recommend the equipment of all lines with dispatcher's signals at this time. If they make no specific recommendations regarding the type of signals to be installed, but officially approve the dispatcher's signals, which are the cheapest and the quickest to install, the result will be that a large number of roads will proceed to equip their lines with

these signals in order to comply with the recommendations of the commissioners. They may then have all the work to do over again in a few years, if there are further developments in an automatic, a controlled-manual or a staff signal system adapted for electric railways.

ENCOURAGING INVENTION AND EXTRAORDINARY INSPECTION

Occasions arise in almost every line of manufacture or repair where an employee makes an invention or improvement of such limited applicability that it is not worth being patented for general sale. This is especially true of many so-called electric railway shop "kinks." Eventually a "kink" may save hundreds and even thousands of dollars for the inventor's employer, yet it may have but a very small field for commercial exploitation. Thus, in one instance, a railway effected a very large saving because one of its men discovered a method for replacing broken glass in its special cash boxes without dismantling the entire receptacle; in a second instance accidents were averted by an improvement in the vestibule door and step mechanism; in a third instance appreciable economies were obtained by devising a home-made electric welding system.

Employers often want to recognize merit of this kind, but it is not easy to determine the best way to do so. The promotion of the inventor is not always the best solution to the problem, because he often lacks executive ability. Nor is it generally satisfactory to pay lump sums for individual inventions, first, because their value is often problematical, and, second, because the inventor is likely to have a very exaggerated idea of the importance of his improvement. Possibly the best method is to have a suggestion box with a permanent standing offer of two or three prizes for the best ideas, whether they are adopted or not. This policy will keep the men constantly reminded of the fact that they, too, are considered a thinking part of the organization. It should not be forgotten that in many men the love of praise is even stronger than the love of money. In one highly efficient shop organization many betterments have come from the rank and file not through promises of financial award but on account of the department manager's policy to give ample public credit to every man who suggests an improvement. As a matter of fact, nothing will discourage the workmen more than a narrow-minded shop superintendent who takes all credit to himself for the original thoughts of his subordinates.

A subject cognate to that of encouraging invention is that of inducing electric car inspectors to look for those minute defects which if not observed in time might lead to disaster on the very next trip of the car. Such close examinations are not essential in city operation, but they are an absolute necessity for high-speed lines on which even a weakened gear case may lead to a costly derailment. Thus a service of extraordinary merit is performed by the inspector who notes, say, a hair-line crack in an axle or truck frame, despite the condition that the equipment is covered with dirt and must be examined in poorly lighted pits. One large railway has made it a practice to give an extra day's pay for every revelation of incipient danger. On other roads it might prove more satisfactory to have a publicity system and combine it with occasional prizes for extraordinary records. By doing this they would follow the custom of some lines which reward track gangs and station agents for superior maintenance.

REINFORCED CONCRETE CAR HOUSE, DAYTON, OHIO

BY J. C. LATHROP, SUPERINTENDENT OF CONSTRUCTION, PEOPLE'S RAILWAY COMPANY

During the summer of 1910 a car house was built at Dayton, Ohio, for the People's Railway Company, a subsidiary company of the American Railways Company, of Philadelphia. Reinforced concrete was used throughout except for the walls and

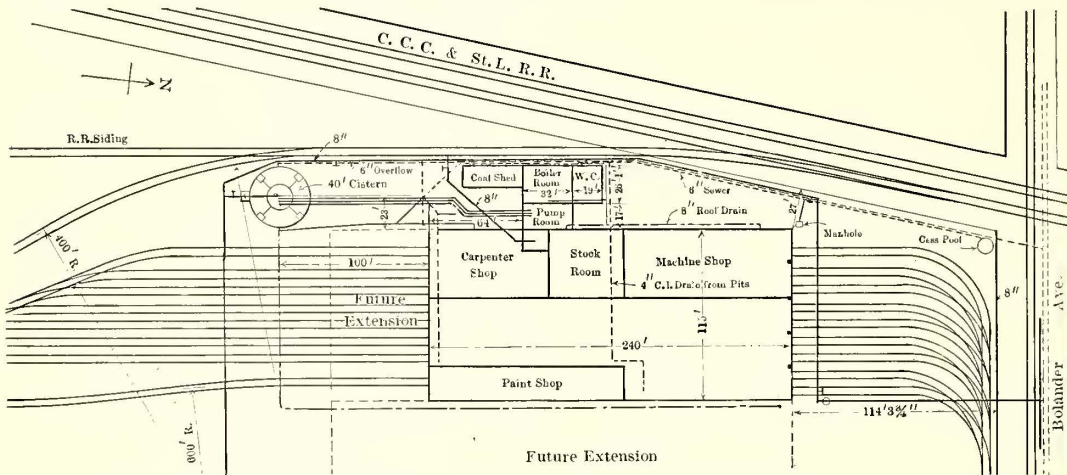
1909, but owing to the extremely severe weather during the following two months, ground was not broken until Feb. 28, 1910. The contract was taken with a time limit of 90 working days for the completion of the entire work. However, on account of numerous unforeseen conditions and delays, the work was not completed until a total of 140 working days had elapsed.

The present layout provides temporary quarters for a machine shop, carpenter shop, paint shop and storeroom, which

occupy about one-half of the total space. Pits were installed throughout, as it is expected that this portion of the building will be used for car storage at some future time. At present certain portions are plank ed over.

MACHINE SHOP TOOLS AND WHEEL SET REPLACER

The machine shop is equipped with two 8-ton cranes, each having two 4-ton hoists. One hoist on one of these cranes is electrically operated, while the other three are operated by hand. The

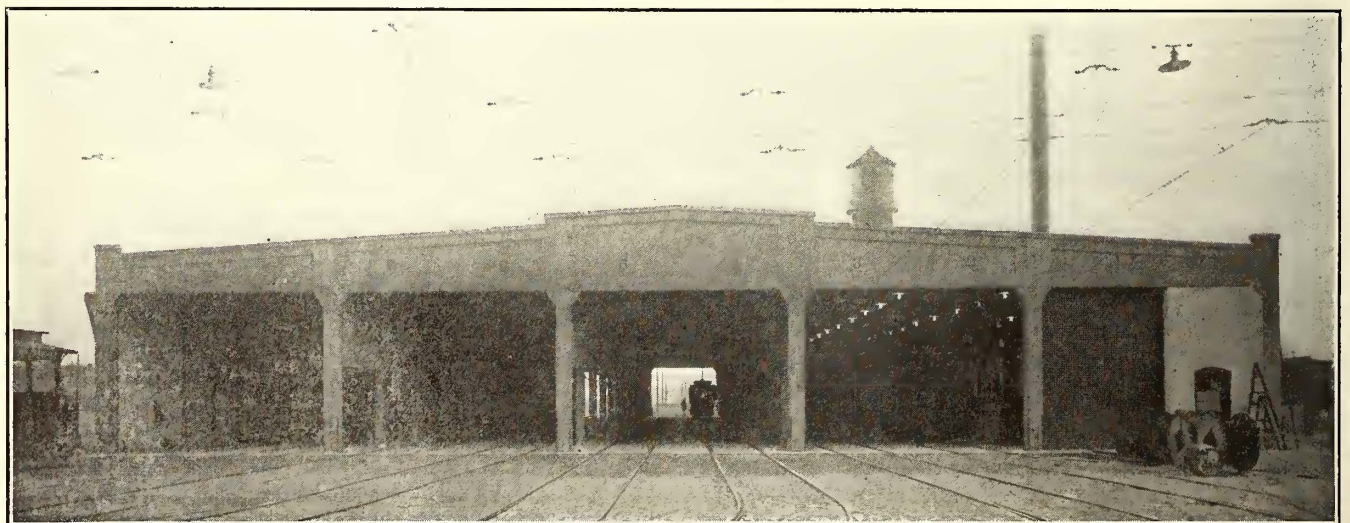


Dayton Car House—General Plan of Property and Divisions of the Main Building

partitions, which were respectively brick and tile. This structure is located in the southwestern part of the city, in a rapidly growing district called Edgemont. The north end of the building faces Bolander Avenue, and the westerly side is parallel with the tracks of the Big Four Railroad. The general layout of this building, together with the tracks, railroad switch, etc., is shown on the accompanying plan.

The car house proper is 115 ft. wide (or five 23-ft. bays) x 240 ft. long (or 15 16-ft. bays), with an additional wing on the west side, containing a pump room with basement, carmen's room, boiler house, toilet room and coal shed. The portion now built is only a part of a future building layout including an office building and quarters for various departments. A switch from Bolander Avenue connects with a ladder track on the company's property at the northeast corner of the car

shop is also equipped with a large two-center lathe, for turning both axles and wheels, a wheel borer, a 400-ton wheel press and a drill, which are all operated by individual motors. In addition to the foregoing a smaller lathe has been installed, together with other minor machinery, all of which is operated by a line shaft belt connected to a single motor. An additional device has been installed to remove and replace a set of wheels quickly. This contrivance consists of a platform on the main floor level 6 ft. long in the direction of the track run and 3 ft. on either side of the track, a total width of about 10 ft. 8½ in. Sections of rail 6 ft. long cut from the track, together with the platform, are supported on two I-beams crossing the pits, which in turn rest on two other beams directly under the rails. The ends of these lower beams normally rest on concrete walls, while the beams are hung from



Dayton Car House—Front View, Showing Four Storage Bays and One Shop Bay

house lot. From this ladder nine tracks enter the car house. Seven of these tracks pass clear through the building and join another ladder in the south part of the lot. An eighth track, which is an extension of the main outbound track to the south, enters the paint shop from the south.

The general contract for this structure, together with the plumbing and drainage system and cistern, was let on Dec. 31,

the cross beams in such a manner that they can be pulled into the pit clear of their supports when they are relieved of the weight of the platform by the cranes. A pit is provided below the level of the platform so that the platform level can be dropped flush with the pit floor level.

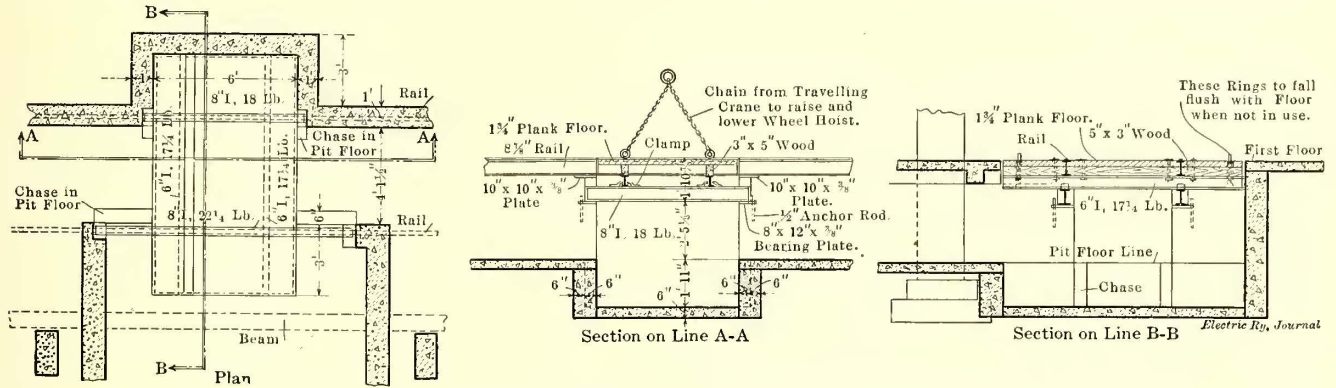
The sequence of operation with the wheel set replacer is as follows: A car is placed so that one pair of wheels rest on

the platform. Then while one crane lifts the end of the car body, together with the truck, the platform is drawn up slightly by means of the two hoists on the other crane. Then the two I-beams directly beneath the rail are pulled out by hand, toward the center of the pit, and the whole platform together with the set of wheels to be removed is dropped until the platform level is down to the pit level. The wheels are then rolled to one side and the new ones placed on the platform and hoisted

shop and the carpenter shop are excellently lighted, each having five skylights, while each 16-ft. bay on the west side of the building has a large double window 8 ft. x 11 ft.

PAINT SHOP

The paint shop in the southeast corner of the building is so arranged that the cars may be run into it from the north on either side of the two easterly tracks, or from the south on a single track, one rail of which is common to one of the two



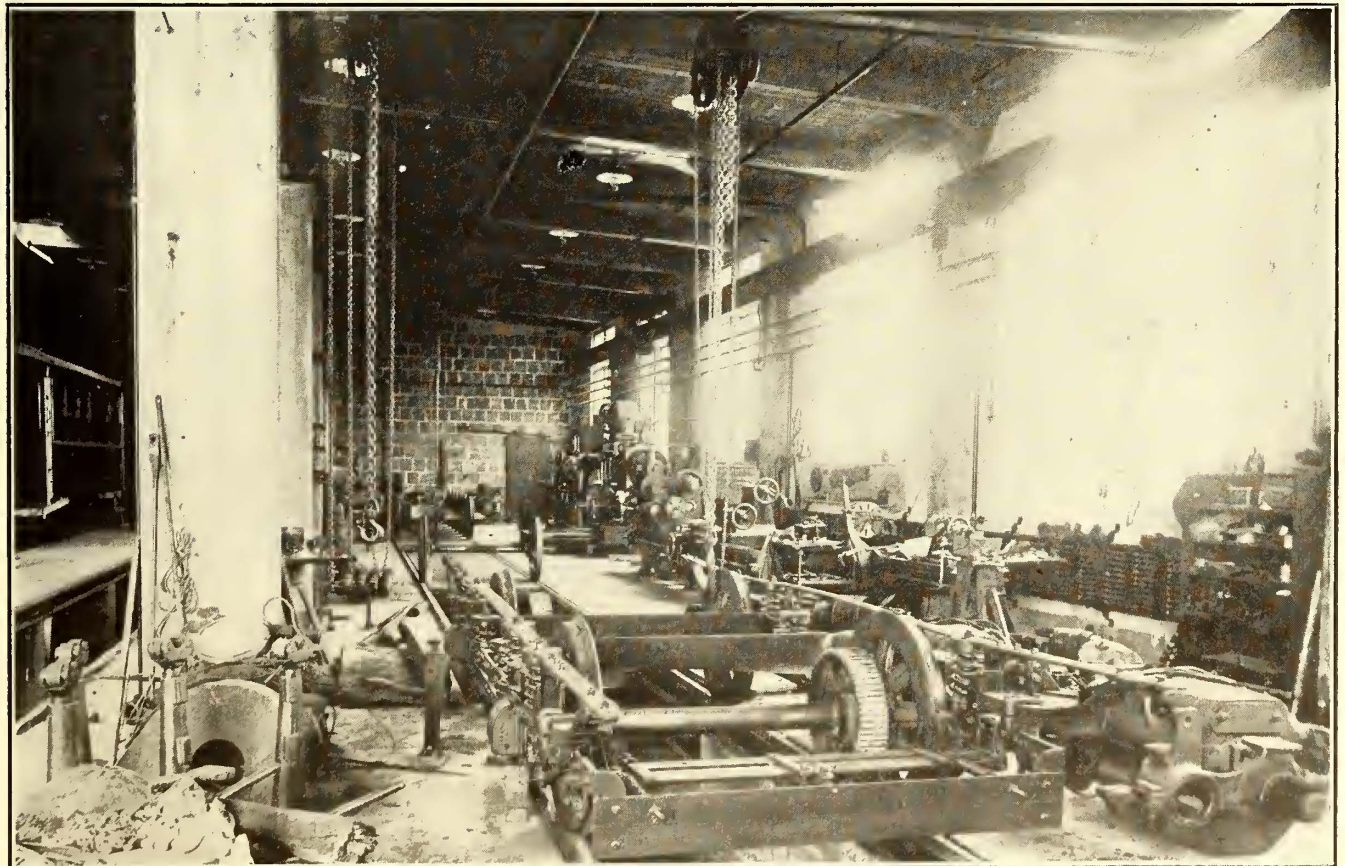
Dayton Car House—Details of Apparatus for Transferring Wheel Sets from and to Cars

to place. This entire operation can be completed by two men in about 30 minutes. It is thought that this method is original with the writer.

other tracks. Three cars can be accommodated at one time. This shop is lighted by seven skylights and by a large double window in each bay on the easterly side.

The street railway in Springfield, about 25 miles northeast of Dayton, is owned by the American Railways Company and

DETAILS OF CONCRETE CONSTRUCTION
The column foundations, wall foundations and floors on



Dayton Car House—The Truck and Machine Shop

it is intended that this machine shop will handle all the work for that company as well as that for the People's Railway Company.

CARPENTER SHOP

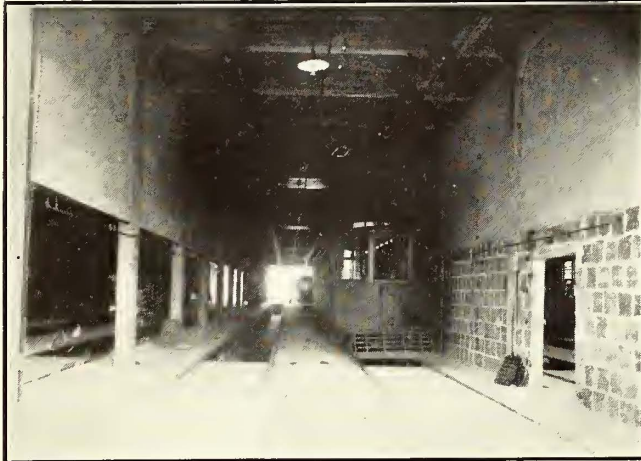
The carpenter shop is equipped with a facer, a circular saw, a band saw and a mortiser, all operated by individual motors. It also has several ordinary work benches. Both the machin-

earth were composed of concrete in the proportion of 1-3-5. All the reinforced concrete work throughout the building was composed of concrete in the proportion of 1-2-4. A considerable portion of the gravel and sand excavated from the pits, cistern foundations, etc., was found suitable for concrete. Crescent Portland cement was used throughout.

Reinforced concrete piers on 12-ft. centers support the

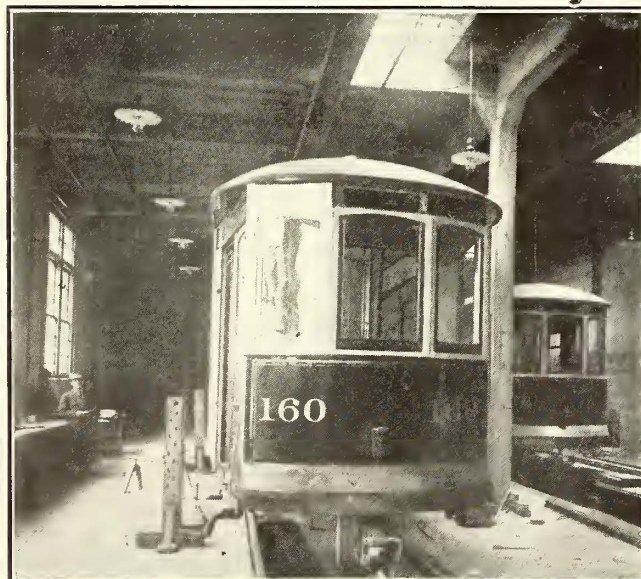
dummy or floor between the tracks and the 9-in. center-bearing girder rails which form the track. This leaves the pit space free the entire length of the pit. Reinforced concrete steps at both ends of the pits lead from the first floor level to the pit floor. The rails are of the Kansas City center-bearing type to prevent water entering the pits from the space between the tracks.

The concrete columns in the interior of the building are 12 in. square, reinforced by four $\frac{7}{8}$ -in. rods, while the front and rear columns are 14 in. x 18 in. The roof girders running lon-



Dayton Car House—Type of Curtain Wall and Partition

gitudinally have a 16-ft. span and are 12 in. wide x 20 in. deep. The beams which run across the building have a 23-ft. span and are 8 in. wide x 16½ in. deep. This system of beams and girders supports a 4-in. roof slab which is covered with a five-ply Barrett roof. The columns on the east side of the building have large reinforced concrete brackets projecting about 8 ft. to provide for the future extension shown in the plan drawing on page 1264, to which previous reference has been made.



Dayton Car House—Roof Construction and Lighting

The fire partitions, which run longitudinally with the building between the columns, from the roof to within 8 ft. 6 in. of the first floor, were made of Trussit metal with 1¼ in. of cement plaster. This partition is hung by $\frac{3}{8}$ -in. rods from the roof girders and is protected at the bottom by a 3-in. channel. All temporary partitions around the shops and the storeroom are constructed of 8-in. hard-burned tile. All openings in these walls are provided with standard fire doors. The front and rear of the building and the north end of the paint shop are equipped with Kinnear rolling steel doors.

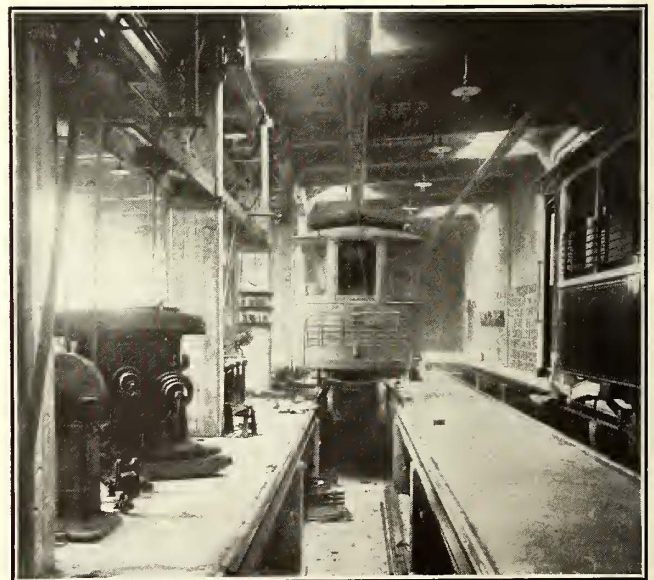
Sand lime bricks laid in cement mortar were used for all exterior walls. These bricks, being light gray in color, harmonize nicely with the exposed concrete, such as columns, parapet walls, etc. The wing on the west side follows in general the same details used in the car house proper, the boiler room, however, standing much higher than the rest of the building. A coal shed adjoins the boiler room and has concrete walls about 6 ft. high, above which is a light steel frame to support the corrugated iron roof.

PLUMBING AND DRAINAGE SYSTEM

The extensive drainage system which has been provided may be divided into three parts: first, roof drainage, which is carried to the cistern through 8-in. terra cotta drain tile; second, drainage to a storm sewer in Bolander Avenue, consisting of overflow from the cistern, drainage from the car-washing floor in the south part of the barn adjoining the paint shop, drainage from the pits and surface drainage from trenches at either end of the building; third, a 6-in. terra cotta sanitary sewer from the toilet room to the cesspool.

The main drain to the storm sewer is a 12-in. terra cotta pipe, with 12-in. connections from the trenches at the ends of the building and 6-in. connections to the cistern overflow and the pit drain. The cesspool is 10 ft. 8 in. in diameter x 12 ft. deep. The lower portion is built of dry rubble while the upper 4 ft. 6 in. is concrete, the whole covered with an 8-in. concrete roof. A cast-iron manhole is provided for inspection. The cesspool is located near the front of the lot so that the 6-in. sewer need not be disturbed but continued past the cesspool and connected to a sanitary sewer in case one should be built. All drain pipes inside the building are made of cast iron.

Water for all service connections is taken directly from the elevated tank riser through a 3-in. main which is also used for filling the tank from either the cistern or well. As the soft water is not suitable for drinking, a 1-in. connection has been made with the city water main leading to taps in the shops and car men's room. This can also be connected with the service lines when desired. Hot water is provided for the toilet room and car washing by a heater separate from the main boiler.



Dayton Car House—In the Overhauling Section

Two 1¼-in. hose bibbs and six ¾-in. hose bibbs are provided for car-washing purposes.

LIGHTING

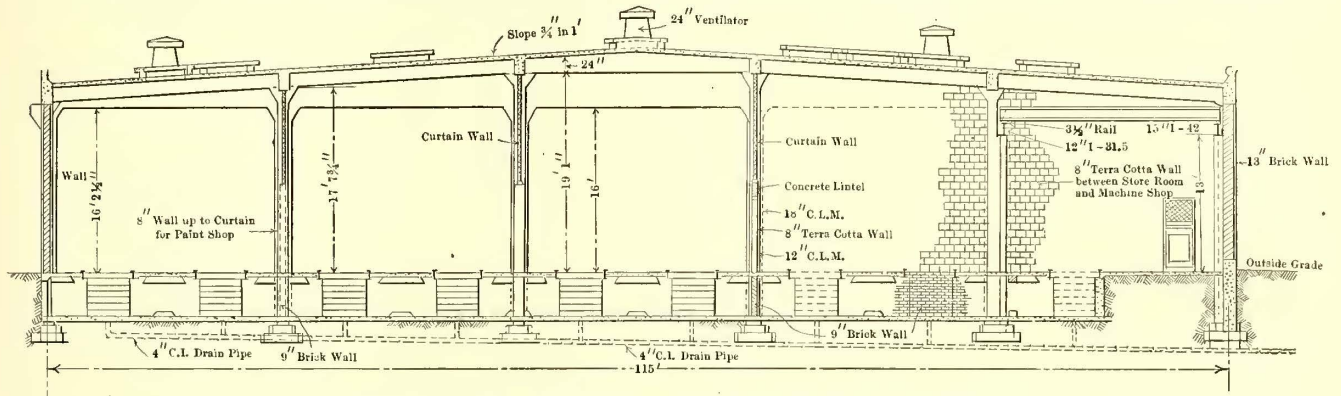
The interior is well lighted in the daytime by means of 26 reinforced concrete skylights 4 ft. x 7 ft. 4 in., while the shops have in addition large double windows 8 ft. wide x 11 ft. high. At night the machine shop and carpenter shop are each lighted by 20 100-watt tungsten lamps placed just below the ceiling; the remainder of the building has similar lamps at frequent intervals. All wires are carried just below the roof slab in

conduits, which were inserted in the beams and girders during construction.

HEATING SYSTEM

A hot water heating system has been installed to provide a temperature of 65 deg. Fahr., in the car house proper and 70 deg. in the paint shop in zero weather. For the heating plant an old 300-hp Berry boiler was taken from the power house of the People's Railway Company and installed in this boiler room. The Hunt industrial railway installed from the coal shed to the boiler room was provided with one car for hauling

consists in a floor space unbroken save by necessary pits and columns while each bay is segregated for fire protection by the longitudinal curtain walls extending from the roof down to the proper level at which the aisle sprinklers should be placed as shown in the cross-section on this page. The aisle sprinklers are spaced at 8-ft. intervals along the bottoms of these curtains and the ceiling sprinklers at 8-ft. intervals along the center line of each bay between the two tracks in that bay. It is believed that these sprinklers would confine a fire to the car in which it originated or, at the worst, to the two cars



Dayton Car House—Cross-Section, Showing Fire Curtain Walls

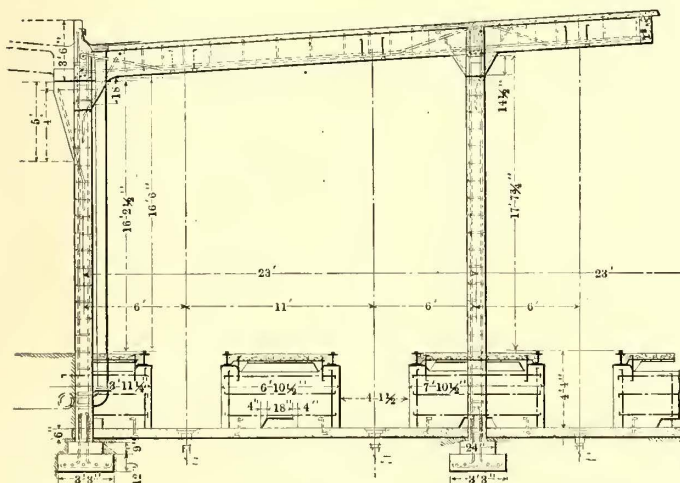
the coal and another for removing the ashes. Five-inch supply and return mains have been provided across the building, both of which are concealed in pipe ducts below the pit floor. These mains supply hot water to coils of 1 1/4-in. pipe on both sides of the pit underneath the dummies or floors between the tracks. and to overhead coils in the lavatory, basement of pumproom, etc.; also to numerous cast-iron radiators in the shops and car men's room. The heating plan is shown on page 1268.

In designing the building, provision was made for a space between the floor of the dummy and the top of the piers which support the tracks, so that these 1 1/4-in. coils could be run the full length of the building. The water is forced through the entire system by means of a centrifugal circulating pump with direct motor drive. The pump is located in the pump-room basement. Suitable thermometers are supplied on both the

which might be standing side by side in the same bay at the time.

The sprinkler system is installed in four separate lines, leading respectively to pit sprinklers, aisle sprinklers, roof sprinklers and hose stand pipes. It includes a cistern holding 92,000 gal., an elevated steel tank holding 50,000 gal. and a 6-in. connection to the city water main. The elevated tank is so arranged that it can be filled by the company service pump, with a capacity of 200 gal. per minute, from the cistern, the well or the city main.

The sprinkling system proper throughout the building consists of the Grinnell dry-pipe, automatic sprinklers. There are 514 sprinklers in all on three dry-pipe valves, 168 of which are in the pits about 1 ft. under the floors between the tracks; 136 are aisle sprinklers and 210 are roof sprinklers. In addi-



Dayton Car House—Concrete Reinforcement and Details of Pit Construction

supply and return mains together with other necessary automatic apparatus.

FIRE PROTECTION

Although the building itself is thoroughly fireproof in all respects, the contents are very inflammable, hence it was considered desirable to have the utmost possible security against fire. From the fire protection standpoint, the essential feature of the design (as developed by A. S. Kibbe, then chief engineer of the American Railways Company, in consultation with Everett U. Crosby, of the Independence Inspection Bureau),

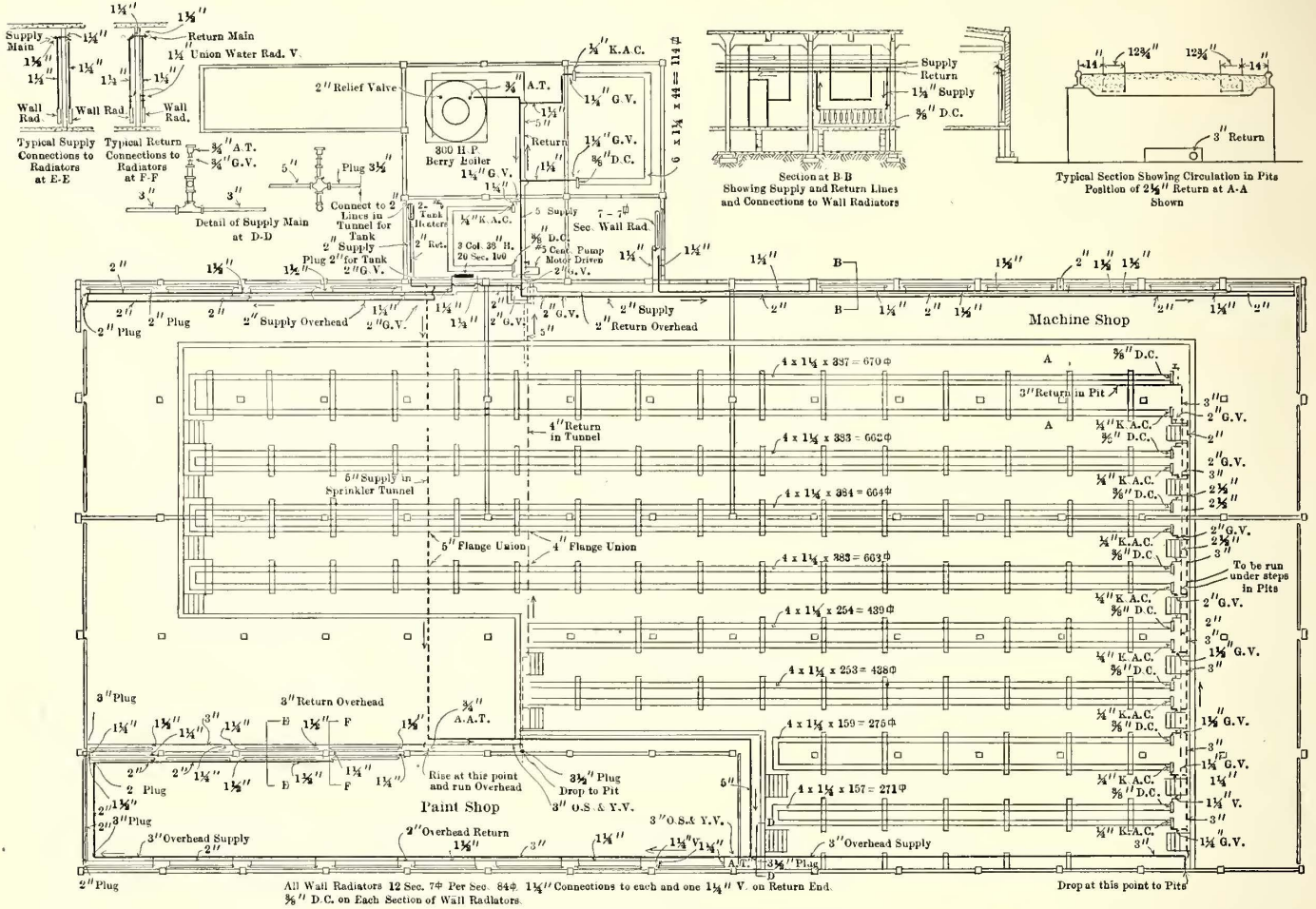
tion there are 10 hose standpipes each provided with 2 1/2-in. hose angle valves, which are located as follows: One in the paint shop, one in the carpenter shop, two in the storeroom, two in the machine shop and four in the car house proper. These 10 hose standpipes are all connected with one dry-pipe valve.

All the four valves are located in the valve pit adjoining the pump-room basement. Three of them are shown in one of the half-tones on page 1269. The air compressor, which is used to keep the proper air pressure on these valves and in

the various pipes, is located in the pump-room basement. This compressor also supplies compressed air where needed in the shop, as valves are connected with a common air tank by suitable reducing valves.

A further system of 8-in. outside mains has been installed on the north, east and south sides of the building, connected

Four mains from the four valves are carried under the pit floor from the valve pit across the building. Near the center of the building connections are made to these mains, running to the north in another pipe duct. An additional duct has been provided in part of the building and blank flanges are attached to the main at this point to provide for a future exten-

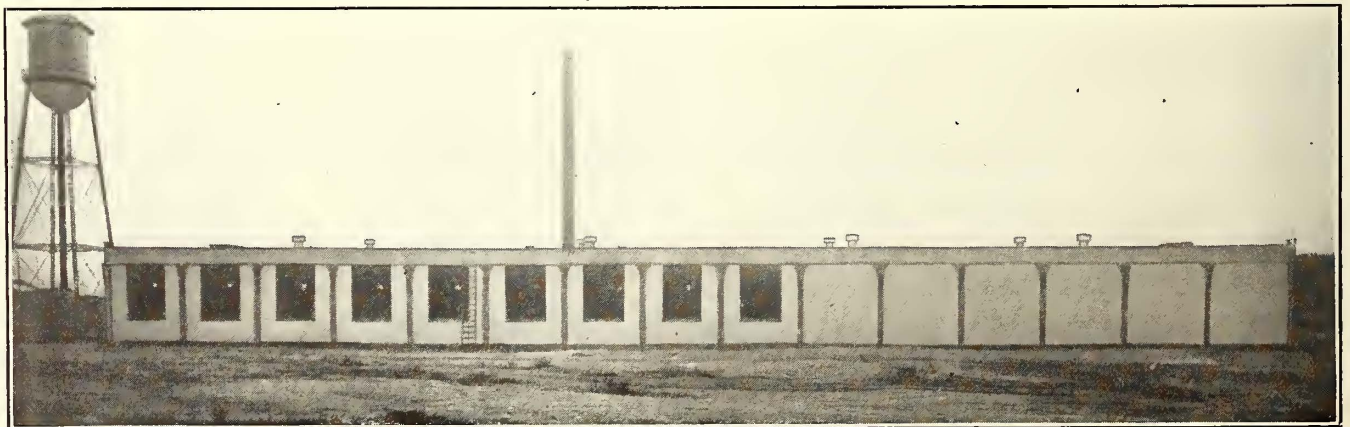


Dayton Car House—General Plan and Details of the Heating System

at one end by a 6-in. main to the city water main on Bolander Avenue. A hydrant has been provided at this point, which is intended to be opened only in case of fire because another 1-in. connection to the city main has been provided for service use. The other end of the 8-in. main is connected directly to

sion of the building in a southerly direction. Plugged flanges are provided at the end of the main on the east side of the paint shop to provide for future extension easterly.

A complete outfit of signals, such as high and low tank alarm, sprinkler alarm, low pressure alarms for the four valves,



Dayton Car House—Side View of Building, with Fire Tank at the Left

the 8-in. riser to the steel tank and an 8-in. lateral from this main also leads directly to the valves. Thus the entire system is at all times under a pressure due to the elevation of the water in the tank and in case of an emergency it can be further connected with the city main, where a pressure up to 80 lb. or 90 lb. may be expected.

etc., have been located on the west wall of the storeroom as there is always an attendant at that place.

The cistern is 40 ft. in diameter and 13 ft. deep with an 8-in. concrete bottom on earth. This bottom had to be reinforced on account of the possibility of back-water. The outside walls are 6 in. thick and the roof is a 4-in. slab supported by four

concrete beams, two of which frame directly into the footing piers, while the two center beams frame into girders which in turn frame into the same piers. These four piers in the outside of the walls of the cistern are on 26-ft. 5-in. centers and support the legs of a 75-ft. tower, which carries a 50,000 gal. steel tank. This tank is cylindrical in form with spherical

The Hall-Cronan Company, of Dayton, was the general contractor for the building including the cistern and cesspool with sewer and drains. The General Fire Extinguisher Company, of Providence, R. I., was the contractor for the heating and sprinkling system, except the steel tank, which was furnished and erected by the Chicago Bridge & Iron Works.

HINTS FROM A CONDUCTOR

The Philadelphia Rapid Transit Company has inaugurated the practice of placing in its cars a card on which are printed the car number, run number, conductor's number and the motorman's number. This card therefore gives at a glance all the information which an inspector or other interested person may desire in regard to identifying a car and its crew.

It is the custom of many railway companies to detail inspectors, or even conductors, to direct passengers during the rush hours at crowded places. The men assigned for this duty usually wear their ordinary badges. It would be a good idea if these men were to wear a badge with the word "Information," so that those in need of direction would have less hesitation in asking for guidance.

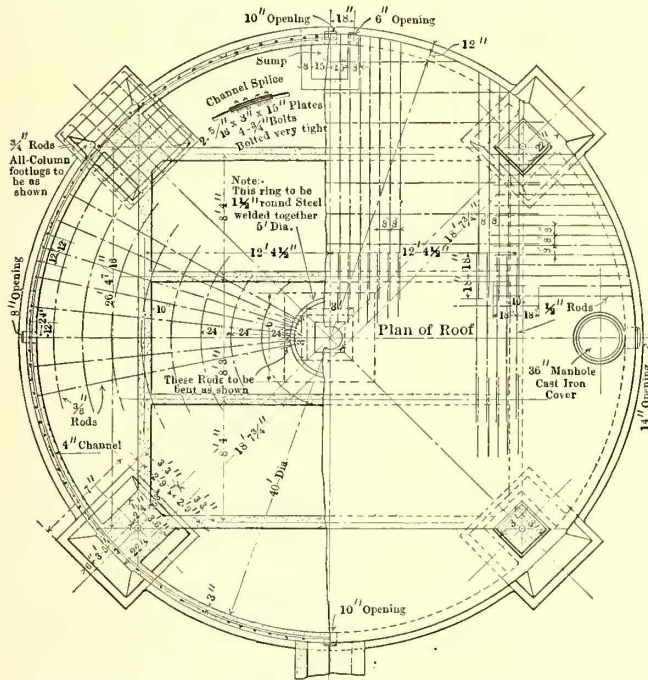
When at Columbus recently the writer was much impressed with the advantages of the horizontal wheel brake as compared with the ordinary spindle type. With the spindle in use the motorman on getting into a tight place must first bring the brake into a certain position and then turn it all the way back and "saw" to stop the car. A wheel brake allows the motorman immediately to tighten the brake with both hands, thus saving considerable time. The wheel brake also saves the motorman's strength and prevents injuries to any one from flying spindles.

The Yonkers Railroad Company and the Union Railway Company, operating in the northern suburbs of New York City, use in the motorman's vestibule a curtain hung from the center of the roof between the motorman's window and the front door. When the motorman reaches the end of his run he gives this curtain a slight pull and it folds up out of the way without further trouble. When he starts the car he simply has to pull it down. The style of curtain generally used is hung on the inside of the front door. If it is not set when the car starts the conductor has to worm his way to the front and attach both halves of the curtain to each window. Furthermore, if the catch comes off the front door the curtains will pull open. An important advantage of the new curtain is that the passengers and conductor can see the motorman at all times, if he should happen to fall.

It is not a very good argument for the value of car advertising in general that many companies which let out their car advertising space do not reserve enough room for their own announcements. It certainly appears unwise to spend a large sum of money advertising in other mediums when much less money is received for the valuable space inside the car. Car advertisements by the railway company itself necessarily attract more attention than announcements carried in the newspapers, because they seem posted in an official place. It would also be a good thing if the railway companies exercised a little more censorship over the character of the advertisements carried. In one instance a department store stated in its advertisement that customers would avoid paying car fare if they patronized that particular store. An advertisement of this kind certainly is not of benefit to the railway company which carries it.

In Toronto a motorman is called a "motor-driver"; a special car is called a "private" car. This company charges 10 cents between 1 a. m. and 5 a. m.

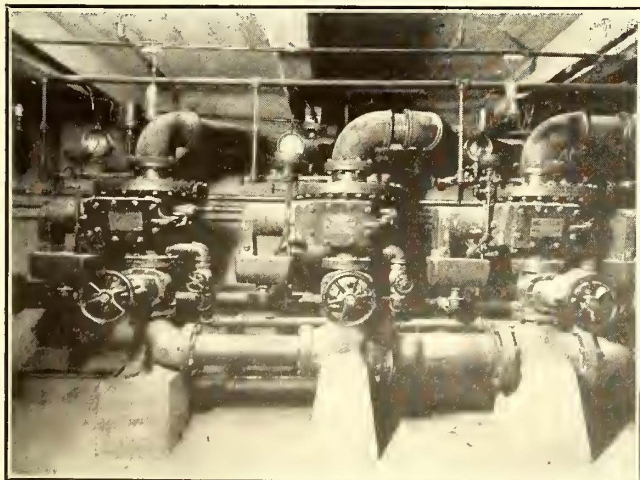
The Public Service Railway, Newark, N. J., last Fourth of July, adopted an ingenious arrangement to sweep firecrackers from the track by tying cloths on to the front of the fenders. This is a valuable hint in places where mischievous boys on the Fourth of July have a habit of throwing lighted crackers in front of an approaching car.



Dayton Car House—Plan and Foundation Reinforcement of Water Tank

bottom and is 18 ft. in diameter x 29 ft. high. The top of the tank is 104 ft. above the pier.

The tower legs are each made up of two 12-in. channels. The metal in the tank proper is 1/4 in. thick, except the roof, which is 1/8 in. thick. The 8-in. tank riser is provided with a three-ply frostproof casing from top to bottom. In freezing weather the water in the tank is warmed by direct circulation



Dayton Car House—Three of the Four Sprinkler System Valves

through a heating coil connected with the hot water heating system.

ENGINEERING

The work described was carried out under the general direction of A. S. Kibbe, while chief engineer of the American Railway Company, and under the direct supervision of George C. Towle and the writer, respectively general manager and superintendent of construction for the People's Railway Company.

NEW THROUGH ROUTES AND JOINT RATES PROPOSED IN NEW YORK

The question of through routes and joint rates between the Fifty-ninth Street line of the Central Park, North & East River Railroad and the Queensboro Bridge shuttle line of the South Shore Traction Company was considered informally before Commissioner Bassett, of the Public Service Commission of the First District of New York, on Dec. 8, 1910. A. C. Hume, secretary of the South Shore Traction Company, appeared for that company and Charles Mellen, of Strong & Mellen, counsel, appeared for the Central Park, North & East River Railroad.

Commissioner Bassett said that the hearing was held to permit the commission to ascertain as nearly as possible the wishes and status of the persons interested. A private session had been held by the representatives of the companies in an effort to bring about a 5-cent joint rate, but there had been a disagreement.

Mr. Hume said that the South Shore Traction Company was willing to establish a joint rate provided it could be arranged on a basis that would not involve a loss to the company. He was not prepared to say what rate should be established, but it should be borne in mind that the distance which the South Shore Traction Company carried passengers was $1\frac{2}{3}$ miles, while the average ride on the Central Park, North & East River Railroad of passengers crossing the bridge would be only a few blocks.

Mr. Mellen said that the nature of the service of the South Shore Traction Company differed materially from that of the Central Park, North & East River Railroad. The South Shore Traction Company operated a shuttle service over the Queensboro Bridge at a fare of 5 cents for a round trip. The company's cars were not compelled to stop en route for passengers, whereas the Central Park, North & East River Railroad had to stop its cars about every block and the company was subject to difficulties of traffic and traffic regulations which were unknown to the South Shore Company. The round trip of the cars of the South Shore Company was a little more than 2 miles. On the other hand, the Central Park, North & East River Railroad would have to operate cars over the bridge or to Tenth Avenue, New York, and the round trip from Tenth Avenue and Fifty-fourth Street to the bridge was $3\frac{1}{2}$ miles and from Tenth Avenue and Fifty-ninth Street $3\frac{1}{3}$ miles. The Central Park, North & East River Railroad operated cars not only through Fifty-ninth Street, but down the West Side of the city and the East Side.

Commissioner Bassett said it had been suggested that the through route and joint rate should apply only to cars to the bridge and across the city to the Hudson River and that there should be no compulsory north and south fares on the line.

Mr. Mellen said:

"The Central Park, North & East River Railroad has been operating its road, since it received it back into its own hands, under very great financial difficulties, and has been rendering the best service in its power with its financial ability and is gradually making both ends meet. It is not in condition to have any new and untried problems put upon it. A system of transfers is to be inaugurated between the Metropolitan Street Railway and the Central Park, North & East River Railroad. This is an experiment. Neither the company nor the commission knows what the result is going to be. Why put upon the Central Park, North & East River Railroad something else before some result at least can be ascertained from the exchange of transfers with the Metropolitan Street Railway? There are many lines contributory to the crosstown line that will enjoy these transfer profits, and people living in any section of the city will also enjoy them. The company is also trying to arrange with the New York & Queens County Railway, which operates over the bridge and in Queens County, for a system of transfers."

Mr. Mellen did not know what the probable joint rate between

the Central Park, North & East River Railroad and the New York & Queens County Railway would be. It would be unfair to make an extensive system like the Central Park, North & East River Railroad transfer with a shuttle service upon a basis such as would have to be made to meet the demands in this case. He requested that the company should have an opportunity to present further views on the case.

Mr. Mellen also said: "When this franchise was granted to the Central Park, North & East River Railroad it was granted not to be extended to the Borough of Queens. The franchise is confined to the old City of New York, and was granted to accommodate the new residents of the old City of New York. Through the growth of the city, by an act of the Legislature, there is thrown into the old City of New York an immense territory that was never in the minds of the Legislature when the franchise was granted or in the minds of the grantees of this franchise when they took it, and there is an equitable consideration that lies at the bottom of any question of this kind."

In concluding the hearing Commissioner Bassett said:

"The Legislature of New York has put these joint rate and through route provisions into effect to cover exactly such cases as these. If that was not so, you would not find them in the law. Now, when you speak as you do, you as much as say that the Legislature has done something that it should not do. You know that the commission cannot do anything that would be confiscatory. You are protected in that both by the State courts and the United States courts."

HEARINGS ON NEW YORK COMMUTATION RATES

Hearings in reference to the increased commutation rates of the New York, New Haven & Hartford Railroad and the New York Central & Hudson River Railroad were held by the New York Public Service Commission, Second District, in the Metropolitan Building, New York, on Dec. 7 and 8. Testimony was offered by officials of both of the companies concerned.

L. F. Vosburgh, general passenger agent of the New York Central road, presented, in the course of his testimony, a statement of the commutation business on the three divisions of the company for the calendar year 1904 and for the fiscal years ended July 31, 1907 and 1910, respectively. This statement is published on page 1271. It is based on ticket sales in the commutation zone and on the mileage of commutation trains. In the computation the number of usable rides on commutation tickets was taken.

Another statement presented by Mr. Vosburgh, published on page 1271, shows the average commutation rates per mile on various roads in different parts of the country. The averages are based on the totals of allowable rides.

Mr. Vosburgh testified that the commutation rates were raised on account of the higher cost of operation and the increase in wages. The company felt that the commuters should bear their share of the increased expense. In September, 1910, as compared with September, 1909, there was a decrease of \$21,000 in gross revenues from commuters and of 1463 in the total number of commutation tickets sold. The loss was greater in family tickets than in the monthly tickets. Of the total population the following percentages bought commutation tickets on the New York Central road in the communities named: Yonkers, 1 1-3 per cent; Peekskill, 1 1-3 per cent; Mount Vernon, 2 per cent; White Plains, 8 per cent.

Testimony was offered by S. C. Fleetwood, auditor of the New Haven road, to show that the annual cost of operation by electricity between New York and Stamford was \$1,119,998 as compared with \$510,278 by steam. The tollage charges paid by the New Haven road to the New York Central road for the use of the Grand Central terminal aggregated \$685,063 for regular passengers and \$157,412 for commuters.

E. D. Robbins, general counsel for the New Haven road, said that the company was compelled to pay 14 cents for every passenger carried into the Grand Central terminal. Even with the

advanced rates, the company lost money, as the revenue from each commuter averaged about 11 cents. The hearing affecting the New York Central road will be resumed on Jan. 4. Further testimony in the New Haven case will be given on Jan. 18.

AVERAGE COMMUTATION RATES PER MILE

(Presented by L. F. Vosburgh, General Passenger Agent, New York Central Lines)

Roads	Monthly	Family
Pennsylvania	\$0.00695	\$0.01700
Lackawanna .....	.00580	.01482
Erie—All divisions .....	.00544	.01491
Greenwood Lake .....	.00606	.01556
N. J. and N. Y. ....	.00555	.01569
N. Y., S. & W. ....	.00530	.01382
Main line .....	.00501	.01460
New Haven .....	.00518	.01613
Long Island .....	.00517	.01839
Central New Jersey.....	.00510	.01491
New York Central—All divisions.....	.00508	.01697
Putnam division .....	.00523	.01589
Harlem division .....	.00514	.01794
Hudson division .....	.00489	.01617
West Shore .....	.00490	.01694
Pennsylvania (from Philadelphia).....	.00795	*
Boston & Albany (from Boston).....	.00812	*.01490
Chicago & Northwestern (from Chicago).....	.00547	*.01123
Chicago, Burlington & Quincy (from Chicago).....	.00546	*.01118

*25 ride tickets.

STATEMENT OF COMMUTATION BUSINESS

(Presented by L. F. Vosburgh, General Passenger Agent, New York Central Lines)

	Division	Year ended	Year ended	Year ended
		Dec. 31, 1904	July 31, 1907	July 31, 1910
Total commutation passengers. (Actual).....	Hudson	2,282,980	2,359,185	1,947,211
	Harlem	2,579,821	3,094,657	3,125,300
	Putnam	720,148	705,819	520,440
Total passengers—all classes	Hudson	3,997,272	4,192,628	3,210,948
	Harlem	3,890,672	4,844,672	4,673,916
Percentage of commutation passengers	Hudson	.57113	.56270	.60645
	Harlem	.66308	.63877	.66867
Total commutation earnings. (Actual).....	Hudson	\$226,128.08	\$250,574.27	\$244,893.45
	Harlem	236,658.45	303,267.63	353,885.00
	Putnam	41,898.27	43,901.39	40,126.75
Total train earnings—all classes	Hudson	710,043.76	705,486.28	646,424.94
	Harlem	545,507.92	739,940.64	805,839.20
Percentage of commutation earnings	Hudson	.31847	.35518	.37886
	Harlem	.43383	.40985	.43916
Average earnings per train mile on com. tickets....	Hudson	.3074	.3742	.4007
	Harlem	.3228	.4236	.5144
Average earnings per train mile—all classes	Hudson	.9652	1.0534	1.0578
	Harlem	.7441	1.0346	1.1714
Percentage of earnings per train mile derived from commutation tickets	Hudson	.3185	.3552	.3788
	Harlem	.4338	.4094	.4391
Total miles commutation passengers. (Actual) ...	Hudson	51,233,060	58,610,420	51,241,910
	Harlem	48,868,612	63,979,996	65,621,976
	Putnam	6,572,757	7,338,294	6,648,850
Average miles per commutation passenger. (Actual)	Hudson	22.44	20.84	26.31
	Harlem	18.94	20.67	21.00
	Putnam	9.13	10.40	12.78
Average rate per ride on commutation tickets. (Actual)	Hudson	\$0.09904	\$0.10621	\$0.12576
	Harlem	\$0.09173	\$0.09800	\$0.11323
	Putnam	\$0.05818	\$0.06220	\$0.07711

The figures compiled from estimated train earning statements for the periods ended Dec. 31, 1904, July 31, 1907, and July 31, 1910, were based on months of January, May and September of each year except period ended July 31, 1911, which was based on January, August and October, 1910.

The figures opposite captions that are marked "actual" are the actual figures compiled from commutation sales for the first three periods; the latter period ended July 31, 1911, is based on the actual figures for July, August and September on the ratio of these months to the corresponding months in 1909.

In preparing this statement only commutation trains, New York to Peekskill, inclusive, were taken on the Hudson division and New York to Brewster, inclusive, on the Harlem division, and the figures were used in connection with the actual commutation sales (except period ended July 31, 1910, as noted above) from all stations from which commutation tickets are on sale to New York. This would tend to show an increase in "percentage of commutation earnings."

The figures that we have shown for the Putnam division are actual except for the period July 31, 1911. We could not make any estimate of commutation business on the Putnam division for captions not marked "actual" as we have no way of compiling the earnings of the rapid transit trains.

CHANGE IN SUBWAY SERVICE ORDER IN NEW YORK

The hearings before Commissioner Eustis, of the Public Service Commission of the First District of New York, on the question of service on the subway lines of the Interborough Rapid Transit Company, to which reference was made in the ELECTRIC RAILWAY JOURNAL of Dec. 10, 1910, page 1152, and Dec. 17, 1910, page 1206, were concluded on Dec. 13, 1910. The commission on Dec. 23, 1910, adopted an order, effective on Dec. 28, 1910, increasing the service in the subway by the requirement that enough trains shall be operated at times when the traffic allows the operation of anything less than the maximum equipment to provide seats for all passengers riding in every quarter of an hour instead of every half hour, as at present. The headway of one minute and forty-eight seconds during rush hours remains in effect.

TRAIN STAFF ON THE WARREN & BRISTOL RAILROAD

On Dec. 11 the Warren & Bristol Railroad, Providence, R. I., which is operated as an electric division by the New York, New Haven & Hartford, put into service two electric train staff instruments for controlling the movements of trains over the single-track branch connecting Warren and Bristol, a distance of 4.1 miles. The system has worked smoothly from the start. The train staff instruments, which are of the standard high-speed type, with permissive attachment, made by the Union Switch & Signal Company, are placed in the telegraph offices at Franklin Street, Bristol, and at Warren, and the stretch of track between these two stations constitutes a single block. The telegraph operators on duty at these stations are in charge of the operation of the staff instruments.

The two staff instruments are electrically interconnected, and it is impossible to operate one without the knowledge and co-operation of the operator in charge of the other. Only one staff can be removed from either instrument at a time. When a staff has been withdrawn another cannot be removed from either instrument until the staff first taken out has been replaced in the same instrument from which it was removed or in the instrument at the opposite end of the block. An absolute block system for ordinary operation is therefore effected.

The permissive staff attachment permits trains to follow each other in the same direction through the block at short intervals when required. Under the winter timetable now in effect this method of operation is used only occasionally, but with the summer timetable it is expected that heavy traffic will require frequent operation of trains in more than one section. In no case is the permissive staff used except when directed by the train dispatcher, who issues a "19" train order to all motormen and conductors of following trains to run through the block, as they would with a caution card, expecting to overtake the train ahead.

The permissive staff consists of a steel rod and 12 removable rings, any one of which authorizes a train to pass through the section between Warren and Franklin Street, Bristol. If less than 12 trains are to follow each other, the last one takes all the remaining rings and steel rod. When all the rings and rod are received at the opposite end of the block section the operator reassembles them into the complete permissive staff, which he then places in the permissive attachment of the instrument in his office, and locks it therein by the absolute staff already in the lock of this attachment. By so doing he releases the absolute staff, which he restores to the absolute instrument in the regular manner, after which a movement can be made with an absolute staff in either direction or with the permissive staff in the opposite direction from which it was last used. There is only one permissive staff, and before the permissive system can again be used in the same direction the permissive staff must be forwarded to the opposite end of the block section as a whole by the first train moving in that direction and replaced in the permissive staff instrument. The entire permissive staff confers the same rights as an absolute staff.

The following instructions to trainmen regarding the use of the staff system have been incorporated in the working timetable:

"1. No train will run in either direction between Warren and Franklin Street, Bristol, unless the engineman (or motorman) has in his possession a train staff (or ring taken from the permissive staff), which must be retained so long as his train or any portion of it is in the block. The possession of a staff (or ring taken from the permissive staff) is authority for the engineman (or motorman) and conductor to proceed regardless of opposing trains, provided conductor's signal has been given and train order and other signals are in proceed position, where such signals exist.

"2. The conductor is the only person authorized to receive or deliver the staff (or ring of permissive staff) from or to operator in charge. When no conductor in charge of train, engineman (or motorman) will receive and deliver it. Upon arrival of train at opposite end of block, the staff (or per-

missive ring) must be delivered to the operator in charge, but not until entire train has cleared the block.

"3. When a train parts or doubles, the staff (or permissive ring) must be retained by the engineman (or motorman) until the entire train is clear of the block.

"4. A staff (or permissive ring) must not be transferred from one train to another, but must be delivered to the operator in accordance with these instructions."

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 the evening of Dec. 22, with President Hile in the chair. After the usual dinner President Hile called upon R. S. Goff, general manager of the Massachusetts Electric Companies, who congratulated the club upon its prosperity and influence in the industry, conveying to it the greetings of the Massachusetts Street Railway Association as president of the latter organization. Mr. Goff touched briefly upon the hospitality of the State of New Jersey to corporations and emphasized the fact that in Massachusetts less freedom is permitted, this tending to embarrass enterprise somewhat more than in New Jersey. He noted that the latter State, however, has recently taken steps to bring its public utilities under closer supervision. Concluding, he stated that the influence of the club extends much farther than its members suppose, rising each year to a climax in the annual banquet, which is attended by men of distinction from many parts of the United States and Canada. The club commands the respect of public authorities and by combining opportunity with brains has reached a high stage of success in the eyes of the transportation industry.

President W. A. Bancroft, of the Boston Elevated Railway Company, expressed his pleasure at being a guest of the club and referred briefly to the extent of public utility control which prevails in Massachusetts. The supervision of the State is decidedly ample, to say the least, there. It is not carried on in such a manner as to be injurious but tends to be fully as detailed as is desirable. General Bancroft spoke briefly of the temper of the popular mind, which seems inclined to prohibit anyone from making profits out of a public service business, and pointed out that service must be rendered the public under all conditions, whether the transportation systems are privately owned and supported by adequate fares from users, or whether supported by the government or run on a socialistic basis—"which nobody pays for!" Fares must be sufficient to pay operating expenses, fixed charges and other necessary disbursements if capital is to be induced to enter the field.

The principal address of the evening was on "The Electric Railway Situation," by Thomas N. McCarter, president of the Public Service Corporation of New Jersey. Mr. McCarter expressed his pleasure in having been able to take a part of the Western trip of a year ago under the auspices of the Massachusetts Street Railway Association and then delivered the address which is published in abstract in the following columns.

On Wednesday, Dec. 28, there was held at the New York headquarters of the National Electric Light Association another meeting of the joint committee on overhead construction to which reference was made on page 1186 of the *ELECTRIC RAILWAY JOURNAL* for Dec. 17. This committee is composed of representatives of the National Electric Light Association, American Railway Engineering & Maintenance of Way Association and the American Electric Railway Engineering Association. Considerable work was done at the meeting on Dec. 28, but it will be necessary to hold at least one more session before a report is submitted to the organizations mentioned.

THE ELECTRIC RAILWAY SITUATION*

BY THOMAS N. McCARTER, PRESIDENT PUBLIC SERVICE CORPORATION OF NEW JERSEY

During the last five or six years we have discussed among ourselves most of the problems which have so unexpectedly arisen to confront us, but while these conferences are always useful, I think the time is coming when the benefit to ourselves will not be so great, because we will be threshing old straw. What we really need is the larger audience of the public to present our views to. This, I confess, is very difficult to get. I do not succeed in doing it, and I do not think companies through the country generally get their side of the case well before the public. That of itself is one of the problems we have to meet. But, at the expense of a little repetition, I am going to rehearse the situation as I view it.

I was reading, coming over on the train this afternoon, the life of Charles I of England, written by Abbott. He shows, with remarkable clarity, the point of view with which this King ascended the throne, namely, that he ruled by divine right and that he owed his seat on the throne of England and Scotland to no one but to God. Parliament was a mere creature to do his will, with no rights whatever of its own. Abbott shows how, through his life, this became the ruling passion, and how Parliament, on the other hand, was daily and yearly made more restive under the yoke of monarchy as administered by Charles I. He further shows how Charles, in his constant fight with Parliament, prorogued Parliament for good, as he thought, and began to raise money which had formerly been raised by Parliament, by granting monopolies; monopolies of soap, of sugar and of all those things then as now the necessities of life. The recipients of these monopolies paid him large sums of money, which he had failed to get from the ordinary sources of taxation, without the aid of Parliament. Having received these monopolies, they began to give forth inferior qualities of merchandise and to exact enormous prices for it.

I am talking to an audience of men who are united upon one side of a question, yet we must look the other in the face. It struck me that in a very modified form, in a very restricted form (for I do not wish to have my statement misconstrued in this manner), that was what, perhaps, things were drifting toward a bit here a few years ago. The essential rights that Englishmen held dear were the right of personal liberty, the right of private property and the succession to the throne. When this country was established its founders brought with them the right of personal liberty, and gained it through the war of the Revolution in better form than the Englishman had ever acquired it, and the right of private property. We discarded the right of kings to rule and established our government on an entirely different basis. In the course of time public means of transportation and quasi-public services (like furnishing light and gas) came to be necessities, and privileges were granted by the sovereign power of the State for their development. Isn't it perhaps a little true that, speaking broadly, the character of those rights was mistaken a little by the people who received them? Isn't it true that many of our predecessors, or even some of us, if we have been in the business long enough, failed to appreciate that these rights did not belong to that class of private property rights which we brought with us from the old country, but that they combined a species of public and private right? Is it not true that in the early days things were done as a result of this—not perhaps in Massachusetts as much as elsewhere in the country, because you have long been subject to commission or other control here—that things were done which tended to arouse the public?

In the time of Charles I the fight went on, Charles growing more bitter in his way, and Parliament growing more bitter in its way; the king fighting for his prerogatives and Parli-

*Abstract of address presented at meeting of the New England Street Railway Club, Boston, December 22.

ment fighting for its prerogatives, until the king lost his prerogatives and lost his head.

With us the usurpations were of a different character; printing presses had been grinding out securities represented by no value; neglect of duty toward the public; poor service, accompanied by lack of sense of obligation, all of which (carrying the simile back) tended to arouse the public as it was aroused in the time of which I have been speaking. The public began to draw the halter. But here, differing from the situation to which I have been adverting, no revolution was needed because the companies themselves were the first to respond to the popular clamor, to put their houses in order, to adopt plans different from those which had been in operation before and to conduct themselves in altogether a seemly manner, or as much so as the nature of their business would permit. This has been the course of public service business, to my knowledge, for the last eight or ten years. I can say, from a familiarity with the business in its various branches through this country during that time, that I believe the business now to be honestly conducted, with the twofold purpose which the managers of these corporations have a right to have, of giving the public proper service and of expecting a fair return on their investment and on their property.

As is usual in such cases when there is a public uprising, the reaction goes too far. However justified they may be in their inception, it is the history of the world that these movements go too far, the pendulum swings too much the other way, and the public, not willing to take the captains of these corporations at their word that their houses are put in order, have demanded a complete change in the method of conducting the business. The four principal demands, as I view it, which the public makes as a result of this uprising are these, of which I wish to speak in turn:

First, supervision of these corporations by commission.

Second, cessation of stock watering.

Third, a limiting of the rate of return upon properties of this character.

Fourth, an insistence that all men connected with work of this character shall be deprived of all "say" in public life.

First, with regard to supervision by commission, it is perhaps superfluous for me, a six-months-old baby in that particular, to come into Massachusetts, which has had this principle established for a quarter of a century, and say anything on the subject, but I am entirely willing to state my own views. I have changed my mind somewhat on this subject. I used to believe, and said so publicly on many occasions, that supervision by commission could not work practically and could not but be a menace to all properties of this character. In that belief I disagreed with a good many strong men who are familiar with the business. We have now had a commission for six months in New Jersey, and of course it is too short a time to express any opinion upon the result of its labors. I am glad to be able to say, however, that the commission has started its work in a serious-minded and fair-minded manner, and if time goes on as successfully under it as it has for the past six months, we shall have little to complain of. But, speaking fundamentally, this, in my present judgment, is the limit to which supervision should go. I do not think any of us in this enlightened age object to supervision, pure and simple, by commission. By supervision I mean supervision that requires securities to be issued in compliance with the law; supervision that shall see that there is no further stock watering; supervision that shall have power in a general way to require proper and adequate service.

But there is a fundamental distinction between supervision and administration. The moment that the government gets into the business of administering these properties itself it might as well own them, because governmental administration is only governmental ownership without governmental responsibility. Let there be a proper supervision of the character I have spoken of, but let it stop at supervision and not go on to administration. There is where the State of New York, in my judgment, has made its fundamental error. The bill creating

the two commissions in New York State is as long as the moral law, and the actions of the commissioners thereunder simply substitute themselves for the directors of the respective companies. It has gone so far, I am creditably informed, that in one instance where a gas plant was about to be built in one of the cities in New York State, under plans designed by perhaps the most eminent gas engineer in this country, the gas plant all to be erected on the private property of the corporation, the plans thus prepared by this eminent engineer were ordered discarded at the whim of some engineer of the commission in favor of a plan of his own. That perhaps will illustrate as well as anything that I might say the fundamental distinction between supervisory control and the administration of this class of property by a commission. Whether I like supervision to the extent I have spoken of or not perhaps is academic. The result of the movement to which I referred in the early part of my remarks seems to have come to stay and to have become engrafted in the science of American government. I think if we will meet supervision, as distinguished from administration, in the frame of mind I have spoken of, we shall not have much trouble, for my experience with men is that when they are appointed to serious office they sober down. However radical they may be in their talk, which perhaps leads to their appointment, it is seldom they carry their radicalism to the point of performance, and perhaps it is well it is so.

The second price which corporations have got to pay as the result of the embryonic discontent of which I spoke is the cessation of all so-called watering. I know that in Massachusetts that question has been an academic one for years, but it is not so everywhere. Not a dollar of water has gone into my organization under my management, or into the consolidation for which I am responsible; but we fell heir to a large amount of what I suppose is water in the underlying companies. So far as public sentiment now requires a cessation of that, I am in entire sympathy with it, and believe it is for the best interests of our business there should be nothing more of the sort done. On the other hand, while my interest is in the new company rather than the underlying companies, I am absolutely opposed to any legislation, whether by way of rate legislation or otherwise, that has for its object the repudiation of those securities issued in times past under due forms of law and now distributed widely for value and in the hands of innocent holders. We must take the condition as we find it, where that condition exists, and do the best we can with it. The proposition of Senator La Follette applied to the steam railroads of the country would, in my judgment, work havoc and disaster throughout the length and breadth of the land. His proposition in brief is this. There are \$13,000,000,000 of securities of the steam roads issued in this country. He proposes to show by revaluation that they are not worth more than \$7,000,000,000, and to squeeze out the water. These securities are scattered from Russia to South America, and from Greenland to South Africa, and any attempt to repudiate them would, in my judgment, create the same kind of a national scandal of repudiation as did the attempt to place the country upon a silver basis in 1896. It may be that public sentiment will no longer stand for over-issues. It should be that public sentiment will no longer stand for new abuses, but where they exist, issued in the manner I have spoken of, we have got to meet the condition as we find it.

With regard to the rate of return, this is the most practical and perplexing question that remains as yet unsettled, in my judgment. I was very much interested a year ago in hearing Mr. Sullivan, of the Boston & Northern and Old Colony systems, speak on this subject in New York. He was describing the effect of commission rule in Massachusetts, and he made the statement that there were about 80 companies in Massachusetts which reported to the commission in 1908. Of those 80 companies, 40 paid no dividends whatever, and the other 40 paid a dividend that netted them approximately 6 per cent, and an average of all the 80 companies reporting of about 5¼ per cent. In my judgment, if that is the best that properties of this character can earn or can be allowed to earn, the

industry is not justified. I have also read with much interest the recent pamphlet issued by the Boston Elevated Railway, showing maps and the vast expenditures of money made by that corporation within the last few years for subway and other developments, rising from something like \$20,000,000 to \$80,000,000. I speak approximately. If they are to be limited to any such return as 5, 6 or even 7 per cent, what is the inducement to put in some \$60,000,000 of new money in a few years?

Take the gigantic enterprise in New York now nearing completion, known as the McAdoo tunnel system, connecting New York and New Jersey by subaqueous tunnels, which when they were started were unknown, at least on this side of the water. They are in operation and are earning only a very moderate amount of money. I do not think I am making any statement that cannot be verified when I say that at the present time they are barely earning the interest on their cost, because perhaps they are not fully completed, but if such a property as that is to be limited, as La Follette would limit it, to 5 or 6 per cent, what under Heaven is the use of building any such thing? Better by far to leave one's money in the savings bank and let it draw 4 per cent while you sit at home and read your newspaper than to put it in the bottom of the Hudson River and take the chances when it gets to be prosperous of having it give you 6 per cent; go through lean years that all properties have at the start; bear the burden of that, and then, when prosperity comes, have the screws turned on at 6 or 7 per cent. No better way to kill enterprise or to stop building conveniences for public use could be invented. Shall we say that these properties shall not pay a return attractive to investors, and shall we say that over and above that return they shall not be enabled to earn a surplus for a rainy day; for some years when, due to panics or other causes, they may not earn that sum of money? Shall we say that they shall not protect themselves against a year in which, perchance, they may have a strike, as in Philadelphia last year, which cost a million and a half of dollars? Shall not ordinary rules that pertain to common business prudence that a man would use about the management of his own affairs, whether he keeps a grocery store, runs a bank or is in any other walk of commercial life, pertain to our business as well? If such is not to be, our industry must stagnate and the public will quickly suffer as a result thereof.

The fourth demand which has arisen as a result of the movement to which I referred in the early part of my remarks is that all of us, because we are connected with corporations of this character, shall have no public influence whatever; our views shall not be consulted. We are biased, not only on subjects that relate to us, but we are tainted, as it were, and we shall not be allowed to have a say in public affairs. I protest against the "new nationalism" that would drive us all out of public life. I was delighted, as any one of you who were there must have been, with Mr. Calhoun's address at Atlantic City this year on this subject, among others. He stated this proposition far better than I can. He said he was willing to be driven out of the old method of political life, where you paid for immunity from politicians; where the politician who berated you and said he would have nothing to do with you or yours came around to your back door the next day and asked for a political contribution. I do not criticise all that may have been done along those lines in the past. I have sympathy with the man who, under pressure, has had to submit to blackmail. I have nothing but contempt for the man who voluntarily seeks to produce a grafter. But it is time that the whole business should be stopped wherever it exists throughout this broad land. But shall we say the country shall not have the benefit of the judgment and advice, in all the matters that pertain to its welfare, of men important enough to be put at the head of these great enterprises? I say no. I protest against being shipwrecked on the shoals of public clamor because I have set sail in the public service craft. Will the people of a community like this say that they will not hark or listen to the judgment of a man like General Bancroft, simply because he is at the head of the Boston Elevated system? On the contrary,

as Mr. Calhoun so well said at Atlantic City, these men must take their position, with all the influence they have, to guide their country, not only in matters pertaining to interests which they represent, but all other matters as well. In substitution for the old-fashioned methods will come the influence of the high corporation official, through the potentiality of mentality and the force of character.

These questions of the rate of fare and of the influence of strong men who happen to be connected with a corporation in the country's welfare are going to be settled. They are troublesome at present. The fare situation in Boston is troublesome. I have had many a talk with Mr. Sergeant on the subject and know his views about the length to which the nickel is expected to go. I still believe that if men of the type of Mr. Sergeant and of General Bancroft, here and elsewhere, will settle down to this problem along the line I have suggested, of forcing the public to recognize that, though there is a public duty in connection with these properties that does not pertain to commercial business, nevertheless the same basic principles of commerce must apply—I believe that this question will be worked out. In working out the one they will of necessity work out the other, so that their views will come to be respected, not only on the subjects on which they speak for their companies, but on all matters of public welfare, for, after all, the world is growing better rather than worse. You can read history as much as you please and at any age you please and you find that the old times were pretty wicked compared with the present day. Whether they were kings, emperors or popes, their whole thought was of their own power and the fulfilment of their own wishes. Nothing was allowed to stand in the way of their whims and wishes. All that is changed. New problems have come up and they are being gradually settled. King George V lives in a better day than did Charles I. Cardinal Gibbons lives in a better day than did Richelieu, and the era of Taft is better than the age of Augustus Cæsar.

THE SALE OF REDUCED-RATE TICKETS ON CARS

A decision has been rendered by the Railroad Commission of Wisconsin in a case involving the sale of reduced-rate tickets on cars by the Green Bay (Wis.) Traction Company. Labor tickets, for which provision is made in the franchise granted by Depere, Wis., and the rate on packages were also considered in the decision.

It was held by the commission, in brief, "that the conductors have ample time, in addition to their other duties, to handle commutation tickets; that if the sale of such tickets in cars results in reducing the revenue of the company so that it is unable to render adequate and efficient service, then public interest demands that the use of such tickets be discontinued entirely or the price raised; that the sale of such tickets at certain offices only amounts to a discrimination against such patrons as are unable to avail themselves of such privilege; that the carrying of baggage and package freight on passenger cars discommodates passengers and increases the hazards of operation, and the policy and schedule of the respondent, which tend to confine the carrying of baggage and package freight to emergency cases, is reasonable; that it does not appear that the labor tickets should be interfered with at this time. A new form of ticket is suggested. The respondent agreed to make necessary repairs at street crossings. It is ordered that reduced rate tickets be sold on cars."

The petition on which the case was founded was filed by the city of Depere, which is located about 5 miles from Green Bay. The Green Bay Traction Company operates an electric railway in Green Bay and three interurban lines, two of which reach parts of Depere, located on opposite banks of the Fox River. A fare of 10 cents was charged between Green Bay and Depere, although six 5-cent tickets could be bought for 25 cents at certain stations, by the use of two of which the fare would be reduced to 8 1/3 cents. Regarding these stations the decision says:

"People living one mile or more from the car line on the west, east or south side must travel some distance to the station to avail themselves of this privilege. It is inconvenient in stormy weather or winter weather for people to travel such distances for these tickets, as they can board the cars at any corner. This gives those residing near the drug stores, where tickets are sold, an advantage over those residing at a distance. The ticket offices on both sides of the river are on the main business streets. The stations at which these tickets are sold usually are drug stores, and do not open until 7 a. m. and close at 10 p. m. The first car on the east side leaves Depere at 6:15 a. m., and the west side car leaves before 7 a. m. In the evening there are cars leaving as late as 11:30 p. m. from the east side and 11:20 p. m. from the west side. On Sunday afternoons during the winter months, that is from Nov. 1 until April 15, the drug stores are closed, so that people cannot secure tickets at reduced rates."

Testimony regarding the duties of conductors was offered by J. M. Carl, superintendent of transportation of the company, who stated that he often found that the conductors were kept very busy, and that selling trip tickets and making change on the cars for passengers would make the conductors' duties very burdensome, and there would be difficulty in keeping schedule time.

Mr. Carl stated that the practice of selling tickets on cars was stopped in order to give better service to the public, as traffic was increasing and it was becoming too cumbersome for the car men, and trouble had arisen with reference to the "knocking down" of fares by the conductors under that system. For every six fares the conductor collected it would be possible for him to take a package containing six chips and substitute them for the cash fares. After the sale of tickets was discontinued on the cars an increase in revenue was noticed, and was due both to the fact that the extra nickel was turned in and to the fact that more cash fares were paid. Under the old system, where tickets were sold aboard the cars, 67 per cent of the total receipts were ticket receipts and 33 per cent cash fares. Under the present system 43 per cent of the total receipts are ticket receipts and 57 per cent cash fares.

Testimony on the same subject was offered by other railway officials:

Thomas Higgins, president and general manager of the Manitowoc & Northern Railway, testified that tickets were not sold on his company's city or interurban cars. He knew of no way to prevent the conductor from turning in ticket fares instead of cash. A register would not always prevent the substitution of a ticket fare for a cash fare, as only a few passengers notice the register at all; most of them notice only the ringing of the bell. If the conductor rang up four or five fares rapidly the passenger could not distinguish whether they were ticket or cash fares.

J. P. Pulliam, manager of the railway department of the Eastern Wisconsin Railway & Light Company, testified that he had been engaged in the operation of street and electric railways for 15 years; that he never sold tickets at reduced rates on interurban or city cars; that he knew of but one case where interurban roads sold tickets on their cars and where there was a reduction on the round trip rate or one trip; that this practice added an unnecessary burden; that it would be better to reduce the rate to the ticket basis and have one fare; that it was a bad proposition for a man to take in what he sold, as it absolutely destroyed a check on him. He also stated that the handling of tickets at reduced rates resulted in financial loss to the company, as it was impossible to keep a check on it; that his company used what he thought the best register, the Ohmer fare register, with 12 points, and the fares were separated in such a manner that the best check possible was obtained. The witness stated that it was generally accepted throughout the country that the best form of operation was to keep the tickets out of the hands of the conductor; that his duties of collecting fares, looking after his trolley, railroad crossings, tail lights and making up his trip sheets, sufficiently occupied his time; that the added duty of selling tickets would increase the num-

ber of platform accidents on cars; that it would be cheaper in the end for the company to reduce the rate to the ticket rate. He admitted that selling tickets on cars would be more convenient for passengers. If a railroad company was selling transportation it should sell it at its offices, just as did the steam roads.

John T. Huntington, general manager of the Green Bay Traction Company, testified that conditions on the lines between Depere and Green Bay at important times were such that no man could do his duty by the company or passengers, or do his duty with safety, if the duties were increased; that some cars ran light, but on other trips the traffic was heavy; that, with the best conductor in charge, there were times when he, as one of the responsible officers of the company, was very anxious and perturbed over possible accidents.

L. E. Jacobson, auditor of the Green Bay Traction Company, said that the company operated at a loss, and had done so ever since he had been connected with it. The gross income from earnings did not equal operating expenses and interest charges on the property. No salaries were paid to officers except to operating officials, and no dividends had been declared during his employment.

PACKAGE FREIGHT

Mr. Carl testified that originally there was no established rate, the conductors taking what they saw fit. The merchants of Green Bay and the produce dealers and others tied up large bundles, sometimes two or three bunches of bananas, weighing from 50 lb. to 150 lb., requiring two or three men to handle them. They would give the conductor two tickets, which amounted to 8 $\frac{1}{3}$ cents. This became such a nuisance that the company discontinued it. A number of wholesale grocery and produce houses of Green Bay shipped goods to Depere on the company's lines. The rear platform was often covered with melted ice and filth of various kinds connected with the handling of these packages, and the conditions were such that the passengers were discommoded. In order to prevent this abuse, the company had established the present rate, 10 cents in the city limits and 20 cents between Green Bay and Depere, limiting it to packages weighing not over 50 lb., unless neatly packed, equipped with handles and not too cumbersome. In such case the limit was 100 lb. The packages were to be called for, but sometimes the conductors were courteous enough to deliver them, and, as a result, people neglected calling for them. The packages were returned to the Green Bay office and held until assurances were given that they would be called for and the car indicated on which they should be delivered. Sometimes the packages were carried all day. On the west side line a freight car was operated three times a week; on the east side line only on special occasions when there was enough freight to pay for the trip.

Mr. Huntington testified that the transportation of packages on cars had been adopted originally by companies, particularly in Ohio, but that gradually they found that it was not proper, and in almost all instances it resolved itself into the carrying of packages on special cars when the business warranted it, or else not carrying them at all, except in emergency or as a special accommodation.

LABOR TICKETS

Mr. Huntington testified that when the complaint had been made he read the franchise governing operation in and out of Depere, and found the provision that labor tickets should be sold to citizens of Depere, good during certain hours in the morning and evening, and monthly books should be sold, not exceeding \$2.50. The company issued a book and limited it to 30 days from date of sale, but not transferable. He found that passengers forgetting to purchase tickets would borrow tickets from other passengers having such a book, and transfer them to their monthly cover. Passengers having books good for 30 days had after that time had expired tried to pass the tickets. Also books were sold indiscriminately to people riding anywhere over the system, between Green Bay and Depere, whereas the franchise provides this only for Depere residents. In order to comply with the franchise, and at the same time to

correct the abuses, the company issued a new form of book, changing the color on the cover every month, and good only for the calendar month, but redeemable, if a person ceased its use, on the basis of the full cash fare for the number of rides had. He stated that the company was giving the people just what the franchise called for, but that the citizens of Depere and the Council had repeatedly and frequently tried to have him do things not provided in the franchise.

Commenting on its statement of the evidence, the commission says in part:

"It appears that the principal objections of the respondent to placing tickets on sale on its cars are (1) that the time required of the conductors to make such sales will interfere with their cars, (2) that the opportunity afforded the conductors of defrauding the company by exchanging tickets for cash fares will be taken advantage of by some to the detriment of the company's revenue, and (3) that the number of cash fares will decrease and the gross operating revenue will be diminished.

"The first objection does not seem tenable. While, doubtless, at infrequent times, when traffic is abnormally heavy, the sale of tickets will require a little more time than the mere collection of fares from passengers purchasing tickets would require, generally conductors have ample time to discharge all their duties, including sale of tickets. In cities throughout the country where commutation tickets are offered to the public by companies such tickets are on sale on the cars at all times. During certain hours of each day in such cities the traffic is congested to a greater extent, perhaps, than on the rare occasions of heaviest traffic on respondent's lines, and yet conductors are able to discharge all the duties imposed upon them reasonably well.

"That the company should conserve its revenue by employing reasonable means to prevent losses because of dishonest employees must be conceded. The public is interested in the financial results of the operation of the railway, for any material loss in revenues, however incurred, may impair the ability of the company to render adequate and efficient service. But any regulations the company may establish to protect its earnings must be of such a character that their application will not result in unjust discriminations between its patrons. To afford convenient facilities for acquiring tickets at reduced rates to persons who reside near certain stations or stopping points, and to deny such facilities to others who reside in the vicinity of other stopping points, results in subjecting the latter persons to an undue disadvantage. The injustice of such discrimination is emphasized by respondent's final objection to restoring the sale of tickets upon cars, because the granting of equal facilities to all patrons of the road in the matter of acquiring tickets will increase the use of tickets and decrease the amount of revenue derived from cash fares.

"If the sale of tickets upon cars shall result in any material reduction in revenue, then public interest demands that the use of such tickets be discontinued entirely, or the price thereof raised, so that the revenues will be adequate to maintain and operate the property for the public convenience. The law imposes upon the company the duty of furnishing 'reasonably adequate service and facilities,' and this commission is empowered to enforce such obligation in case of failure or neglect to perform. If the charges exacted of the public for the services are unreasonably low—and such would be the case if the operating revenues were inadequate properly to maintain the service—then the only means of enforcing the legal obligation resting upon the company in the premises would be to increase the rates. Any stipulation or agreement made by a public service corporation which would prevent it from properly performing its public function is in violation of public policy and should be disregarded.

"Upon the question of the reasonableness of the rates charged for package freight, it appears that the present schedule was adopted for the purpose of discouraging the shipment of packages. Passenger cars should be used only for the conveyance of persons and their parcels in hand, unless equipped with compartments for baggage and package freight. With platforms filled with freight, accidents upon the platforms are almost

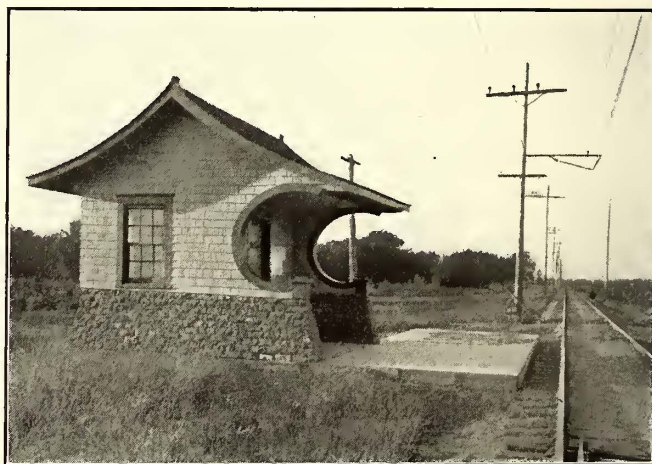
inevitable at times. Under the circumstances we believe that the schedule is reasonable, as it seems to have accomplished the purpose of its adoption, which had in view the comfort and convenience of passengers as well as the safety of operating the cars.

"Respecting the use of labor tickets, the company has issued a new form of book. Until it appears that the new practice operates prejudicially against some of the users of labor tickets, no order will be made in the matter.

"There was some complaint that the respondent had not properly made and kept in repair the crossings of its lines with the streets in Depere. This was explained upon the ground that the season was such as to prevent work of that character. The respondent agreed to repair and put in safe condition all such crossings as soon as the weather would permit. Under the circumstances no action of the commission is required in the premises."

SHELTER STATIONS ON ILLINOIS TRACTION SYSTEM

The accompanying engraving from a photograph shows the latest design of roadside way station erected on the Illinois Traction System lines. Four of these stations have been built and it is planned to use the design shown for all other small waiting stations to be built in the future at country road crossings. The ordinary shelter as formerly erected at road crossings cost about \$60. The new stations cost \$325. Because of the extra facilities and conveniences offered by the higher-priced stations the local passengers who use these stations at



Shelter Shed at Road Crossings

the road crossings have clubbed together and furnished sufficient money to purchase the materials for each of the stations of this type which has been built. The company has furnished the labor and erected the structures complete.

The general design of the station with its overhanging eaves and inclosed waiting space is credited to H. E. Chubbuck, vice-president. The stations are substantially built with concrete foundations surmounted by battered walls of rock-faced, hard-burned brick. The superstructure is framework covered with creosoted shingles. At each station a concrete loading platform extending to the roadside is built.

During the recent parliamentary election in England the car houses of the different tramway systems were used extensively for political meetings. This was the case in Reading, for instance, where the Prime Minister addressed one monster audience on one day and two days later Mr. Balfour spoke in the same building to another huge gathering. It was estimated that about 20,000 persons were present at the two meetings. Great precautions were taken to prevent suffragettes from entering the building on the occasion of the Prime Minister's visit, with success, as the meeting was undisturbed by female interrupters.

MONTHLY STATISTICAL REPORT, ILLINOIS TRACTION SYSTEM

The accompanying table gives freight, passenger and mileage statistics of the interurban lines of the Illinois Traction System for September, 1910, and shows the method of classification employed in compiling these figures. As will be seen, a record is kept in tons of the different kinds of freight moved. The classification used has five main subdivisions. Bituminous coal constitutes in tonnage the largest item in the list. Stone and sand come next. Besides giving statistics of freight traffic the table also shows locomotive and car mileage and statistics of passenger traffic.

ILLINOIS TRACTION COMPANY, INTERURBAN LINES, FREIGHT, PASSENGER AND MILEAGE STATISTICS, SEPTEMBER, 1910.

Description of freight moved and tonnage (company material excluded)	Sept. 1910	Comparative same mo. last yr.	Cumulative from July 1, 1910	Cumulative same period 1909
<i>Products of Agriculture</i>				
Grain	1,235	561	4,254	2,149
Flour	225	260	558	686
Other mill products.....	98	125	313	325
Hay	134	90	306	152
Tobacco		4		3
Cotton	3	1	4	6
Fruits and vegetables.....	257	94	420	347
Other products of agriculture.	16	27	22	52
<i>Products of Animals</i>				
Live stock	283	267	935	705
Dressed meats	22	113	38	212
Other packing house products.				
Poultry, game, fish.....	10	15	13	37
Wool	5	1	33	4
Hides and leather.....	1	2	2	20
Dairy products.....		6	2	10
Other products of animals.				
<i>Products of Mines</i>				
Anthracite coal				
Bituminous coal	16,387	11,184	54,141	28,416
Coke	57		57	
Ores				
Stone, sand, etc.....	12,593	426	25,903	1,629
Other products of mines....	28		47	
<i>Products of Forest</i>				
Lumber	470	185	842	424
Other products of forest....	1,217	1,307	4,471	1,564
<i>Manufactures</i>				
Petroleum and other oils....	98	83	188	162
Sugar	28	240	61	485
Naval stores	15		298	
Iron—pig and bloom.....		45	52	87
Iron and steel rails.....	24	4	151	13
Other castings and machinery.	39	45	153	106
Bar and sheet metal.....	33	12	39	32
Cement, brick and lime.....	724	179	3,160	721
Agricultural implements....	8	8	27	57
Wagons, carriages and tools..	4	3	26	29
Wines, liquors and beer....	272	324	652	1,209
Household goods and furniture.	380	336	945	728
Other manufactures	741	7	2,608	32
Other commodities under 2000-lb. lots	6,886	5,707	17,678	16,142
Total tonnage—All freight...	42,691	22,470	119,703	59,851
FREIGHT TRAFFIC				
No. of tons carried of freight-earning revenue.....	42,293	21,661	118,399	56,544
Tonnage—company freight...	398	809	1,304	3,307
Total tonnage—all freight...	42,691	22,470	119,703	59,851
No. tons carried 1 mile—revenue	2,652,802	918,625	7,810,999	2,565,781
No. tons carried 1 mile—company	24,627	67,915	67,867	195,375
Total mileage—all freight....	2,677,429	986,540	7,878,866	2,761,156
No. tons carried per 1 mile per mile road (rev.).....	6,316	2,187	18,597	6,109
No. tons carried per 1 mile per mile road (all frt.)...	6,375	2,349	18,760	6,574
Aver. distance haul of 1 ton (rev.)	62.72	42.49	65.09	45.37
Aver. distance haul of 1 ton (all frt.)	62.72	43.90	66.54	46.13
Total freight revenue.....	\$35,182.02	\$23,802.68	\$102,090.60	\$66,790.42
Aver. amt. recd. for each ton of frt. ....	.83	1.10	.86	1.18
Aver. receipts per ton per mi.	.013	.026	.013	.026
Miles of road operated in frt. service	420	420	420	420
Frt. rev. per mile of road....	\$83.76	\$56.67	\$243.07	\$159.02
Frt. rev. per loaded car mile.	.2220	.2327	.2175	.2195
Rev. from switching service.	1,004.47	1,031.92	2,892.04	2,403.01
<i>Locomotive Mileage</i>				
Freight locomotive miles....	22,035	14,510	66,367	40,032
Passenger locomotive miles...			114	
Switching locomotive miles...	5,398	1,308	17,141	3,818
Total in revenue service.	27,433	15,818	83,622	43,850

	Sept. 1910	Comparative same mo. last yr.	Cumulative from July 1, 1910	Cumulative same period 1909
<i>Car Mileage Revenue Service</i>				
Freight car miles:				
Loaded	158,420	102,293	469,307	304,380
Empty	59,666	34,493	186,709	100,500
Caboose	5,971	3,832	15,670	8,276
Total	224,057	140,618	671,686	413,156
Revenue passenger car miles..	449,761	457,687	1,397,578	1,399,549
Special revenue passenger car miles	424*		4,131	
Sleeping car miles	16,147*		43,812	
Total	466,332		1,445,521	
U. S. express miles.....	3,774		11,599	
Total revenue passenger car miles	470,106	457,687	1,457,120	1,399,549
Total locomotive freight and passenger miles	721,596	614,123	2,212,428	1,856,555
Non-rev. service car miles...	20,674	8,280	67,947	24,511
PASSENGER TRAFFIC				
Revenue passengers carried..	741,236	682,338	2,299,222	2,169,660
No. of pass. carried 1 mile...	9,844,404	9,658,512	30,871,345	30,243,280
No. of pass. carried 1 mile per mile road.....	23,439	22,996	73,503	72,723
Average distance carried...	13.2	14.1	13.4	14.1
Total passenger revenue....	\$153,524.99	\$137,797.41	\$474,784.51	\$430,346.39
Average amount received for each passenger	20.71	20.19	20.65	19.19
Total passenger service train revenue	161,963.06	145,083.18	498,882.01	451,991.41
Miles of road operated in passenger service	420	420	420	420
Passenger service revenue per mile of road.....	\$385.62	\$345.42	\$1,187.81	\$1,076.15
Passenger service train revenue per car mile.....	34.4	31.7	34.2	32.4
Average rate per passenger per mile.....	1.56	1.42	1.54	1.40

MARSEILLES (ILL.) HYDROELECTRIC DEVELOPMENT

H. E. Chubbuck, general manager Western Railway & Light Company, has just placed equipment contracts for a hydroelectric plant at Marseilles on the Illinois River, which will have a present capacity of about 3000 hp and an ultimate capacity of 6000 hp and will supply lighting and railway current for the McKinley System in northern Illinois. The Northern Illinois Light & Traction Company, a subsidiary of the Western Railway & Light Company, recently leased water rights from the Marseilles Land & Water Company which will make available the 3000 hp. Options also were completed on additional water rights at this location, which will come under control of the Northern Illinois Light & Traction Company as far as the contracts under which they are now held expire.

The dam across the Illinois River at Marseilles is a concrete structure 920 ft. long and 9 ft. high. This dam will supply water through a headrace to a new power plant. A contract for excavating the power-plant site and placing the concrete for the structure has been closed with the L. E. Meyers Construction Company for a sum said to be about \$112,000. Contracts also have just been placed with the Westinghouse Electric & Manufacturing Company for generators, transformers and auxiliary electrical apparatus. The Leffel Water Wheel Company will supply the waterwheels.

The units now to be installed include six umbrella-type generators of 350-kw capacity each and two similar generators of 450-kw capacity each. The latter generators will be moved to this plant from an older plant and each will be connected to three waterwheels. Exciting current will be furnished by two 100-kw waterwheel-driven units. One-half of the generating capacity will furnish 60-cycle current and the other half 25-cycle current. A 1000-kw Westinghouse frequency-changing set will serve to tie the two halves of the generating capacity and make available the complete plant for either frequency. It is planned to furnish energy for lighting the towns of Morris, Seneca, Marseilles, Ottawa, Utica and La Salle. The surplus energy will be fed to the transmission system of the 90-mile interurban railway operated in this district by the McKinley interests. C. W. Humphrey, consulting and designing engineer, Chicago, has been retained to direct the engineering work.

TESTIMONY BEFORE RAILROAD SECURITIES COMMISSION

The Railroad Securities Commission concluded its sessions in New York on Dec. 22, and then adjourned to meet in Chicago on Jan. 23. In addition to those whose testimony was mentioned in last week's issue of the *ELECTRIC RAILWAY JOURNAL*, a number of others whose experience makes them competent witnesses have appeared before the commission. Abstracts of the testimony of some of those who have given their views, supplementing the report published in last week's issue, follow:

TESTIMONY OF PAUL D. CRAVATH

Paul D. Cravath, who testified on Dec. 20, said that it was not his function as a lawyer to determine what was economically wise. His clients consulted him in order to determine what could be done legally. He thought that there was danger of too much regulation rather than too little regulation. The indications were that during the next two or three years the plan of commission control would be made effective in nearly every State in the Union. He assumed that the policy of federal regulation of interstate railroads was here to stay. If the commission would bring about reasonable uniformity of the laws of the various States affecting corporations, it would accomplish a great deal. If it could prevent the extremes of regulation which threatened the country, it would accomplish material results.

Ignoring constitutional difficulties, Mr. Cravath thought that the more effectively authority could be centered in the federal government the better off the corporations would be. The prosperity of corporations meant the prosperity of the country. The Railroad Securities Commission should be exceedingly cautious in advocating any radical change from present conditions. One great danger was the idea fostered by some people that the approval of securities by a commission made the securities good. A public commission was not responsible for losses of corporations. The directors of corporations were responsible legally and morally for such losses and could not shift responsibility to a commission. It would be unfortunate to create an impression that the approval of a commission meant soundness in securities.

In the opinion of Mr. Cravath, only very simple laws regarding the regulation of security issues should be imposed. They should place the responsibility directly on the directors and continue the present assumption that investors must make their own investigation and determination, relying on high-minded directors to safeguard the trust. Greater publicity was needed. There was lack of sufficient fulness in the information afforded by corporations as to securities and what was behind them. In the main the public good was fostered if a great degree of freedom in business operations was allowed. It would hamper corporations if they were compelled to reveal in advance the purposes for which they desired to issue securities. Regulation on this point should be confined to a requirement that bonds should be issued at the fair market value. However, after the expenditure of money raised by the issue of securities a very full report should be made as to the disposal of the funds.

Mr. Cravath said that he had been told that in boom times it was a disadvantage to a railroad to have the fact known in advance that it intended to spend a large amount for equipment, rails or for any other specific purpose. He thought that securities, if issued under regulative statutes, should be issued to provide funds for any one of a dozen purposes. He would favor, in any scheme for the regulation of corporate securities, a requirement that the total bond issue should bear some fixed proportion to the stock issue. The modern tendency in railroad consolidation to use issues of stock as security for issues of collateral trust bonds was economically dangerous because it resulted in a condition where an undue proportion of the total capitalization was represented by bonds.

It would be a great injustice, Mr. Cravath said, if the government should demand such reduction of rates as to interfere with established dividends and interest rates of railroad

companies. Mr. Cravath was asked whether, if the railroads were allowed to increase their rates now because of increased expenses, the result would not be that as expenses increased in the future permission to make further proportionate increases in rates would be expected. He replied that the increase of rates by railroads under these circumstances was simply the application by these corporations of methods that applied to any other business or profession. A commission which had power to regulate rates should first take into consideration the numerous hardships involved to investors in disturbance of conditions.

Mr. Cravath thought that the large railways should be protected against needless competition. They were not like the promoter of new enterprises who was in the business of taking chances. In answer to one question regarding value, Mr. Cravath said that in the experience of the New York City surface street railways \$20,000,000 had been invested in cable lines legitimately and for improvements that were absolutely needed. There was not now a scrap of property to show the investment of this money because the cable railways had been superseded by electric lines.

In referring to conditions in New York, Mr. Cravath said that in the Legislature which was in session the year before the creation of the public service commissions 120 bills affecting railroads were pending. A consolidation of the State's policy of regulation by commissions would tend to overcome this condition. He said that the commission of the Second District of New York State had been exceedingly conservative. It had attempted a minimum of interference with the corporations.

MR. MATHER SAYS REGULATION HAS LIMITED EARNINGS

Robert Mather, chairman of the board of directors of the Westinghouse Electric & Manufacturing Company, stated that, inasmuch as the United States government had gone as far as it has in the regulation of railways, it ought to go further in the interest of both the railways and the communities which the railways served. He said that regulation had resulted in the limitation of the earning capacity of the railroads. This had been done upon the theory that these corporations, as public highways, were engaged in public business, and therefore the public ought to have some voice in their control. This theory confused two distinct purposes which the railroads served. Mr. Mather said that, while the ownership of the highways by the railroads was a matter of public concern, the business of carrying the goods of the country was different. That had never been and never would be the business of the public, although, of course, it was subject to some regulation. By limitation of the earning capacity of the railways their credit had been affected. The railways were confronted with the practical problem that the purchasing public did not want their securities, because they were not permitted to earn a sufficient margin above the amount required to pay a fair return.

Mr. Mather said that the country was more interested in having sufficient and efficient highways of commerce than it was in the question of whether dividends were paid on watered stock. The government ought to substitute some equivalent for the limitation of credit which the present regulation entailed; it ought to see that rates were such that railways operating with average economy could earn sufficient, not only to pay their fixed charges, but also a fair return on outstanding capital stock, making at the same time adequate provision for contingencies. The government ought not to stop now and let the railways flounder out of their present difficulties.

W. D. HINES ON THE COST OF SERVICE

Walker D. Hines, chairman of the executive committee of the Atchison, Topeka & Santa Fé Railway, said that, in his opinion, Congress had the power to regulate the capitalization of railways engaged in interstate commerce, and that he personally was not disposed to offer any objection to the exercise of that power. Mr. Hines emphasized the great number of factors entering into the making of rates, and declared that

it was absolutely impossible for a railway to ascertain, even in a very general way, the cost of service. Even a distinction between passenger and freight traffic was only a series of approximations. He said that he was not willing to oppose supervision, but would urge that the attraction of capital to railways was of the utmost importance. This need must be taken into account by any commission.

REGULATION A MATTER OF PUBLIC INTEREST

Frank Trumbull, chairman of the board of directors of the Chesapeake & Ohio Railway, declared that he was in favor of the regulation of the issue of railway securities, and that his sympathies were toward federal regulation to the exclusion of State regulation, not because he believed that capitalization had any particular bearing upon rates, but because regulation had come to be a matter of public interest.

BOND ISSUES NOT INTERSTATE COMMERCE

Edward M. Shepard said that he was opposed to the general principle of federal regulation of the issue of railway securities. He did not understand how the bond issues of railways should be construed as any part of interstate commerce. Mr. Shepard favored the issue of stock without par value. He declared that enforcement of the utmost publicity in all questions relating to the issue of securities would accomplish in the end all the reforms sought. He thought that it would be exceedingly unwise for the government to undertake to protect the interests of private investors.

RESTRICTIONS ON PRICES OF STOCKS

Jacob H. Schiff, of Kuhn, Loeb & Company, said that the time had long been passed when capital stock should be issued for less than money, but if it should not be possible to issue railway stock at less than par, the West and South might not be able to get all the railways they needed. Railway construction was done to-day by the large existing companies, and it should not be otherwise. The commission should recommend that stock should be issued either at par or, with the permission of the commission, at a legitimate discount. He would not impose any restrictions as to the prices at which bonds should be sold. Where interstate commerce prevailed, Mr. Schiff thought that federal, not State, regulation should prevail.

R. S. LOVETT COMMENDS INTERSTATE ACCOUNTING SYSTEM

R. S. Lovett, president of the Union Pacific Railroad, said he was not opposed, from the railway point of view, to government regulation. Personally, he believed it unnecessary and unwise in the public interest. He said that there was no connection between rates and financing. Traffic managers knew nothing of financing, and rates were not made or influenced by the stocks and bonds outstanding. It was impossible to state the factors that entered into the making of rates. In their growth and development rates were like the common law of England. Regulation of the issue of securities was not necessary for the protection of investors or of the public from higher rates. In the protection of investors the government had not regulated the issue of mining stocks or of other properties that had proved total losses to speculators and investors. The essential value of the Interstate Commerce Commission lay in the accurate accounting which it prescribed and enforced and in the publication of complete reports. The accounting methods of this commission were well-nigh perfect, and were a perfect protection to the public, making regulation unnecessary. If each State should regulate the issue of securities, based on the property within the State, financing would become impossible, because State legislation was not uniform and would cause financial confusion.

If rates depended on the stocks and bonds outstanding, Congress would have the power to regulate the issue of securities, but they did not so depend. President Lovett would do away with the designation of a par value for stocks. The value of a stock would then depend upon its worth. As the bonds had par value, and the actual value depended upon the credit of the company, it was absolutely necessary to sell at a discount, especially in these times. The investor was not concerned so much with the sale of bonds at a discount as with the return

he got for his investment. The proper way to get capital was from the stockholders by subscription, so that the public or government was not interested in the amount of stocks and bonds outstanding. The government was not interested in the question of whether a bond or a stock was a good or bad investment, but might be interested in what the railroad got in return for the sale or issue of stocks or bonds. An attempt to find the cost of reproduction of the property of a railroad was a mischievous plan. It was wholly useless and unnecessary.

SECOND CONFERENCE ON INTERURBAN OPERATING METHODS IN INDIANA

The Railroad Commission of Indiana held a second conference with the interurban railway managers of that State at Indianapolis on Dec. 23. The purpose of the meeting was to ask the representatives of the railway companies whether or not they would agree to and carry out the recommendations made by the commission in its report to the Governor presented at the previous conference, which was held on Dec. 13. These recommendations were as follows:

(1) (a) Employ better men for motormen and conductors. (b) Do not employ applicants until former records have been carefully investigated. (c) All motormen to have at least one year's experience in train service. (d) No duties beside operating car to be imposed on motormen. (e) Provide separate compartment for motorman. (f) Give conductor one assistant when motor car hauls trailer.

(2) Proceed to install block signals on interurban railroads and by Jan. 1, 1911, report progress and submit to the commission plans and blueprints of some adequate block system to be hereafter installed and operated as soon as practically possible.

(3) Enforce the "double order" system of dispatching and make no exception under any circumstances to this rule.

(4) Trainmen should operate by rules and time cards and orders, and signals when installed, but companies shall proceed to eliminate obstructions to sight at curves where sight is badly obstructed. Until this is done companies are to post slow-speed signals at dangerous curves and reduce speed of cars at such places to not more than 15 m.p.h.

(5) Division superintendents and trainmasters should not be burdened with duties other than those pertaining to train operation.

(6) Train dispatchers should not be required to handle interlocking plants or to perform duties other than those pertaining to the dispatching of trains.

About 30 interurban managers and their chief assistants attended the meeting, which was held in executive session. It is understood that the discussion was confined to the same questions which were argued at the meeting of Dec. 13, which was reported in the issue of this paper for Dec. 17, page 1201. Preceding the meeting the commission had obtained from a number of roads statements of the number of years' service of their train employees. The reports of 21 companies showed that out of 505 motormen only 68 had had one year or less of service with the road now employing them, and some of these 68 men previously had worked on other roads. Thus, less than 10 per cent of the motormen employed by these 21 companies had had less than one year's experience in train service. Out of 490 conductors employed by these companies 80 had had one year or less of service with the company for which they are now working, but practically all of these had had previous experience on other lines.

The three topics around which the discussion centered were: (1) Conditions of employment and service, (2) signals and (3) method of delivering orders. As a result of the discussion the following committees were appointed to consider these subjects and report to the commission by Jan. 5:

Committee on conditions of employment and service, C. L.

Henry, president Indianapolis & Cincinnati Traction Company; W. G. Irwin, vice-president Indianapolis, Columbus & Southern Traction Company; H. A. Nicholl, general manager Indiana Union Traction Company; C. E. Morgan, general manager Indianapolis, Crawfordsville & Western Traction Company.

Committee on block signals, Arthur W. Brady, president Indiana Union Traction Company; C. N. Wilcoxon, general manager Chicago, Lake Shore & South Bend Railway; R. I. Todd, general manager Terre Haute, Indianapolis & Eastern Traction Company; C. D. Emmons, general manager Fort Wayne & Wabash Valley Traction Company.

Committee on delivery of train orders, A. Shane, general manager Indianapolis, Columbus & Southern Traction Company; C. L. Henry, president Indianapolis & Cincinnati Traction Company; G. K. Jeffreys, superintendent Terre Haute, Indianapolis & Eastern Traction Company.

The chairman of the commission stated to a representative of this paper that at the meeting which would be called for Jan. 5 the commission will insist that the roads agree to carry out its recommendations or offer satisfactory substitutes. The block signal committee will be assisted by the signal expert of the commission, Mr. Hovey, who, previous to the meeting of the committee on signals, will collect information that can be used by the committee in formulating a report for the Jan. 5 meeting.

PROGRESS ON WORCESTER CONSOLIDATED PLANT

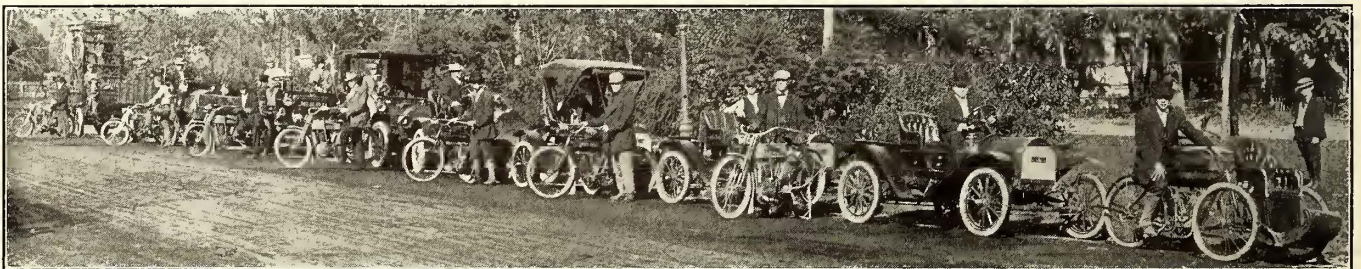
Rapid progress toward completion before the close of the winter is being made at the new 5000-kw turbine station of the Worcester Consolidated Street Railway Company in Millbury, Mass. The machinery has practically all arrived upon the ground, and the turbine foundations are ready to receive the initial 5000-kw unit, which will be installed on the north side of the existing engine-driven station of the company. Two batteries of two 840-hp Edgemoor water-tube boilers for battery have been installed and equipped with Murphy automatic stokers. Two more similar batteries will be erected as soon as possible. These boilers are probably the largest individual units in New England, and the draft supply, instead of being obtained through individual temporary stacks as first in-

Company. A reinforced-concrete ash pit 26 ft. deep has been built at the side of the spur track, and a system of ash cars will be installed to carry the ashes from a receiving chamber below the boilers over a narrow-gage track to the pit, whence they will be loaded into standard-gage cars for removal by the locomotive crane. No manual labor will be required in ash handling. Feed water for the present boiler plant is being provided by a 4-in. centrifugal pump driven by an old railway motor, the pump suction being carried to the bottom of a 20-ft. well outside the station. The water is being analyzed at the present time to determine its fitness for boiler supply, and in case it proves unsatisfactory the company will probably establish a pumping station on the shore of a pond within a few miles of the plant and supply water by a suitable pipe line.

All the parts of a General Electric 5000-kw turbo-alternator have reached the station, and construction work has begun prior to the installation of a Wheeler surface condensing equipment. The circulating water for the plant will be handled entirely by gravity, the head being sufficient to provide adequate flowage without the use of a pump. The coal and ash-handling equipment is to be supplied by R. M. Beaumont, of Philadelphia. Current will be transmitted to the Worcester substation over a line carried on steel towers, which are being furnished by the Archbold-Brady Company, of Syracuse, N. Y., the average span being about 400 ft. Construction work is progressing rapidly on the Worcester substation, which will contain an ultimate installation of rotaries having a total rating of 7500 kw. Foundations have been completed for the first rotary, and excavation is in progress in connection with the underground section of lines which will tie the substation in with the power plant and the rest of the system. The contractor for the power house at Millbury is the firm of Durkee, White & Towne, of Springfield, Mass.

AUTOMOBILE EQUIPMENT OF THE KANSAS CITY RAILWAY AND LIGHT COMPANIES

The management of the Metropolitan Street Railway Company and the Kansas City Electric Light Company within the past year has purchased a very extensive equipment of automo-



A Line-Up of Auto-Vehicles Used by the Railway and Lighting Companies of Kansas City

tended by the company, is furnished by a Kellogg circular brick stack, 225 ft. high and 12 ft. in inside diameter. This chimney is said to be the largest in diameter for its height in New England, and it is installed with one side blank to accommodate future boiler units, which will be necessary to handle the expansion of the plant in the near future.

Fuel is being handled outside the plant by cars hauled to the station on a spur track connection with the New York, New Haven & Hartford system. A locomotive crane, steam-driven, with a 55-foot boom, is in service, and this easily handles five 40-ton cars loaded. The capacity of the crane is 7000 lb. at 45 ft. radius and 14,000 lb. on a 20-ft. radius, and it was furnished by the McMyer Interstate Company. The railway company has built a bridge across the Blackstone Canal at the plant site, the principal horizontal members being two concrete girders which are reinforced with 30-in. I-beams 31 ft. long, rolled by the Bethlehem Steel

biles and motorcycles to be used in all departments which have men who must make hurried trips about the city. The accompanying illustration shows the entire gasoline-driven equipment. The following is a list of the nine machines used by the street railway department and the seven machines used by the electric light department:

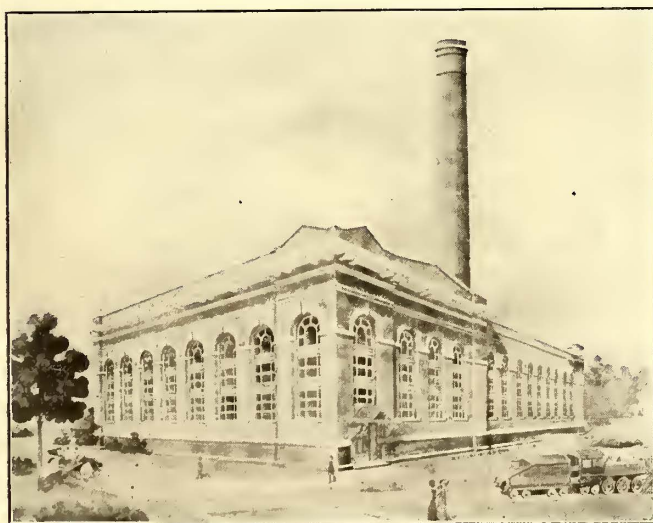
Metropolitan Street Railway—One Frayer-Miller tower truck, electrical department; one Knox, 3-ton truck (wreck wagon), operating department; one Packard 3-ton truck, mechanical department; one Pierce-Arrow touring car, executive officers; one E-M-F "30" runabout, transportation department; one Brush runabout, way department; three Harley-Davidson motorcycles (emergency), electrical department.

Kansas City Electric Light Company—Two Brush runabouts, one Indian tricycle, one Harley-Davidson motorcycle and three Indian motorcycles, all of which are used by the trouble department.

LARGE NEW INDIANAPOLIS POWER PLANT

The Terre Haute, Indianapolis & Eastern Traction Company is constructing a large new generating station in Indianapolis. Energy from this station will be used for operating the city traction lines and part of the company's interurban mileage. It is probable that the large central station, when completed, will supplant some of the outlying stations now furnishing energy for the different interurban divisions. The new station is being built on a piece of property 8.5 acres in extent located within the city of Indianapolis on the White River opposite the mouth of Fall Creek. This is a particularly valuable location inasmuch as the second stream during the summer months has a larger flow than the main river. The site of the new station is on a belt line which handles freight for all the steam roads entering the city. At the present time construction work is in progress on half of the proposed ultimate turbine room and on a third of the ultimate boiler room. The present turbine room will be 160 ft. long x 94 ft. wide, subdivided by a partition wall setting off a transformer room and series of electrical galleries, each 160 ft. long by 22 ft. wide. The present boiler house is 193 ft. long by 121 ft. wide. The first installation of generating units will include two double-flow Westinghouse-Parsons turbines with a normal rating of 6000-kw capacity and a minimum rating for 24 hours of 10,000 kw. These units will generate current at 13,000 volts which will be stepped up to 33,000 volts for distribution to suburban lines. The local property will receive direct current from an installation of three 2000-kw rotaries located in the turbine room. The control of the main units and all auxiliaries will be centered in a benchboard in one of the four galleries facing the turbine room. The galleries will be shut off from the turbine room by a brick wall inclosing glass lookout bays. The raising transformers will be located in the basement of the gallery section.

The present boiler room will include twenty 520-hp B. & W. boilers, of which 12 are now being installed. These boilers will exhaust into a radial brick stack 320 ft. 6 in. high above the basement floor line, having an inside diameter of 18 ft.



Architect's Drawing of Indianapolis Power Plant Now Under Construction

at the top. The boilers have internal superheaters and Roney stokers.

The facilities for handling coal at this large new plant include a coal trestle connecting the nearby steam tracks with the receiving hopper at the side of the boiler house. This trestle is built of plate steel girders carried on concrete piers and is of such a height that 10,000 tons of coal may be stored underneath it where it will readily be available for reclaiming with grab buckets. The plan of the complete station includes a duplicate coal trestle. As coal is received into the hopper along-

side the boiler house it will pass through a cracker and then into an intermediate receiving bunker. From this bunker it will be loaded by gravity into push cars running on an industrial railway leading to an elevator which will serve to raise the coal cars to tracks leading over the main bunkers above the boilers. These bunkers extend the full length of the boiler house and have a capacity of four tons per lineal foot. The industrial railway system within the boiler plant also will serve for carrying ashes from the plant to a loading hopper erected above the coal receiving hopper. A track also leads into the base of the stack and facilities thus are provided for carrying away the soot collected there.

Circulating water for the condensers which are being erected directly under the turbines and between the piers which support the turbines will be delivered to the pumps located close to the condensers by a duplicate system of large concrete intake and discharge conduits. Each of the four conduits, which have been built in a group, is 270 ft. long between the nearby river and the wall of the power plant. They also extend under the full length of the station. The conduits are 6 ft. x 12 ft. in section, each built of reinforced concrete and grouped as a united structure.

The large new power station as shown in an accompanying reproduction made from an architect's drawing has been designed with regard to attractive exterior appearance. The superstructure has been laid with buff and brown brick trimmed with Bedford stone and having superimposed copper cornices. The large window openings are fitted with Fenestral steel sash.

SPOKANE & INLAND RAILWAY COMPLETES BRIDGE OVER SPOKANE RIVER

The latest steel and concrete bridge built by the Spokane & Inland Railway, Spokane, Wash., was completed on Dec. 13, 1910, when an inspection trip was made by several members of the company.

The large window openings are fitted with Fenestra steel sash. The bridge is located a hundred feet south of the old wooden structure, and makes a more direct route between Spokane and Cœur d'Alene. The construction of this bridge has eliminated a number of severe curves on each side of the river and reduced the maximum grade from 1.5 per cent to 0.5 per cent. Excavations were re-

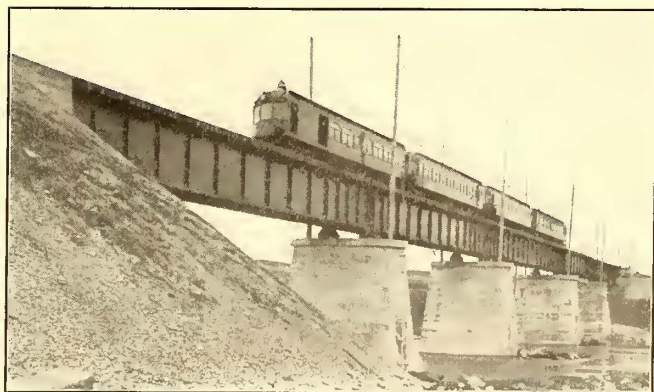


Plate Girder Bridge of the Spokane & Inland Railway on Route to Cœur d'Alene

quired 7 ft. below the river bed. As the material was compact cemented gravel, the concrete piers were constructed on the natural gravel. In grading for the approaches to the bridge, it was necessary to make a fill of 30,000 cu. yd. of material on the west side and a fill of 40,000 cu. yd. on the east side. The girders, which are 80 ft. or 100 ft. in length, are all 9 ft. 4 in. in depth and weigh 20 tons and 32 tons respectively. The total weight of steel used on the bridge was 286 tons. The girders were furnished by the American Bridge Company.

APPROVAL OF BOND ISSUE FOR CONEY ISLAND & BROOKLYN ROAD

An order of the New York Public Service Commission, First District, authorizing the Coney Island & Brooklyn Railroad to issue \$490,000 consolidated mortgage 4 per cent bonds is accompanied by an opinion written by Commissioner Bassett. The commission decided that, although the company may charge the cost of some improvements to capital account, sinking funds shall be created to retire in 20 years part of the bonds issued therefor. The discount on the bonds is to be similarly amortized.

The company applied to the commission on April 8, 1908, to authorize the issue of \$462,000 bonds. It desired to use the proceeds as follows: \$278,000 for estimated cost of reconstruction of road on Coney Island Avenue; \$16,000 to pay balance of the cost of 10 new cars above \$30,000 par value of car trust bonds; \$82,973 for balance of cost of reconstruction of power system over money therefor raised by sale of stock.

In an order adopted on March 8, 1910, the commission authorized the company to issue \$151,000 of the bonds, but on account of later developments a larger issue was approved. The opinion says in part:

"The main purpose is to pay for reconstruction of the two-track road on Coney Island Avenue between Park Circle and Coney Island. The present tracks are laid along the westerly edge of the roadway. A long-continued public demand has been exerted to cause the tracks to be placed in the center of the street. The Board of Estimate and Apportionment of the City of New York adopted, Jan. 18, 1907, a resolution changing the location of the tracks to the center of the avenue. Later the board provided by resolution for the parking of the center of the avenue and placing the tracks in spaces which are to be turfed and curbed.

"The company thereupon submitted an amended application, providing for construction involving a somewhat increased expense, and requested authority to issue \$568,500 bonds at 80, the proceeds to be used for the following: \$428,000 for reconstruction on Coney Island Avenue; \$16,000 balance of the cost of 10 new cars; \$7,241.26 cost of new construction of vestibules upon 100 cars; \$13,443.67 proportion of the cost of new elevated approach to the Brooklyn Bridge.

"The estimated cost of the work upon Coney Island Avenue as introduced by witnesses of the company is \$378,269. The unit prices and measurements are substantially approved by the engineers of the commission, but their estimate is that the cost should be \$353,468. This includes 10 per cent for contractor's overhead charges and profit and 10 per cent for engineering and incidentals.

"The 10 per cent for contractor's overhead charges and profit is allowed upon the entire cost of labor and materials, which includes the track, track special work, bonding, overhead trolley wires, overhead feeders, resetting of poles, underground conduits, cables, etc., and also an allowance to include the overhead charges of the general contractor. The 10 per cent for engineering and incidentals is allowed and divided into two parts: first, engineering, including cost of design and testing of all the construction and equipment items; second, incidentals, which would include superintendence and inspection, and also to provide for any contingencies, that is to say, expenses that may arise in the course of construction which were not anticipated when the estimate was made, together with the loss or waste of material.

"The engineers of the company and the commission concur in the opinion that the cost to reproduce the present structure upon Coney Island Avenue is \$140,291. If the new construction cost is \$353,468, the addition really made to the property is \$213,177. The engineers concur in the opinion that the present structure upon Coney Island Avenue was depreciated \$49,898, and that the salvage to be derived therefrom is \$10,676, leaving the value of present construction abandoned \$79,717. So much of the new work as represents additions to property,

namely, \$213,177, should be allowed to be paid for by the proceeds of bonds.

"The value of present construction abandoned by reason of legislative enactment, that is to say, \$79,717, is to be treated in a different manner. Vicissitudes of various sorts will compel a corporation to lose good material before it is worn out. But it is not justifiable to capitalize these losses permanently, because they are in no sense a permanent addition to the property of the company. Constant repetition of capitalizing such losses would result in undue enlargement of the capital. Ordinarily the commission would advise that such a loss be met at once out of the earnings, but in view of the fact that this company has been making very large expenditures for reconstruction out of earnings and will need to continue this policy for some time, it is considered that the company should be allowed to issue bonds for this amount and should make annual payments to a sinking fund sufficient to pay off said sum in 20 years from the date of this order.

"So much of the rest of the cost as represents depreciation on the present structure and salvage, that is to say, \$49,898 plus \$10,676, a total of \$60,574, should not be allowed to be paid for out of the proceeds of bonds. It was the duty of the company to set aside a fund to take up the depreciation, and it has, of course, the benefit of the salvage. These items have already been once capitalized and the commission cannot approve of their being again allowed, especially as the earnings of the company are sufficient if allowed to accumulate a short time to take care of this depreciation.

"Evidence is presented to show that in connection with procuring the right to relocation and construction expenses have been incurred for condemnation proceedings, consents of public authorities and property owners, and for litigations and negotiations, which ought to be considered as part of the cost and paid for from the proceeds of bonds. These include \$9,989.65 for canvassers, printing, engineers' services, condemnation commissioners, real estate experts, etc., and the attorneys' disbursements, \$2,061.85, besides fees of attorneys and counsel already incurred or necessary to the amount of \$50,000. The question arises whether these disbursements should become a part of the permanent capitalization. The usual percentage of the cost of legal work in connection with construction is from 2 to 5 per cent. The improvement under consideration, however, has, under the policy pursued by the company, consisted largely of legal work, and although the commission is unwilling that the whole of the sum should be permanently capitalized, it considers that it is fair under all the circumstances that one-half should be permanently capitalized and that the other half, although bonds may be issued therefor, should be paid in 20 years by creating a sinking fund. This makes the total allowance for the Coney Island Avenue construction work \$354,495.50, of which \$110,742.75 should not be permanently capitalized.

"The items of \$16,000 for new cars and \$7,241.26 for vestibuling were paid out of the proceeds of promissory notes. Bonds issued therefor are to refund the borrowings. These items have been approved by engineers of the commission, and as they are additions and betterments should be allowed.

"The item of \$13,443.67 for bridge work was also paid out of the proceeds of promissory notes. The property represented by this outlay became at once the property of the city, subject to being repaired or replaced from time to time by the several operating companies so long as they use it. The 10-year definite period of use has now expired and the company's tenure of the bridge is terminable on three months' notice. In case of termination no payment for the property need be made by the city. Under the circumstances the commission is of the opinion that the cost of this work should be paid out of earnings. The commission is willing to prescribe the long period of 20 years for its payment by the sinking fund method.

"Authority should accordingly be given to issue bonds, the proceeds to be used for the following purposes:

"Additions, \$213,177; property abandoned pursuant to legislative enactment, \$79,717; other expenses, \$62,051.50; balance

of cost of new cars, \$16,000; cost of new vestibules, \$7,241.26; proportion of cost of the new approach to Brooklyn Bridge, \$13,443.67; total, \$391,630.43.

"In view of the necessity of the case and of the great public need of this improvement, the commission is of the opinion that it should authorize the sale of these securities at not less than 80 and that the money to be procured by issue of the additional bonds necessary to cover this discount is reasonably required for such purpose. If sold at 80 the issue will need to be not \$391,630 but \$489,539. The additional amount of bonds necessary to be sold by reason of this discount is therefore \$97,908. The discount should be spread over the term of the bonds and amortized from income as a condition of the authority to issue the bonds.

"The order should therefore, in the clause stating that the bonds authorized are not, in whole or in part, reasonably chargeable to operating expenses or to income, except specifically the bonds authorized for the purpose of making good such discount."

REPORT TO PUBLIC SERVICE COMMISSION ON ALBANY CARS

The New York Public Service Commission, Second District, has transmitted to the United Traction Company of Albany the result of an investigation made by the commission and its electric railroad inspector, Charles R. Barnes. As a result the commission has recommended to the United Traction Company that 18 new double-truck cars, with a seating capacity of not less than 40 passengers, with arrangements for exit or loading on each end, be purchased; that the cars be put in service on the Pine Hills and West Albany lines; that after the new cars are received none of the present 18-ft. or 16-ft. cars shall be run upon these lines except in cases of emergency. The company is asked to advise the commission by Jan. 2 if it will comply with the recommendations, or any of them, without formal action by the commission.

From the investigation conducted by the commission the following conclusions have been reached:

1. That the double-truck car properly equipped is as safe to operate as the present single-truck car with its present equipment.
2. That reconstructed car No. 82 as at present constructed and equipped is not considered a safe car to operate on the Pine Hills and West Albany lines on account of its excessive length over all compared with its length of wheel base, and on account of its weight loaded, and with only hand-brake equipment.
3. That more passengers can be carried in a given length of time in a double-truck car with front exit than a single-truck car with single-end operation.
4. That additional service is needed on both the Pine Hills and West Albany lines.
5. That very little if any relief can be afforded to the Pine Hills and West Albany lines by the double tracking of Hamilton Street. Any additions to the present belt line which may be made as a result of such double tracking are necessary to provide for present traffic on that line.
6. A double-truck car seating not less than 40 passengers should be adopted as the standard for use on the important lines in the City of Albany, and that all additions to the equipment for use on such lines should be of that type.
7. That all of the 16-ft. and 18-ft. cars in use at present on the Pine Hills and West Albany lines (18 in number) should be replaced by the above type of car.
8. That if all of the 16-ft. and 18-ft. cars at present in use on the Pine Hills and West Albany lines were replaced with cars seating 40 people the congestion of traffic which now exists during the rush hours on these lines would be materially relieved and passengers during these hours could ride in comparative comfort and convenience.

The commission finds that the estimate made by the com-

pany of the cost per car for double-truck cars of \$7,000 each is practically correct, but to replace the 18 small cars in use would require an expenditure of \$126,000 instead of \$140,000, as estimated, for new cars, and as it is proposed by the company to substitute the small car with reconstructed cars, the cost of such reconstruction must be deducted from the \$126,000 to show the additional expenditure caused by the purchase of double-truck cars instead of the use of the reconstructed cars.

To the statement on behalf of the company that an expenditure of \$70,000 for car houses would be necessary for the housing of large cars the commission points out a plan whereby this can be done satisfactorily for \$6,000.

To the contention that the installation of large cars will entail an additional expenditure of \$90,000 for transformer stations and feeders the commission says that this is entirely unnecessary and that the replacing of 16-ft. and 18-ft. cars by 18 large cars on the West Albany and Pine Hills lines would not require transformer capacity additional to that which the company now has.

The commission points out, however, that the \$90,000 estimated by the company to be necessary for additional transformer capacity could be spent in additional power-house capacity.

In response to the contention that the operation of the large double-truck cars on the Pine Hills and West Albany lines would add yearly to the operating cost the sum of \$36,700, the commission's figures show that the operation of double-truck cars during the same hours that the present 16-ft. and 18-ft. cars are now run on the Pine Hills and West Albany lines would add only \$3,110 to the yearly operating cost.

The commission estimates that the total additional cost of the 18 new cars and the necessary changes in car house would make a total expenditure of \$132,000, instead of \$300,000, as estimated, which at 5 per cent interest would add \$6,600 to the yearly carrying cost, instead of \$15,000, as estimated, making a total increased cost for the items mentioned by representatives of the company, due to putting on large cars on these lines, of \$9,710, instead of \$52,000, as estimated.

ELECTRIC RAILWAY BUSINESS POSSIBILITIES IN THE FAR EAST

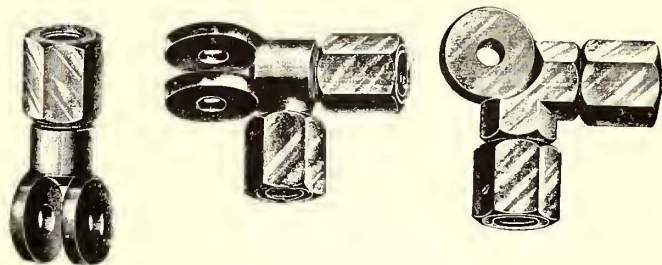
An American consulate in the Far East reports that an electric tramway company in his district will extend and improve its lines in the near future. The exact time has not yet been decided and specifications have not been completed, but a positive statement has been received from the company that American firms will be given an opportunity to bid on materials. The consul believes it would be advisable for American firms that can furnish steel rails and rolling stock to write at once to the general manager and request that specifications be sent them through the consulate as soon as they are decided upon. Further information regarding this matter can be obtained by applying to No. 5885, Bureau of Manufactures, Washington, D. C.

The Public Service Commission of New York, Second District, has called a conference of interurban railway officers to be held in Syracuse on Jan. 19, 1911, at which questions relating to the safety of interurban railway operation will be discussed. Charles R. Barnes, electrical expert of the commission, is preparing a program of subjects to be assigned to different railway officials for discussion.

The *Light, Railway and Tramway*, London, England, says that a life of Sir J. Clifton Robinson, who died recently, is being written by G. E. Cummings, who has for some years been associated with Sir Clifton. A preface to the work, which will be published by Messrs. Ouselev and will include an account of the origin and development of the tramway systems of the world, has been written by Sir William Bull, M. P., a personal friend of the subject of the memoir.

THREE CABLE ANCHORS

The three cable anchors shown in the accompanying cuts are recent products of Dossert & Company, New York, N. Y. The design indicated as style "S" is used to connect the end of a cable to a strain insulator, so as to anchor it. The next cut shows style "R," which is employed to anchor one cable and to



Cable Anchors, Styles S, R and E

take a branch wire off the anchor cable. The third cut shows style "E," which is used to splice and anchor two cables that are at right angles to each other. All of these can be used on stranded conductors only.

A NEW FREIGHT LOCOMOTIVE FOR THE GALT, PRESTON & HESPELER STREET RAILWAY COMPANY

The accompanying illustration shows the new Westinghouse-Baldwin electric locomotive recently purchased by the Galt, Preston & Hespeler Street Railway, of Ontario. This company operates some 30 cars on a standard-gage interurban line, 21 miles in length, connecting the places named in its title with the towns of Freeport, Centreville, Berlin and Waterloo. The power station and repair shops are at Preston. The railway traverses a farming country and does a thriving business in both local and through passenger and freight service.

Several years since this railway purchased a Westinghouse equipment consisting of four No. 93-A d.c. motors with a nominal rating of 60 hp each at 600 volts, for a locomotive similar to the one shown, but of smaller capacity. Its operation has been eminently satisfactory in every respect and the recent order for a larger locomotive of the same general characteristics argues strongly for the excellence of design and low maintenance charges of this type of slow-speed freight locomotive.

The new locomotive is designed for standard gage and weighs, complete, 100,000 lb. The gear ratio of 16:57 gives a normal speed of 8.25 m.p.h., at which speed a tractive effort of 18,220 lb. is developed. The maximum tractive effort is 25,000 lb. The locomotive carries four No. 308-B2 interpole d.c. motors having a nominal total rating of 400 hp at 600 volts. These motors are fitted with special windings for slow-speed service. Standard nose suspension is used.

Unit switch control is provided through two master controllers, one in each end of the cab. These controllers carry only the very small current from a storage battery, for exciting the electromagnetically actuated needle valve which admits air at 70 lb. pressure to the air cylinders of the unit switch. The action of each switch is therefore positive and independent of fluctuations of the line voltage.

This locomotive is of the double-swiveling truck type, with rigid frame and centrally located cab. The trucks are of the equalized pedestal type, with square wrought-iron frames and semi-elliptic springs. Each axle carries one motor. The

Standard wheels have cast-iron centers, with steel tires bolted on. The flanges, journals and boxes are M. C. B. standard.

The longitudinal frame sills consist of four 10-in. channels, the width over the outside sills being 92 in. The end bumpers are of cast iron. They have heavy lugs which are riveted to the longitudinal sills and carry M. C. B. automatic couplers. Suitable steps are provided at each end. The frame bolster truss members consist of wrought-iron plates, 1 $\frac{3}{4}$ in. x 15 in., which are strongly braced. The entire frame construction is most substantial.

The cab is of wood, and is roomy and convenient, with four windows in each side. These, with additional windows in the ends, give the operator an unobstructed view in all directions. Suitable hoods at either end of the cab cover the resistance and other electrical equipment.

This locomotive is fitted with a hand brake on all the wheels,

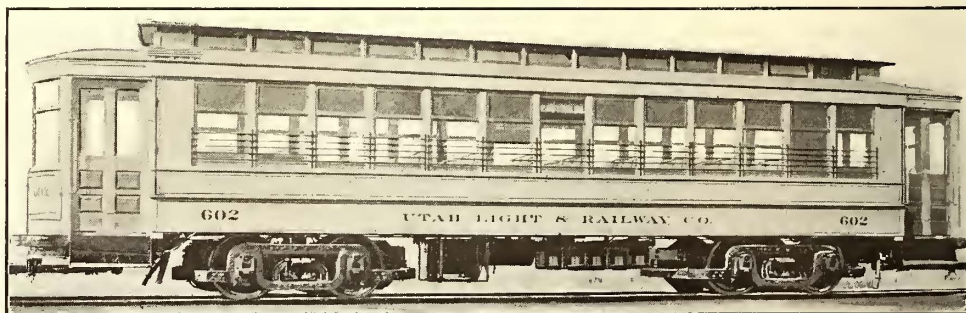


Electric Freight Locomotive for the Galt, Preston & Hespeler Street Railway

also with the Westinghouse air brake, schedule ET, with motor-driven compressor. Sand boxes, with pneumatic sanders, are provided at each end. The equipment also includes a bell and whistle. The principal dimensions are as follows: Wheelbase of each truck, 7 ft. 4 in.; total wheelbase of locomotive, 29 ft.; diameter of driving-wheels, outside, 36 in.; diameter of driving-wheels, centers, 31 in.; journals, 5 in. x 9 in.; width, 9 ft.; height to top of cab, 12 ft.; length, 36 ft.

CARS FOR THE UTAH LIGHT & RAILWAY COMPANY, SALT LAKE CITY, UTAH

The St. Louis Car Company has just shipped to the Utah Light & Railway, Salt Lake City, 12 cars of its semi-convertible type, in which both sash enter the roof. These cars are 34 ft. 4 $\frac{1}{2}$ in. over the corner posts, the length of the platform inside is 4 ft. 6 in. and the length of the car over bumpers is 45 ft.



Vestibuled Car for Utah Light & Railway, Salt Lake City, Utah

4 $\frac{1}{2}$ in. The width over the side posts is 8 ft. 4 in. and the width over all 8 ft. 6 in.

The side sills consist of long leaf yellow pine plated on the inside with $\frac{3}{8}$ -in. x 14-in. steel plate for the entire length with yellow pine subsills; the whole is thoroughly bolted together. The center sills are 5-in. x 9 $\frac{3}{4}$ -lb. steel I-beams, with yellow pine fillers on each side. The end sills are of oak, 5 in. x 10 in., plated on the inside with $\frac{1}{2}$ -in. x 9-in. steel plates; the

intermediate cross frame and bracing are of yellow pine, angles and flat steel.

The cross framing between the center sills consists of cast-iron blocks with a hole in the center to permit the passage of electric cables and air pipes from end to end of car body. The lower floor is of 13-16-in. tongued and grooved flat yellow pine laid lengthwise, while the top floor is of 13-16-in. tongued and grooved vertical-grained yellow pine laid crosswise under the seats. In the aisles inside on the top floor the floor mats are of removable hard maple laid lengthwise.

The platforms are supported by four knees at each end of car, the larger outside knee being a 7-in. 12 $\frac{1}{4}$ -lb. steel channel bent in shape and extending from the buffer to the bolster along the side sills. This knee is reinforced with 1-in. x 6-in. steel plate forged to shape and riveted to the inside of the channel. The center knees consist of railroad T-rail which weighs 45 lb. per yard and extends from the buffer to a point 4 ft. $\frac{3}{4}$ in. back of the bolster.

The panels are of the concave-convex type. The cars have 13 windows per side, two at each end, and double sliding doors in the bulkhead. The interior finish is of cherry. The metal trimmings throughout are of bronze highly polished and lacquered and are of the car builder's standard pattern. The cars are further equipped with four illuminated signs and walk-over seats upholstered in rattan and furnished with a top rail. The signs and seats are also of St. Louis manufacture. Besides the vestibule doors, there are four channel iron folding gates per car.

PAY-AS-YOU-ENTER CARS FOR OMAHA

The Omaha (Neb.) & Council Bluffs Street Railway lately received from the American Car Company the 25 pay-as-you-enter cars of the type shown in the accompanying illustration. The cars are of the single-end closed type, 41 ft. long over all, with body 29 ft. 4 in. long. The width over the sill and over the posts at the belt is 8 ft. 3 in. and the height from the sill to the trolley base is 8 ft. 11 $\frac{3}{4}$ in. The seating capacity of 34 is furnished by Brill transverse seats except

SEAMLESS COLD-DRAWN STEEL TROLLEY POLES

Under normal conditions of service, a trolley pole is subjected to stress as a beam rigidly secured at one end and loaded on the free end. This condition of loading causes a maximum bending moment at the point of support, which bending moment decreases uniformly to zero at the point of applying the load. Abnormal conditions cause other stresses of unknown magnitude which can be provided against only by a judicious increase in the strength of the pole over that required for the known stresses.

The trolley pole of minimum weight to resist the known stresses would have a maximum cross-sectional area at the trolley base or point of support, with the cross-section decreasing uniformly to nothing at the harp. For practical reasons such a theoretical pole is not desirable. In the design of the poles made by the National Tube Company, Pittsburgh, Pa., the requirement for minimum weight has received careful consideration. Its poles are made from No. 13 gage material, as experience has shown that a lighter gage may fail by local injuries while a heavier gage simply adds to the weight of the pole. The theoretical requirement for a pole of minimum weight points out a method for increasing the strength of the pole without a proportionate increase in the weight. This method consists in using a reinforcement at the base end and on the inside of the No. 13 gage member. The length of this reinforcement is varied, to suit the requirement as to strength, up to a maximum which occurs when the length of the reinforcement is such that the resistance to bending at the end of the reinforcement is just equal to the resistance to bending at the trolley base. The reinforcement is integral with the body of the pole.

These trolley poles are regularly manufactured in two designs, namely, standard "A" and standard "B." In the standard "A" pole the reinforcement is only of sufficient length to prevent deformation of the circular section by the stresses caused by the service of the pole or by the clamp on the trolley base. This design is suitable for all ordinary service and makes the lightest pole it is practicable to manufacture or use.



Pay-as-You-Enter Car for the Omaha & Council Bluffs Street Railway

opposite the end body doors, where short longitudinal seats are used to facilitate passage. The entrance and exit doors at the conductor's end slide into a center bulkhead. The motorman's platform is divided with a vestibule door which closes the exit. When this door is closed the step is covered by the piece hinged to the bottom of the door, thus making it impossible to board the car. All the interior fixtures are of polished bronze. The curtain fixtures were furnished by the Curtain Supply Company. The trucks are Brill 39E maximum traction type, each carrying a GE-80 motor. The cars carry Tomlinson couplers, Hunter destination signs, Mason safety tread, International registers and Consolidated heaters.

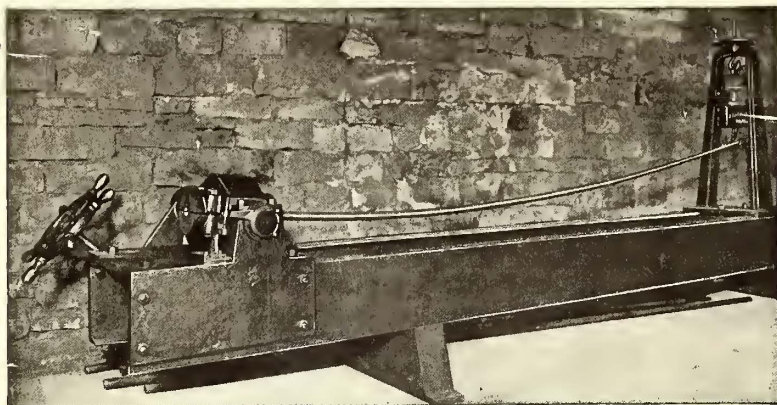
In the standard "B" design the reinforcement is of the maximum length required by the condition of two points in the length of the pole with equal resistance to bending. Special designs are made to meet special requirements. All of the poles are made from a basic open-hearth steel of about 0.17 per cent carbon, low in phosphorus and sulphur. Prior to the last cold drawing operation, the material is given a special heat treatment to leave the grain in the finest condition. The elastic limit of the material in the finished pole is from 60,000 lb. to 70,000 lb. per sq. in.

The machine for testing trolley poles includes a frame or base of 15-in. steel channels, the rigidity of which is so great

that the deflection of the frame is negligible. At one end of this frame is a sliding adjustable stand carrying the load-weight device, which consists of a scale of 500 lb. capacity reading to 1/2 lb. and sensitive to 2 oz. At the other end of the frame is

which is fixed a micrometer reading to 0.001 in. whereby the movement of the horizontal shaft is measured. The micrometer reading is translated into deflection by simple proportion.

In testing trolley poles, the scale is set at the proper distance from the rotating chuck, corresponding to the length of trolley pole under test; the pole is then placed in the chuck and on the scale, and the weight of the pole so supported recorded. The chuck is then tightened. The micrometer is set at zero and the scale elevated or depressed in its stand until it indicates the weight of the pole as before recorded. Load is then applied by the hand wheel and the deflection measured by the micrometer.



Trolley Pole Testing Machine

the device for applying the stress to the piece under test. This consists of a frame carrying a horizontal shaft capable of being rotated by a hand wheel operating a worm and gear,

LOADS AND DEFLECTIONS OF VARIOUS LENGTHS OF POLES.

Length Ft.	Average Weight Lb.	Load Carried at End of Pole at Elastic Limit. Lb.	Deflection Due to Load at Elastic Limit and Weight of Pole, In.
Standard "A" Pole.			
12	18.4	48	13 1/4
13	20.3	44	15 1/4
14	22.3	40	17 3/4
15	24.3	36	19 1/2
Standard "B" Pole.			
12	22.7	75	22 1/2
13	24.7	69	26 1/2
14	26.7	62	30
15	28.7	55	33

through an angle of about 10 deg. This amount of rotation will produce a deflection of 30 in. on a test piece 16 ft. long.

maintenance expenses can be quickly detected. This end is readily attained by employing a car record form such as the one used by the Lynchburg (Va.) Traction & Light Company and reproduced herewith. This blank is a monthly summary of daily labor and material reports from the shop on work done on individual cars. The original form is 32 in. x 16 in. in size and is divided into enough columns vertically to allow the listing on one sheet of all the cars operated. It will be noted that the left-hand side of the sheet contains a list of the principal truck, body and electrical parts. Reading vertically under each car number shows the separate truck, body or electrical costs as well as the total maintenance cost for one car; reading horizontally shows the total monthly cost for all cars for any given item such as brushes, rheostats, etc. Space is reserved also to record the mileage of each car. This simple rec-

RECORDING CAR MAINTENANCE

The company which operates only a few score cars cannot afford to keep elaborate records of each equipment detail, but it is desirable, nevertheless, to have a fairly good idea of the comparative cost of different equipments so that excessive

COST OF CAR MAINTENANCE for the Month of _____ 19__																																																							
Car Numbers	10		11		12		13		14		15		16		17		18		19		20		21		22		23		24		25		26		27		28		29		30		31		32		33		34		35		36		TOTAL
	No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost											
TRUCKS	Carbon Brushes																																																						
	Brake Shoes																																																						
	Wheels																																																						
	Truck Parts																																																						
	Brake Parts																																																						
	Air Equipment																																																						
	Fenders																																																						
Time																																																							
Time Pro-rated																																																							
Sub Total																																																							
BODIES	Bells																																																						
	Lamps																																																						
	Woodwork, Hand-les, Doors, Lugs, S.C.																																																						
	Glass																																																						
	Trolley Wires, Run and Parts																																																						
	Heater Parts																																																						
	Register Parts, Cords, &C.																																																						
Time																																																							
Time Pro-rated																																																							
Sub Total																																																							
ELECTRIC	Batteries																																																						
	Fields																																																						
	Armature, Coils, Commutators, Not, &C.																																																						
	Pinions																																																						
	Gears																																																						
	Babbitting																																																						
	Controller Parts																																																						
	Wires, Cables, Switches, &C.																																																						
	Headlight Parts																																																						
	Rheostat																																																						
Time																																																							
Time Pro-rated																																																							
Sub Total																																																							
Grand Total																																																							
Mileage																																																							

Maintenance Record of All Cars Used by the Lynchburg Traction & Light Company

The horizontal shaft carries a chucking arrangement by which the piece under test is clamped rigidly with the center lines of the horizontal shaft and the piece under test intersecting. The end of the horizontal shaft carries an arm in the end of

ord has been found of material value. Thus, in one case, it clearly demonstrated that certain GE-800 equipments were costing just about twice as much for maintenance as GE-80 motor outfits in the same service.

News of Electric Railways

Toledo Traction Situation

A man whose identity has been kept secret told John B. Merrill, chairman of the committee on railways and lights of the City Council of Toledo, Ohio, on Dec. 21, that he represented a group of capitalists who were ready to equip a system for the city to be operated with a straight fare of three cents and universal transfers, and to permit the insertion of a clause in the grant that would give the city the right to purchase the property after the expiration of a certain period at a fixed price or to nominate a purchaser. Mr. Merrill placed the matter before Mayor Whitlock. As the franchises of the Toledo Railways & Light Company on a large part of the streets do not expire for some years, any attempt to establish a new system would undoubtedly result in complications that would keep the city in a turmoil for many years.

City Solicitor Schrieber said that the company could continue to operate where its rights have not expired, and that its tracks could be condemned for joint use for interurban purposes only. He suggested that there might be two ways of solving the present problem. One was to make arrangements with the company to use the streets where its franchises have expired until the expiration of all others in 1914 and then take up the matter anew. Another was to take up the question of a blanket franchise now and give an entirely new grant to take the place of all others, as suggested by the administration.

The letter addressed to Mr. Lang on Dec. 15 by Mayor Whitlock, which was mentioned in last week's issue of the *ELECTRIC RAILWAY JOURNAL*, said in part:

"It is our hope that we may come as speedily as is consistent with the magnitude of the question involved to an understanding that will make possible not only the lowering of the rates of fare charged, but that enlargement and improvement of the service which is demanded by the growth of the city and desired alike by the people and by the company.

"In our view the modern theory of the relations between public service corporations and municipalities requires that the control of service should rest exclusively with the public authorities as the representatives of the people for whom the service is performed. In saying this we do not wish to be understood as ignoring in any sense the rights of those who are to perform this service, and therefore I hasten to add that no such control of service is intended as will either impair the real value of the company's property or affect its ability to earn a just rate of return in addition to the cost of the service rendered. As your company is no doubt aware, we of this administration have long declared, and still believe, that a rate of fare fixed at three cents with universal transfers would be possible under a reorganized system that would enjoy the benefits of a more economical routing of cars, of improved and more scientific methods for the collection of fares and of those betterments to which you referred in your letter of July 5, not the least of which inducements is that stimulus to traffic which reasonably may be expected from a reduction in the rate of fare by the company.

"Upon this point the administration has pledged itself to the people of the city, and its pledges are, of course, inviolable. But inasmuch as any franchise, before it becomes operative, must be submitted to the people for their approval, we think it is safe to say that if it should be clear that 3-cent fares are impracticable the people, with whom the power rightly rests, would nevertheless solve the whole problem upon just and equitable terms. That is to say—I wish not only to avoid misunderstanding but to be perfectly frank—if 3-cent fares are unjust, then the people would not insist upon them, and we intend, after the subject has been thoroughly and publicly investigated and discussed, to go to the people with the result, to consult and abide by their judgment and, by the submission to a vote of the whole people of any franchise ordinance that may be enacted, to leave with them the conclusion of the whole matter.

"We suggest the following for consideration of your company:

"1. That the City of Toledo and the Toledo Railways & Light Company immediately proceed to negotiate in public a general settlement of the street railroad problem, that settlement to be reached under an ordinance to be drawn upon the following lines:

"(a) The reservation to the city of the power to control the service, character, schedules and routes of all cars operated upon the streets of Toledo, including the interurban cars.

"(b) The stipulation of a fixed present value of the company's property, with suitable provisions for additions thereto, such value being the basis of a fixed return to the company over and above operating expenses for the service performed.

"(c) If, after ascertaining this value and the return to be justly made upon it, considering it in connection with the expense of operation under the method herein set forth, it shall be apparent that a 3-cent fare is impracticable and unjust, then to provide a sliding schedule of fares that will automatically adjust the rate of fare to be charged at any time, so as to provide for the cost of operation, the payment of interest and taxes and the just returns already mentioned.

"(d) Suitable provisions to protect the company against any loss in the value of its property and against such regulation of service on the part of the city as might impair the ability of the company to earn the agreed dividends upon capital employed.

"(e) Suitable provisions for the maintenance of the property as well as reasonable restrictions upon inflation of the cost of operation or maintenance.

"(f) Suitable provisions for extensions by the building of new lines and otherwise.

"(g) A reservation to the city of the power to purchase the property of the company when authorized by the State to own and operate street railway systems, or to designate a purchaser therefor at an agreed price.

"(h) The reservation to the city of the power of revocation upon failure to comply with the terms of the ordinance.

"(i) Such other provisions as may be necessary to carry out the general principles above outlined.

"2. After the preparation of such an ordinance, leaving in it blanks for the ultimate insertion of valuation and the agreed or, in certain contingencies, the initial rate of fare, we suggest that the value of the property be fixed. The preparation of the ordinance and the determination of value should be by open negotiations between the company and the Council, the company selecting a representative, the city a representative, and these two to negotiate in public in the Council Chamber and in the presence of the Council in its official capacity the terms of the ordinance and the value of the various items of the company's property, arriving in the end at an agreed valuation and also at the rate of fare which shall seem to be enough to produce the revenue required to meet the charges fixed by the ordinance."

The Business Men's Club has decided not to act upon the suggestion that a committee be appointed to secure the data now in possession of the city and keep in close touch with the negotiations. The club considers that its services may be needed under certain contingencies and that it will then act, if necessary, but unless so needed it will not take part in the negotiations.

At noon on Dec. 24, 1910, Albion E. Lang, president of the Toledo Railways & Light Company, sent the following letter to Mayor Brand Whitlock in reply to the one addressed to Mr. Lang by that official recently, of which an abstract giving the principal statements is published in the foregoing:

"We desire to convey to you our appreciation of the kindly expressions in your letter, and fully agree with you that satisfactory service is one of the most important questions for consideration.

"In order to put the franchise question in concrete form for discussion we respectfully ask that you cause to be

drawn an ordinance, based upon the principles enunciated in your letter, and fully protecting the rights and interests of the city and its citizens, with such provisions safeguarding the company as to you seem fair. In accordance with your suggestion, the ordinance should contain blanks for the ultimate insertion of such matters as valuations and rates of fare.

"Upon receipt of this ordinance, we will immediately draft such amendments or additions, if any, as the company may deem necessary. It seems to us that this course will put the matter in definite form for the public discussions referred to in your letter, and confine these discussions to those matters as to which the city and company may not find themselves in full accord.

"We recognize how important it is for the growth and welfare of the city that the franchise question should be disposed of speedily, and we feel sure, with the form of an ordinance prepared as suggested above, the discussion will be productive of much quicker results, and will insure what the city and company each desire, namely, the fairest and earliest possible settlement."

Subway Offer in Newark

Thomas N. McCarter, president of the Public Service Corporation of New Jersey, addressed a letter on Dec. 22, 1910, to Mayor Haussling, of Newark, which contained an offer for the construction of a subway in Newark for surface cars of the Public Service Railway as a solution of the traffic problem in that city, and for the use of the Morris Canal for high-speed operation. In his letter to the Mayor Mr. McCarter said, in part:

"The time has come when it is imperative that the problem of congestion at the 'Four Corners' and the development of rapid transit for Newark and its suburbs should be solved. Five years ago our schedules called for the passage of 387 cars per hour across the 'Four Corners' during the rush hour. The present schedules call for the passage of 525 cars during the same period. For nearly eight years my associates and I have been carefully studying this problem, and we are prepared to suggest a plan which, we think, will accomplish the purpose. It follows:

"First—A subway into which surface cars may run should be built on Broad Street, from approximately Bridge Street to Clinton Avenue. Such small portions of the apexes of Washington Park and Lincoln Park as may be necessary for the purpose should be used for the portals of the subway, in order that Broad Street itself should not have to be cut. This portion of Broad Street covers the congested centre of the city, and a subway constructed along its length would be available for such portion of the cars on practically all north and south lines of the city as it would be found desirable to operate therein.

"Second—If possible, the Morris Canal should be abandoned and its roadbed, from the Pennsylvania Railroad westward at least, should be similarly utilized as an open-air subway. Such of the cars as thought desirable on all of the east and west lines of the city could enter this open subway near the Market Street depot and emerge therefrom at various points on the hill. These two subways would cross (of course not at grade) at the apex of Military Park. By their joint construction and use rapid transit to all the outlying sections of the city and to the suburbs would be provided, while the surface tracks would remain to be devoted principally to the short-haul traffic.

"The expense attendant upon the construction of such a system as is now suggested can be handled in two ways, either of which would be agreeable to this corporation. If the corporation could obtain a franchise for the Broad Street subway under fair terms and for a proper duration of time, and could acquire the bed of the canal, it would finance the entire undertaking. If, on the other hand, it was deemed better for the city to build and own the Broad Street subway and acquire title to the canal bed and equip it for subway purposes, the corporation would be willing to lease both for the purposes of operation, paying a rental therefor that would pay the interest on the cost of the improvement, and in addition thereto such a sum annually as would, compounded over a period of years, amortize the entire cost of the improvement to the city during the life of the lease, so that at the end thereof the city would own the subways without cost to itself.

"I also think it would be possible to induce the Pennsylvania Railroad to extend its high-speed line now proposed to terminate at Saybrook Place to practically a junction point with these subways at the apex of Military Park.

"In connection with the development of the canal, if the city saw fit, another municipal improvement could be made, namely, the removal of the market and the development of a wide thoroughfare embracing both the present North Canal Street and South Canal Street and the present location of the market, running easterly from Broad Street to connect with Passaic Avenue or other new highways in the eastern section of the city.

"The Lehigh Valley Railroad, which is the lessee of the Morris Canal & Banking Company, is naturally anxious to have the canal abandoned, as its continued operation causes an annual financial loss to that corporation of approximately \$250,000. The Public Service Corporation has no interest, direct or remote, in the abandonment of the canal, except the possibility of utilizing it when abandoned for the purpose set forth in this letter.

"Third—If the abandonment of the Morris Canal is impracticable within a reasonable time, the alternative is a subway on Market Street of a type similar to the one proposed for Broad Street, which should run from the Market Street station of the Pennsylvania Railroad to a point in the approximate vicinity of the court house, to be used by the east and west lines in precisely the manner outlined for the use of the Broad Street subway by north and south lines. This is obviously by no means so attractive a proposition as the canal and is confronted with some engineering difficulties.

"This corporation has no pride of opinion in the plan suggested in this letter if a better one can be devised. I suggested to your honor that the whole subject be taken up promptly by the city officials in conjunction with the representatives of this corporation and that the Public Utility Commission and the Board of Trade be invited to cooperate."

Cleveland Traction Situation

A. Winthrop Coffin, of Perry, Coffin & Burr, Boston, Mass., bankers, began to investigate street railway conditions in Cleveland on Dec. 19, 1910, at the instance of N. W. Harris & Company, New York, and upon his report will depend the decision of the bond house as to whether or not the needs of the Cleveland Railway for the next few years will be financed. All of the bonds of the company, which amount to about \$12,000,000, will become due within the next two years. Mr. Coffin stated that the following important points form the basis of his investigation and of the report which he will make:

First—Character of the city, including the territorial size and quality of its people and industries.

Second—Franchise under which the company is operating.

Third—Physical property of the company and its condition.

Fourth—The earning capacity.

Fifth—The management.

It is thought that Mr. Coffin will dwell particularly in the report on the franchise. He has refused to discuss the matter, however.

Mr. Coffin suggested that what might be termed a belt line, extending from the lake, on one side, through the outskirts of the city to the lake, on the other, would aid in retaining the 3-cent fare, with a cent for a transfer. The line suggested would cross every line radiating from the center of the city, and by taking a large proportion of the travel would lighten the traffic on the direct lines considerably and shorten the average length of haul. Councilman Shimon has prepared a resolution to be introduced at the next meeting of the Council which calls upon Street Railway Commissioner Dahl to prepare estimates for such a line.

Mr. Coffin is acquainted with the officers of the Cleveland Railway, former Mayor Tom L. Johnson and a number of the local bankers, and he has taken advantage of this fact and consulted with many of them on the situation. Street Railway Commissioner Dahl has also been consulted frequently.

J. J. Stanley, president of the Cleveland Railway, was

quoted in one of the local papers as saying that the bond houses will undoubtedly ask for some changes in the Taylor grant before they will take the bonds of the company, but did not indicate what these changes would be.

Recent observations of the Health Department have shown that on an average the air in the street cars is as pure as in school buildings.

Before leaving the city on the evening of Dec. 23, 1910, Mr. Coffin expressed some doubt as to whether a subway system would pay in a city the size of Cleveland. He feels that a city should have a population of 1,500,000 people to make a subway system profitable, especially where so many lines must be built.

Horace E. Andrews, former president of the Cleveland Railway, stated on Dec. 25, 1910, that he would meet Allen B. Forbes, of N. W. Harris & Company, and A. W. Coffin in New York on the afternoon of Dec. 28, 1910, but asserted that nothing could be said about financing the needs of the company until after that meeting.

Tax Questions in Ohio

Attorney-General Denman of Ohio has attacked the contentions of the Cincinnati, Georgetown & Portsmouth Railway and the Felicity & Betnel Railway, both of which had previously asked for an order to restrain the State tax commission from listing them as railroads and charging them with the excise tax under the Langdon law. The companies claim they are not railroads under the intent of the law, because they are not operated entirely by steam. The Attorney-General contends that the powers granted in the charter govern the matter and not the manner in which cars or trains are operated. He asserts that the facts stated in the petition of the companies are immaterial and that the properties should be classed as railroads.

Judge Rogers, at Columbus, Ohio, recently granted a temporary order restraining the State Tax Commission from certifying the Youngstown & Ohio River Railroad to the State Auditor and State Treasurer as a steam railroad. The company operates between Youngstown and East Liverpool, Ohio. It asserts that only 14 per cent of its business is done by trains operated by steam, and that if it is compelled to pay a tax of 4 per cent on its gross income as a railroad it will be compelled to abandon the freight business, to the inconvenience and damage of its patrons and itself.

In its first annual report to the Governor the Tax Commission of Ohio discusses the situation arising as the result of the contentions of the Ohio Traction Company, in a case filed recently in the court, as follows:

"The Ohio Traction Company owns and operates an interurban railway between Cincinnati and Hamilton. As such it made report of its gross earnings from the operation of the 25 miles of interurban railway, amounting to \$203,080, the taxes upon which would amount to \$2,437.90. But the Ohio Traction Company, in addition to owning the interurban railway between Cincinnati and Hamilton, is the owner of the Traction Building, in Cincinnati, from which it receives a large income. It is also the owner of the stock of the Cincinnati Traction Company, from which it also receives a large income, and the owner of stock in the Cincinnati, Dayton & Toledo Traction Company, from which it receives income.

"Section 52 of the act of May 10, 1910, requires interurban railways to report 'the entire gross earnings, including all sums earned or charged, whether actually received or not, for the year next preceding the first day of May, from whatever source derived, for business done within the State, excluding therefrom all earnings derived wholly from interstate business or business which is done for the federal government.'

"The commission ruled that under the provisions of that section the Ohio Traction Company should return its earnings from the Traction Building in Cincinnati and from stocks in other companies. The company, being dissatisfied with this ruling, has instituted proceedings to enjoin the commission from considering anything but the earnings from its operation of the interurban railway in determining the amount of the gross earnings of the company to be certified to the Auditor of State for computing the amount of its excise tax, and the action is now pending.

"The Ohio Traction Company is a corporation organized under the laws of Ohio, with an authorized capital stock of \$20,000,000, of which \$16,000,000 is issued and outstanding, invested in the various holdings named. But a small portion of this vast capitalization is represented in the interurban railway between Cincinnati and Hamilton—probably not as much as \$1,000,000. If the contention of the company is right, all it is required to pay to the State for the privilege of exercising franchises representing \$20,000,000 is the excise tax of 1.2 per cent upon its gross earnings from the interurban railway, amounting to \$2,437.90.

"Did the Ohio Traction Company not own the interurban railway it would be required to pay a fee of 0.1 of 1 per cent for 1910 and 0.15 of 1 per cent for each year thereafter upon its subscribed or issued and outstanding capital stock. The fee it would have been required to pay for the present year would have amounted to \$16,000.

"If that is the proper construction of the law as it stands at present there is nothing to prevent either domestic or foreign corporations from escaping substantially all State taxes by adopting the simple expedient of investing a small portion of capital in a public utility and paying an excise tax upon the gross receipts derived from that source."

Transit Affairs in New York

The Board of Estimate at its meetings on Dec. 22, 1910, referred the Public Service Commission's letter favoring the adoption of the Interborough Rapid Transit Company's subway plan to the transit committee of the board. It was provided that the committee should not have the power of delaying action on the recommendations made by the commission and that it should report to the board at the regular meeting on Jan. 5, 1911. The transit committee is made up of Mayor Gaynor, Comptroller Prendergast and President Mitchel of the Board of Aldermen. In the discussion before the Board of Estimate which followed the reading of the commission's letter some of the members held that the commission was seeking to place entirely upon the Board of Estimate the responsibility of accepting or rejecting the offer of the Interborough Rapid Transit Company. Messrs. Prendergast and Mitchel were willing to have the whole matter submitted to their committee, but the rest of the members of the board objected. Mayor Gaynor did not feel well enough to preside at the meeting. Mr. Mitchel presided, and when the commission's communication was brought up the Mayor suggested that the letter from the Public Service Commission should be held over until the first meeting of the board in January, when the subject could be considered by the board sitting as a committee of the whole. Borough President McAneny moved that the Mayor's recommendation be adopted. Finally the motion to send the matter to the committee on transit of the board was adopted.

The Public Service Commission considered on Dec. 23, 1910, the proposed forms of contracts for third-tracking the elevated lines of the Interborough Rapid Transit Company and the extensions of the elevated lines in the Bronx. The commission and the company have agreed on contracts giving the company extensions on an 85-year franchise, becoming indeterminate after 10 years, and its third tracks on a perpetual franchise, for which the company, after making the improvements on its own credit, is to pay the city 2 per cent on the gross receipts of the elevated extensions and a like amount on the estimated increased receipts at the express stations of the elevated lines which are to be third-tracked.

Most of those at the public hearing on Dec. 23, 1910, represented property holders, taxpayers and similar organizations in the Bronx, which is most largely concerned with the proposals. Most of the delegations from the Bronx favored the extensions and the third-tracking. Many of the protests which had been expected were forestalled by the announcement that the company had arranged to use the Putnam Division bridge of the New York Central & Hudson River Railroad to carry the Ninth avenue extension across the Harlem River, instead of the Macomb's Dam Bridge at 155th Street, as the original plan contemplated. The principal appearance in opposition was made by Prof. Edward W. Bemis, representing the newly organized Franchise Conference.

Decision in Des Moines Franchise Case

Judge Applegate, at Des Moines, Ia., has decided that the Turner franchise under which the Des Moines City Railway operates did not expire in 1898, as the city claimed, and that the City Council had the power to grant an unlimited franchise. Judge Applegate also held that he was without jurisdiction to determine whether the franchise expired in 1916. He advised that the city appeal the case to the Supreme Court. N. T. Guernsey, counsel for the company, in commenting on the decision said:

"Five years ago the Civic League asserted that the Turner ordinance expired Jan. 1, 1898, the date when the exclusive grant in that franchise terminated. They therefore contended that on Jan. 1, 1898, all rights of the company to maintain and operate its street railway system ended. This claim the company denied. Several members of the Civic League as relators brought the suit that has just been tried in order to determine this question. This suit was taken up at a later date and prosecuted by the city.

"In this suit we shaped our answer so as to compel the court to decide whether this ordinance expired Jan. 1, 1898. We wanted this decided definitely. In determining whether or not the Turner ordinance expired Jan. 1, 1898, it was necessary for Judge Applegate to determine three or four fundamental matters. He held, as is shown by his opinion:

"First—That the city had the power to grant a perpetual franchise.

"Second—That by its terms the Turner franchise was not limited to 30 years, but was unlimited as to time, and that this clearly appeared from the language of the ordinance.

"Third—That both the company and the city, both before and after January 1, 1908, had treated the Turner ordinance, not as a grant for 30 years, but as a grant unlimited as to time."

"The determination of these fundamental questions inevitably resulted in the holding that the company is not unlawfully maintaining or operating its street railway in the streets, but that it has authority to maintain and operate it under the Turner franchise.

"Judge Applegate did not decide that the Turner ordinance will expire Oct. 1, 1916, which is 50 years from the date when the corporation to which it was granted was organized. He expressly stated that this question was not involved in this case, and that he had not the jurisdiction to decide it. He did not say that if this question were presented to him his present inclination would be to hold the grant limited to the 50-year period above referred to, which would expire in 1916. This is not a decision of anything, but is what the lawyers call a pure dictum, which neither binds the court which makes the statement nor any other court.

"What this case actually decides is this: that the Turner ordinance is a valid existing franchise under which the Des Moines City Railway has the right to construct, maintain and operate its system of street railways in the streets of the City of Des Moines, and that this franchise contains no time limit. The case does not decide when this franchise will terminate or that it will ever terminate."

Railway Affairs in Detroit

The committee on franchises of the City Council of Detroit, Mich. had a report ready for presentation at the meeting of the evening of Dec. 20, 1910, in which it was recommended that this body negotiate with the Detroit United Railway for a settlement of the franchise question. This report was accompanied by a letter from J. C. Hutchins, president of the company, in which he agreed to stand the expense of another appraisal of the property. Alderman Gutman, however, asked that an opportunity be given him to prepare a minority report, recommending that the Council make another effort to persuade F. T. Barcroft to defend his appraisal. The committee acceded to the Alderman's request.

The question of reverting to the Barcroft appraisal was threshed out at a meeting of the committee on franchises on Dec. 22, 1910. Clyde L. Webster, who served as attorney for the committee of fifty, was present, and scored Mr. Bar-

croft's appraisal and his connection with the committee. He asserted that Mr. Barcroft had delayed matters until the committee finally disbanded in disgust. Mr. Webster said that a settlement would never be reached if it was left to Mr. Barcroft to defend his figures. Mr. Barcroft was present and stated that he could defend his appraisal, but is said to have evaded naming the precise conditions under which he was willing to make the defense. The committee will doubtless recommend the Common Council to authorize a new appraisal.

J. C. Hutchins, president of the Detroit United Railway, is said to have agreed in his letter to the Council to pay the expenses of another appraisal and to leave it to the engineer or board of engineers appointed by that body to decide whether the cost of the appraisal shall be charged up to capital account or disposed of in some other way.

A suit has been brought to compel the Detroit United Railway to pay an additional rental of \$200 a day for the use of Fort Street, West.

Constitutionality of Wisconsin Utilities Act Questioned.

—In the Supreme Court case of the Kenosha (Wis.) Electric Railway, now pending, the constitutionality of the Public Utility Law has been attacked. The attorneys for the company charge that the right of the commission to decide whether a new public utility can be started in any city where there is a public utility is unconstitutional because it involves a legislative function. The State argues that the function is administrative.

Winnipeg Strike.—The Winnipeg (Man.) Electric Railway gave its employees until Dec. 20 to return to the service of the company, but the men concluded to continue the strike despite the fact that practically a full service is being operated by the company with men secured from Toronto, Montreal and other places. Wilford Phillips, general manager of the company, has declared that, as far as the company is concerned, the strike is at an end. A car was burned at Weston, a suburb of Winnipeg, on Dec. 23, but no arrests were made as the crowd dispersed before the police arrived on the scene.

Metropolitan Association of Electric Tramways Managers Elects Officers.—At a meeting of the members of the Metropolitan Association of Electric Tramways Managers, held at the Municipal and County Club, London, England, on Dec. 9, 1910, the following officers were elected: Chairman, A. H. Stanley, managing director, London United Tramways; vice-chairman, H. E. Blain, tramways manager, West Ham Corporation Tramways; honorable secretary, T. G. Goodyer, tramways manager, Croydon Corporation Tramways. Mr. Stanley succeeds the late Sir Clifton Robinson as chairman of the association.

Women Strike Victims Sue Company.—Mrs. Catherine Kelly and Mrs. Jennie Hart have brought suit against the Columbus Railway & Light Company, Columbus, Ohio, for damages to the extent of \$5,000 and \$2,500, respectively, for injuries received from shots fired by Gerald O'Leary, alias George W. Brady, who was acquitted on the charge of having shot Helen Kelly, daughter of one of the women. All three women were injured at the same time, but the wound which Helen Kelly received was the most serious, and the attorney for the women states that he will shortly bring suit for \$10,000 damages because of her injuries. The attorney says that the fact that Brady was acquitted on the criminal charge will not affect the suits, as a preponderance of evidence only is needed in the suit for damages, while in the criminal case guilt had to be established beyond a reasonable doubt.

Powers of District Commissioners Defined.—Judge Pugh, of the Police Court of the District of Columbia, in dismissing a complaint on Dec. 20, 1910, against a motorman of the Capital Traction Company who operated a car equipped with an arc headlight held that the power of the Commissioners of the District of Columbia, by whom the complaint was lodged, ceased so far as street railways were concerned when the law of May, 1908, giving the Interstate Commerce Commission jurisdiction over the railways in the District, went into effect. In rendering his decision Judge Pugh said: "Extraordinary powers were conferred on the District Commissioners to draw up and enforce

police regulations by the joint Congressional resolution of 1892. This power continued until May, 1908, when the legislation was passed conferring upon the Interstate Commerce Commission the right to regulate the street railway systems in the District. There is no doubt that Congress intended that this commission should have sole jurisdiction over the local railway systems. Since this legislation became effective the Board of District Commissioners has been deprived of its former power so far as the electric railways are concerned, in my opinion, and all regulations previously passed by it affecting such street railways are void. Two sources for the same character of regulations would terminate in conflict and misunderstanding. In the present case the commissioners, by assuming to prosecute, have taken the position of regulating a regulation."

Briefs Filed in Regard to Riverbank Subway in Boston.—Thomas L. Babson, corporation counsel of Boston, and Frederick C. Snow, attorney for the Boston (Mass.) Elevated Railway, have filed with the Railroad Commission of Massachusetts their briefs in the matter of the stations to be operated in the new Riverbank subway. The board gave a hearing recently on an appeal of the company from a decision of the Boston Transit Commission fixing the number of stations at three, and their locations at Massachusetts Avenue, Dartmouth Street and Charles Street. The company desires that there be no stations whatever. Mr. Snow points out that the cost of three stations, according to the estimates of the engineers for the Transit Commission, will be \$304,000, and of the engineers of the company, \$317,000, this amount being over and above the cost of the subway without stations; this estimate also is based upon plain stations, with little in the way of architectural effect or tiling. This means an extra annual expense to the company of interest on the additional cost of maintaining, lighting and heating the stations; loss due to the stopping of the trains, and the additional labor cost made necessary by the longer running time of trains. It is estimated that the cost of lighting and heating the stations will be \$6,296.85 per year; stopping trains will cost \$16,302.09 on account of motive power alone; the additional labor cost on account of longer running time will be \$17,386.81, and there will also be additional wear and tear of equipment which it is not practicable to compute.

Railroad Terminal Electrification Agitation in Chicago.—A letter from H. A. Stillwell, the president of the Association of Commerce of Chicago, to the Mayor and the Common Council of Chicago was made public at the meeting of the City Council on Dec. 19, 1910. As previously announced in the ELECTRIC RAILWAY JOURNAL, the Association of Commerce, an influential organization of business men, has been investigating the subject of terminal electrification at Chicago. The work is in charge of a special committee of the association, and Mr. Stillwell says in his letter that a point has been reached where it seems necessary to go into the practical or business side of the question, which involves, among other things, the element of cost. It appears that the committee of the association has finished its work in relation to the feasibility of electrification from an engineering point of view, and desires to co-operate with the city in relation to the economic problems involved. Mr. Stillwell asked the Mayor to name four persons to represent the city in making the remaining investigations, and with the concurrence of the City Council Mayor Busse named Alderman Milton J. Foreman, chairman of the local transportation committee; Dr. W. A. Evans, health officer; Paul P. Bird, chief smoke inspector, and T. E. Donnelly, a member of the Anti-Smoke Commission, as the city's representatives to assist in making the inquiry requested by the association. At the meeting of the City Council at which this request was received Alderman Britten introduced an ordinance which was referred to the local transportation committee, and which, if enacted into law, will require all the railroads operating cars or trains of cars within seven miles of the city hall in Chicago to propel them "by other power than that of steam, or in a manner that will not produce smoke or any noxious gases." The date fixed for the enforcement of this requirement in the proposed ordinance is Jan. 1, 1913. A penalty in the shape of a fine of \$200 a day for every movement of any car or train by steam power after the date mentioned is provided in the ordinance.

Financial and Corporate

New York Stock and Money Market

Dec. 27, 1910.

The stock market opened after the Christmas holiday in much the same condition that it closed the previous week. Trading was extremely dull, prices were unsettled and inclined to be lower and there was a general feeling of uncertainty, if not of positive anxiety. It is the general opinion that it is useless to expect any definite direction or movement in the stock market until after the trust cases have been decided and the railroad rate question is settled.

The money market remains easy, but rates have advanced the past few days. Rates to-day were: Call, 3¼@3½ per cent; 90 days, 4 per cent.

Other Markets

The Philadelphia market has largely reflected the condition of Wall Street. Trading has been dull and prices have sagged. While traction shares have been dealt in at every session of the Exchange the trading has been light and prices have shown a tendency to decline.

In the Boston market some activity is still exhibited in Boston Elevated and Massachusetts Electric, but prices have barely been held at former figures.

There has been desultory trading in the certificates of the Chicago Railways Company on the Chicago Exchange during the past week. Series 2 has been the most active issue, but the price has remained in the neighborhood of 25.

In the Baltimore market the bonds of the United Railways & Electric Company have been duller than usual, but there has been some movement in the stock. To-day 600 Railways certificates were sold at 16.

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

	Dec. 20.	Dec. 27.
American Railways Company.....	a42½	a42½
Aurora, Elgin & Chicago Railroad (common).....	a15	45
Aurora, Elgin & Chicago Railroad (preferred).....	83½	*83½
Boston Elevated Railway.....	a127½	128
Boston Suburban Electric Companies (common).....	a16	*16
Boston Suburban Electric Companies (preferred).....	a72	70
Boston & Worcester Electric Companies (common).....	a10	a10
Boston & Worcester Electric Companies (preferred).....	a39½	a39½
Brooklyn Rapid Transit.....	76¾	a74¾
Brooklyn Rapid Transit Company, 1st ref. conv. 4s.....	83	82¾
Capital Traction Company, Washington.....	a129	a129
Chicago City Railway.....	165	165
Chicago & Oak Park Elevated Railroad (common).....	7¾	*7¾
Chicago & Oak Park Elevated Railroad (preferred).....	7¾	7¾
Chicago Railways, pteptg., ctf. 1.....	a92½	a95
Chicago Railways, pteptg., ctf. 2.....	a25¾	a25¾
Chicago Railways, pteptg., ctf. 3.....	a11	a10
Chicago Railways, pteptg., ctf. 4.....	a6½	a6½
Cleveland Railway.....	*91½	*91½
Consolidated Traction of New Jersey.....	a72	a73
Consolidated Traction of N. J., 5 per cent bonds.....	a104	a104
Detroit United Railway.....	68	*68
General Electric Company.....	a156	a153¾
Georgia Railway & Electric Company (common).....	a18	a17
Georgia Railway & Electric Company (preferred).....	a87	88
Interborough-Metropolitan Company (common).....	20½	19½
Interborough-Metropolitan Company (preferred).....	55¾	53¾
Interborough-Metropolitan Company (4½s).....	80	79½
Kansas City Railway & Light Company (common).....	a23	a22¾
Kansas City Railway & Light Company (preferred).....	a73½	a71½
Manhattan Railway.....	138	139
Massachusetts Electric Company (common).....	a18½	a18½
Massachusetts Electric Companies (preferred).....	a85½	a86
Metropolitan West Side, Chicago (common).....	*20¼	21¼
Metropolitan West Side, Chicago (preferred).....	*68	a68
Metropolitan Street Railway, New York.....	*19½	*19½
Milwaukee Electric Railway & Light (preferred).....	*110	*110
North American Company.....	*62	64¾
Northwestern Elevated Railroad (common).....	a20	a22
Northwestern Elevated Railroad (preferred).....	a60	a60
Philadelphia Company, Pittsburg (common).....	47	a49¾
Philadelphia Company, Pittsburg (preferred).....	a42½	a43
Philadelphia Rapid Transit Company.....	a18¾	a18¾
Philadelphia Traction Company.....	a83¾	83¾
Public Service Corporation, 5 per cent col. notes.....	a95½	a95¾
Public Service Corporation, ctf. 5.....	a100	a100½
Seattle Electric Company (common).....	a108	a108
Seattle Electric Company (preferred).....	102	a102
South Side Elevated Railroad (Chicago).....	a69½	69½
Third Avenue Railroad, New York.....	10¾	10
Toledo Railways & Light Company.....	a8	a8
Twin City Rapid Transit, Minneapolis (common).....	108½	108½
Union Traction Company, Philadelphia.....	a42¾	a42¾
United Rys. & Electric Company, Baltimore.....	*14½	*14½
United Rys. Inv. Co. (common).....	a15	a15
United Rys. Inv. Co. (preferred).....	*52	*52
Washington Ry. & Electric Company (common).....	33½	a33¾
Washington Ry. & Electric Company (preferred).....	86¼	a86¼
West End Street Railway, Boston (common).....	a90½	a91
West End Street Railway, Boston (preferred).....	a102¾	a101
Westinghouse Elcc. & Mfg. Co.....	68	66
Westinghouse Elcc. & Mfg. Company (1st pref.).....	*124	*124

a Asked. * Last sale.

Annual Report of Aurora, Elgin & Chicago Railroad

The annual report of the Aurora, Elgin & Chicago Railroad for the year ended June 30, 1910, compares with the previous year as follows:

Year ended June 30—	1910.	1909.
Gross earnings.....	\$1,530,898	\$1,411,722
Operating expenses.....	902,778	796,270
Net earnings.....	\$634,120	\$615,452
Other income.....	71,540	55,492
Gross income.....	\$705,660	\$670,944
Deductions from income.....	373,824	341,327
Net income.....	\$331,836	\$329,617
Profit and loss—surplus at beginning of year.....	271,679	211,395
Other profit and loss credits.....	6,369	3,444
Profit and loss—gross surplus.....	\$609,884	\$544,456
Profit and loss charges:		
Dividends.....	\$279,000	\$225,750
Other.....	14,213	17,028
Total.....	\$293,213	\$272,778
Profit and loss—surplus at end of year.....	\$316,671	\$271,678
Operating expenses—percentage to gross earnings.....	58.74	56.40

The details of revenues and expenses for the two years were as follows:

Year ended June 30—	1910.	1909.
Gross earnings and other income:		
Railroad department:		
Gross earnings from operations.....	\$1,444,316	\$1,326,070
Sale of power.....	55,896	44,354
Light department:		
Gross earnings from operations.....	92,582	85,652
Rentals, land and buildings.....	3,138	2,391
Interest and discount.....	213	645
Earnings—sinking fund investment.....	10,135	8,102
Adjustment of materials and supplies—stores account.....	1,843	.....
Profit on Elgin, Aurora & Southern Traction Company bonds purchased for sinking fund.....	315	.....
Total gross earnings and other income.....	\$1,608,438	\$1,467,214
Operating expenses:		
Railroad department:		
Maintenance of ways and structures.....	\$55,312	\$57,011
Maintenance of equipment and power house.....	103,609	77,301
Transportation—operation of power plant.....	133,738	113,522
Transportation—car service.....	312,430	295,974
General expenses.....	248,050	225,250
Total railroad department.....	\$853,139	\$739,058
Light department:		
Cost of current—operating.....	\$19,275	\$33,251
Cost of current—maintenance.....	2,848	752
Operation of distribution system.....	11,633	10,817
Maintenance of distribution system.....	7,270	4,791
General expenses.....	8,613	7,601
Total light department.....	\$49,638	\$57,212
Total operating expenses.....	\$902,778	\$796,270

L. J. Wolf, the president, says, in part, in his report to stockholders:

"The additions to trackage aggregate 34,372.8 ft. of track. The tracks and roadbed of all lines have been properly maintained and are in good condition.

"Several of the wooden bridges and culverts of the Fox River division have been replaced by permanent concrete construction.

"The dispatchers' telephone line has been extended from Ingaltion to Elgin, thus completing the duplicate telephone line over all parts of the system.

"Electric automatic block signals have been installed on the Elgin branch of the third-rail division at two locations. These signals are of the alternating-current track-circuit type of the very latest development. It is intended to install more of these block signals from time to time. There have also been installed on the Fox River division six sets of trolley contact electric block signals on congested sections of track.

"Our increasing power requirements have necessitated an enlargement of plant. We are installing a 3000-kw, low-pressure turbine unit with surface condenser and necessary auxiliaries.

"All wooden pilots on third-rail cars have been replaced by steel pilots, with air trip for automatically stopping the train in case the motorman should fail to observe a danger signal on the elevated structure in Chicago.

"In July, 1909, the city of Aurora granted your company a new 20-year franchise for all lines, excepting the third-rail division, which is operating under a grant which expires in 1949. In the cities of Geneva and St. Charles, where your franchises expire in a few years, 50-year grants,

applicable to your routes and tracks, were made to the Chicago, Wheaton & Western Railway Company. The acquisition of the Chicago, Wheaton & Western, as proposed, will give your company the benefit of these grants. The acquisition of the Chicago, Wheaton & Western will also bring to this company a 50-year franchise in West Chicago.

"In my last report reference was made to fire protection that had been installed at our various shops. As result of this and other improvements we have reduced our insurance cost one-half.

"In June a 3-year contract was entered into with our employees at an average increase of about 6 per cent. The relations between the company and its employees are cordial.

"The construction of the Chicago, Wheaton & Western Railway Company has been completed, thus connecting with your railroad the cities of West Chicago and Geneva.

"The electrification of the former steam road, extending from DeKalb to Aurora, has been completed and the road is now in regular operation, with the effect of developing business for your company through the sale of interline tickets.

"Our operating statements were also seriously affected by the coal strike, which began in March and lasted for a number of months. We prepared in advance by laying in a supply of coal sufficient to carry us for 60 days. We were compelled to store a considerable proportion of this in the open, which involved double handling and added cost. The strike continued much longer than was anticipated and upon the exhaustion of our stock pile we were compelled to pay an excessive premium for several months.

"For the year ending June, 1911, we should show a substantial improvement over the year covered by this report in respect to cost of coal and maintenance of equipment."

Montreal Tramways & Power Company, Ltd.

The Montreal Tramways & Power Company, Ltd., has been incorporated in London with a capital stock equivalent to \$20,000,000, divided into 200,000 shares, to hold a majority of the \$10,000,000 capital stock of the Montreal Street Railway and a majority of the \$6,000,000 stock of the Canadian Light & Power Company. On Dec. 19, 1910, E. A. Robert, president of the Montreal Street Railway, issued a statement in regard to the Montreal Tramways & Power Company, Ltd., in which he said:

"Several months ago the Imperial Trust Company was organized with a large capital paid up in cash to finance the acquisition of a majority of the shares of the Montreal Street Railway. It secured the co-operation of certain well-known English capitalists and it was the intention at the outset to obtain control also of a majority of the shares of the Canadian Light & Power Company.

"One of the objects of the Montreal Tramways & Power Company, Ltd., is to purchase the present holdings of the Imperial Trust Company and eventually acquire a majority of the shares of the Montreal Street Railway and the Canadian Light & Power Company and finance both these companies, chiefly with English capital.

"These two companies, the Montreal Street Railway and the Canadian Light & Power Company, will retain their separate and distinct identities, operate their own plants and work under their respective franchises, and be subject, as heretofore, to all legislative enactments and municipal regulation.

"It is the object of the capitalists who have organized the Montreal Tramways & Power Company, Ltd., to procure through the medium of a holding company these two companies so that they shall in future operate in entire harmony. The Montreal Street Railway will always have an independent supply of power, and the Canadian Light & Power Company will always have a customer for its power."

The directors of the Imperial Trust Company, to which Mr. Robert referred, are: E. A. Robert, president; J. W. McConnell, vice-president; H. R. Mallison, secretary; F. Howard Wilson, James G. Rose and H. A. Lovett.

Buffalo, Lockport & Rochester Railway, Rochester, N. Y.
—Charles D. Beebe, vice-president of the Rochester, Syracuse & Eastern Railroad, president of the Syracuse, Lake

Shore & Northern Railroad and president of the Auburn & Syracuse Electric Railroad, is credited with the following statement, made in connection with the report circulated in Syracuse and Rochester that he and his associates had secured control of the Buffalo, Lockport & Rochester Railway: "My associates and I are coming into control of the Buffalo, Lockport & Rochester Railway under the terms of a reorganization, participated in by all security holders of said road, all of its creditors and also its stockholders. The reorganization plan, if carried through without foreclosure, will result in the bonded debt outstanding being reduced to the sum of \$2,750,000, and the cancellation of all past-due coupons, including probably the one of Feb. 1, 1911; the cancellation of all equipment notes outstanding and the turning of the equipment over to the railway company free and clear; and also the cancellation of all floating debt. The road will also have the sum of \$200,000 cash available in its treasury, subject to expenditure only for capital account. There will be no change in the organization, at least until after the new interests are in control of the property. The amount of bonds outstanding is \$3,400,000. All bondholders surrender 25 per cent of par value. The \$200,000 is provided by the sale of \$200,000 surrendered bonds at par."

Elmira, Corning & Waverly Railroad, Waverly, N. Y.—The Public Service Commission of the Second District of New York has authorized the Elmira, Corning & Waverly Railway to issue \$689,000 of the total issue of \$800,000 of first mortgage 5 per cent bonds, dated 1907, and due July 1, 1957. The Standard Trust Company, New York, N. Y., is trustee of the issue, and the bonds are to be delivered to the Southern Tier Development Company, at 97½, on account of the construction and equipment of the electric railway from Elmira to Corning, a distance of about 12 miles.

Interstate Railways, Philadelphia, Pa.—The directors of the Interstate Railways have declared operative the new preferred-stock financing plan. The plan was referred to in detail in the *ELECTRIC RAILWAY JOURNAL* of Nov. 26, 1910, page 1079.

Louisville (Ky.) Traction Company.—Frederick S. Wicks, Syracuse, N. Y., has been elected a director of the Louisville Traction Company, to succeed A. H. Davis, deceased.

Louisville (Ky.) Railway.—The Louisville Railway has announced that beginning in January, 1911, it will issue monthly reports of its earnings.

Northern Ohio Traction & Light Company, Akron, Ohio.—Claude Ashbrook, Cincinnati, Ohio, recently offered for subscription at 87½ and interest, yielding 6 per cent income, \$200,000 of general mortgage 5 per cent gold bonds of the Canton-Akron Consolidated Railway, dated 1906 and due January, 1933, and guaranteed as to principal and interest by the Northern Ohio Traction & Light Company, which in 1906 purchased the entire capital stock of the Canton-Akron Consolidated Railway.

Dividends Declared

Athens Railway & Electric Company, Athens, Ga., 2½ per cent, preferred.

Carolina Power & Light Company, Raleigh, N. C., quarterly, 1½ per cent, preferred.

Chicago City & Connecting Railways, Chicago, Ill., preferred participation certificates, \$2.25; common participation certificates, \$1.

Cincinnati, Dayton & Toledo Traction Company, Hamilton, Ohio, 2½ per cent, preferred; ⅓ of 1 per cent, common.

Cincinnati & Hamilton Traction Company, Cincinnati, Ohio, quarterly, 1¼ per cent, preferred; quarterly, ¾ of 1 per cent, common.

Citizens' Electric Street Railroad, Newburyport, Mass., 2½ per cent.

City Railway, Dayton, Ohio, quarterly, 1½ per cent, preferred; quarterly, 1¼ per cent, common.

Columbus, Newark & Zanesville Electric Railway, Newark, Ohio, quarterly, 1½ per cent, preferred.

Danbury & Bethel Street Railway, Danbury, Conn., 2 per cent.

El Paso (Tex.) Electric Company, 3 per cent, preferred.

Holyoke (Mass.) Street Railway, 4 per cent.

Honolulu Rapid Transit & Land Company, Honolulu, H. I., 3 per cent, preferred; quarterly, 1 per cent, common.

Traffic and Transportation

The Daily Life of a Motorman

A two-column article appeared in the Richmond (Va.) *Evening Journal* of Dec. 20, 1910, on the "Life of a Motorman." It was written by a motorman of the Virginia Passenger & Power Company, and describes in detail his duties and the many things with which he has to contend.

It follows the inexperienced applicant for the position of motorman into the office of the average street railway. He receives an application blank on which he is required to give all essential facts about his previous record and himself. In addition he must furnish first-class recommendations from former employers and at least one or two responsible citizens to whom he is well known. Next, he is sent to the company surgeon, where he undergoes a thorough examination as to physical qualifications. If passed by the surgeon he receives a certificate, which he turns in at the office. He is then ready for instruction in the art of handling railway cars. The applicant is placed under the instruction of an experienced motorman, where he receives his training, which takes from 10 to 15 days, before he is given a regular run. Some extracts from the article recounting his experience after receiving his commission follow:

"It tries his nerve to run on a slick track. This is true of large cities, because of the fact that cars are run on close schedule and because of heavy street traffic.

"It takes cool-headedness and skilful handling of a car to negotiate slick track on a down-grade with safety.

"It tries his nerve and self-control when, just as he feels the wheels lock up and the car begin to slip, a lady drives right across the track in front of his car, and probably two or three little children are in the carriage with her.

"It gets right on his nerve when, while bowling along at a lively clip, say from 10 to 60 m.p.h., according to speed limit on the various lines, a little tot suddenly steps right out in the middle of the track.

"It tries his nerve when a driver who knows the car is approaching deliberately turns across in front of the car, forcing the motorman to reverse in order to avoid an accident.

"It tries his patience and self-control when some irate and overbearing gentleman comes out on the front and vents his grouch on the cussedness of things in general and the methods of the company in particular, oftentimes demanding that the motorman violate the rules of the company for his special benefit."

The article shows clearly some of the many practical difficulties with which the train crews and the company have to contend and should make the public more considerate in its treatment of both.

Holiday Traffic Record in New York Subway

The Public Service Commission of the First District of New York has made public a record of passengers carried on the subway and elevated lines of the Interborough Rapid Transit Company, New York, N. Y., which indicates that, with the exception of two days during the Hudson-Fulton Celebration in September, 1909, new high records were realized in the ten days ended Dec. 19, 1910. The statement made by the commission follows:

	Elevated.		Subway.	
	1910.	1909.	1910.	1909.
Saturday, Dec. 10.....	976,007	923,785	986,086	934,124
Sunday, Dec. 11.....	501,635	569,365	438,504	495,634
Monday, Dec. 12.....	1,015,687	848,126	1,009,771	848,812
Tuesday, Dec. 13.....	916,931	876,488	903,237	814,659
Wednesday, Dec. 14.....	909,825	869,413	906,261	863,939
Thursday, Dec. 15.....	913,605	865,809	909,232	870,240
Friday, Dec. 16.....	881,330	852,706	902,113	866,226
Saturday, Dec. 17.....	988,475	952,246	1,005,263	949,401
Sunday, Dec. 18.....	589,349	572,403	509,859	493,867
Monday, Dec. 19.....	1,066,677	987,380	1,027,785	982,199
Totals	8,759,521	8,317,721	8,598,111	8,149,101

Near-Side Stops in Reading.—The Mayor of Reading, Pa., has signed an ordinance passed by the City Council which requires that after Jan. 1, 1911, all street railways operating in Reading shall stop their cars on the near side of the street.

Holiday Memento.—C. C. Chapman, traffic manager of the Toledo & Western Railroad, Toledo, Ohio, presented the

compliments of the holiday season to a large number of patrons of the company by sending them Christmas cards and an aluminum ruler and letter opener, on which the name of the road had been engraved.

Car License and Pole Tax in Chester, Pa.—The Borough Council of Clifton Heights, which includes Chester, Pa., has passed a resolution which requires street railways operating within the limits of the borough to pay a pole tax in 1911 and increases the car license from \$5 a year to \$15 a year. The Philadelphia & Garrettsford Street Railway and the Southern Pennsylvania Traction Company are affected.

Reasons for Not Entering Cars at Front End.—The United Railways & Electric Company, Baltimore, Md., has reprinted in pamphlet form for general distribution the interview given recently by William A. House, president of the company, to the Baltimore *Sun*, in which he explained the company's reason for opposing entrance to cars by the front door. This interview was re-published in full in the ELECTRIC RAILWAY JOURNAL of Dec. 17, 1910, page 1187.

Indiana Union Traction Company Appoints Road Instructor.—With a view of minimizing accidents as far as possible the Indiana Union Traction Company, Indianapolis, Ind., has appointed Clyde Howard, city clerk at Tipton, and at present employed as a train dispatcher, as a road instructor. Mr. Howard will instruct trainmen how to take switches, acquaint them with the location of meeting places and inform station agents and other road employees in regard to conducting their various departments.

Complaint Against Syracuse Rapid Transit Railway Dismissed.—The Public Service Commission of the Second District of New York has closed upon its records the complaint of trustees of Solvay, Onondaga County, against the Syracuse (N. Y.) Rapid Transit Railway, in relation to the extension of its double tracks from Bridge Street, in Solvay, to the westerly terminus of the Syracuse Rapid Transit Railway. At a hearing held in Syracuse, on Dec. 9, 1910, the company agreed to construct the extension of its line provided for in its franchise, and as demanded by complainants, within one and a half years. The right to reopen the complaint if this is not accomplished is reserved in the order.

South Shore Route Issues Vest Pocket Folder.—The Chicago, Lake Shore & South Bend Railway, Michigan City, Ind., is distributing a new folder of vest-pocket size, made up of a single sheet, 10¼ in. by 14¾ in., printed in red and blue, and with attractive cover designs which bear the new slogan of the road, "The Electric Way." A map of the district served, including the entrance into Chicago over the suburban lines of the Illinois Central Railroad, occupies three pages. Similarly six pages are taken to display two halftone views of cars, one showing two trains passing on the new double-track portion of the road, and featuring the South Bend and Chicago "special" trains, which carry passengers 92 miles in 2 hours and 55 minute. Complete time tables, weekday and Sunday service, including the connecting schedules of the Illinois Central Railroad, are shown in large type. The arrangement of the timetable in the vest-pocket folder is such that the same type "set-up" may be used for printing the standard-size folders of the road.

Anti-Accident Notice in Denver.—The Denver (Col.) Tramway has posted in its cars signs which read "There's a Reason for Everything Except a Woman Getting Off the Car Backward; That's Foolishness." Commenting on the use of the signs in Denver, the *Tramway Bulletin*, the official organ of the Denver City Tramway Mutual Aid Association, said in its December issue: "Perhaps no one thing in recent years has caused such widespread comment as the cards bearing the above inscription ever since they have been in the Denver street cars. They have been the subject of numerous letters to the newspapers, criticisms, commendations, and they have been the talk from day to day of passengers on cars, both coming to the city and going home, and they have formed an interesting topic of conversation and discussion among school teachers." The use of similar signs by the Kingston, Portsmouth & Catawqui Electric Railway, Kingston, Ont., was noted in the ELECTRIC RAILWAY JOURNAL of Sept. 3, 1910, page 381.

Benefit Association in Allentown.—The officers of the Lehigh Valley Transit Company, Allentown, Pa., have or-

ganized an employees' benefit association, and commencing on Jan. 1, 1911, employees of the company will be urged to join the association, but membership will not be compulsory. There will be small monthly dues, depending on the amount required to meet the expenses, and the members of the association will receive \$1 per day sick benefits and \$150 death benefits. Instead of distributing turkeys to the employees at Christmas this year the company decided to pay in cash to the benefit association the dues of every member who desires to join before Jan. 1, 1911. In addition the company has decided voluntarily to inaugurate a pension system for the benefit of practically all of its employees independent of the benefit association. All employees who have been in the service of the company or its subsidiary affiliated companies continuously for 25 years will thereafter be entitled to a pension of \$5 per week for life.

Complaint Against Utica & Mohawk Valley Railway Dismissed.—The Public Service Commission of the Second District of New York has dismissed the complaint made by patrons of the Utica & Mohawk Valley Railway living in the vicinity of stops 1, 2 and 3 from Utica, on the Utica and Frankfort branch. The complaint alleged that the rate to stops 1, 2 and 3 was unfair and discriminating, and asked that it be reduced from 10 cents to 5 cents. After hearing and investigation, the commission decided that the complainants have failed to furnish satisfactory proof that the present rate is unfair or discriminatory, under the present system in vogue in New York State upon interurban railways of establishing rates upon the zone basis instead of the mileage basis. The complainants reside in Herkimer County, outside of Utica, and base their case upon the fact that from the center of the city they are not allowed to ride as great a distance for 5 cents as passengers proceeding from the same point to Whitesboro and New Hartford, and they therefore urged that they should be placed upon the same mileage basis as the other two sections. The commission is of the opinion, however, that it would not be justified in establishing a rate upon the mileage basis in view of the present long-established practice of charging under the zone system on lines of this character. The zone in this case is at the city line, and it is reasonable and fair that an additional charge of 5 cents be made from that point, regardless of the fact that upon other lines passengers are carried by the company a somewhat longer distance for the same amount.

Suggestions to Public Service Railway.—The special committee appointed by Mayor Wittpenn, of Jersey City, to consider transit matters in that city has reported to the Mayor its suggestion for changes in the operating methods of the Public Service Railway which the committee believes would facilitate the movement of traffic in Jersey City. The changes which the committee suggest are largely of a nature that are of interest only locally. They relate to transfers, changes in route and the construction of new short lines to facilitate the movement of cars. In some instances the changes recommended are in direct accord with ideas which the company has been unable to carry out on account of opposition encountered from the local authorities. In regard to carrying freight the committee says: "One other suggestion for relieving street congestion is that the electric railway lines should act under the provisions of the statute of 1909, which allows street railways to carry freight. Freight sidings could be run into the manufacturing plants and other places of business and shipments could be made from them by electric cars at hours when the passenger traffic is light. This would relieve the streets of a great mass of traffic and would greatly increase the advantages of Jersey City as a site for factories." The suggestions of the commission had not been presented to the company up to Dec. 22, 1910, and in consequence no formal reply to them has been made by the company. In discussing the subject informally with a representative of the Jersey City *Journal*, however, a representative of the company pointed out wherein the company had tried to anticipate the recommendations of the committee. The company studied the subject of handling freight very carefully, and concluded that the conditions of short haul which govern the carting of freight in Jersey City prevent freight being handled successfully on the company's lines in Jersey City and vicinity.

Personal Mention

Mr. J. S. Oliver has been appointed general superintendent of the Goldsboro (N. C.) Traction Company to succeed Mr. E. B. Austin.

Mr. W. C. Sparks, who has been connected with the Indiana Union Traction Company, Anderson, Ind., for eight years, has resigned as superintendent of roadway of the company to become general manager of the Rockford & Interurban Railway, Rockford, Ill.

Mr. A. A. Kartholm has been appointed general passenger agent of the Fort Wayne & Wabash Valley Traction Co., Fort Wayne, Ind., effective on Jan. 1, 1911. For the last four years, Mr. Kartholm has been chief clerk to Mr. F. Hardy, superintendent of transportation of the Fort Wayne & Wabash Valley Traction Co.

Mr. Edward W. Leaning has been appointed assistant chief of the division of statistics and accounts of the Public Service Commission of the Second District of New York. Mr. Leaning has been an employee of the Delaware & Hudson Company for 30 years, occupying various clerical positions from minor clerk to an executive position as chief clerk in the office of the auditor of disbursements of that company.

Mr. J. M. Burns has been appointed assistant superintendent of the Morris County Traction Company, Morristown, N. J. Mr. Burns was graduated from Cornell University in June, 1910, with the degree of electrical engineer. He entered the service of the Morris County Traction Company immediately after graduation, and previous to his appointment as assistant superintendent of the company he served as electrician and draftsman and had charge of all the track bonding and testing.

Mr. L. O. Lieber, whose resignation as electrical engineer of the Los Angeles & Redondo Railway, Los Angeles, Cal., was announced in the *ELECTRIC RAILWAY JOURNAL* of Dec. 17, 1910, will hereafter give his entire attention to the duties of his position as electrical engineer of the Los Angeles (Cal.) Railway, which has been succeeded by the Los Angeles Railway Corporation. Mr. Lieber served as electrical engineer of the Los Angeles Railway for several years before becoming connected with the Los Angeles & Redondo Railway.

Mr. W. H. Smaw, whose appointment as purchasing agent of the Georgia Railway & Electric Company, Atlanta, Ga., was noted in the *ELECTRIC RAILWAY JOURNAL* of Dec. 17, 1910, was born in Atlanta on Aug. 11, 1873. Mr. Smaw was educated in the public schools of Atlanta and entered business in the mercantile line, serving one of the largest wholesale houses in the South successively as shipping clerk, assistant cashier and traffic manager. Mr. Smaw resigned this position in January, 1903, to become connected with the purchasing department of the Georgia Railway & Electric Company, and during the last two years he has acted intermittently as purchasing agent, owing to the ill health of Mr. G. B. Graves, the former purchasing agent.

Mr. C. C. McChord, whose nomination by President Taft as a member of the Interstate Commerce Commission has been confirmed by the Senate, was born on Dec. 3, 1859, at Springfield, Ky., and was educated at Center College, Danville, Ky. He practised law at Springfield, Ky., and was prosecuting attorney there from 1886 until 1892. He was appointed a member of the State Railroad Commission of Kentucky in May, 1892, and was elected chairman of the commission. In 1895 Mr. McChord resigned from the commission and was elected to the State Senate of Kentucky, where he served four years. While in the Legislature he secured the passage of an act which empowered the commission to make reasonable interstate freight and passenger rates. He again became chairman of the State Railroad Commission of Kentucky in 1899, and was re-elected chairman of the commission in 1903. Since he retired from the commission in 1907 Mr. McChord has been engaged in the practice of law.

Mr. Alan P. Norris, whose appointment as freight and passenger agent of the Washington, Baltimore & Annapolis Electric Railway, Washington, D. C., to succeed Mr. C. F. Gladfelter, resigned, was announced in the *ELECTRIC RAILWAY JOURNAL* of Dec. 24, 1910, became connected with

the company during the construction period, and has been connected with the company in the capacity of chief clerk to the general superintendent since shortly after the road was placed in operation. Mr. Norris will have charge of the freight and passenger traffic and will make his headquarters at the company's terminal station in Baltimore. Prior to his connection with the Washington, Baltimore & Annapolis Electric Railway, Mr. Norris was connected with the Merchants' & Miners' Transportation Company and with the Atlantic Coast Line Railway.

Prof. B. H. Meyer, whose nomination as a member of the Interstate Commerce Commission by President Taft has been confirmed by the Senate, was born at Mequon, Wis., on May 28, 1866. He was graduated from the Oshkosh Normal School and from the University of Wisconsin, and subsequently was graduated from the University of Berlin, where he took the courses in economics, history and sociology. From 1884 until 1886 he taught in district schools, and from 1887 until 1889 he was a principal in the schools at Fredonia, Wis. From 1889 until 1892 Prof. Meyer was principal of the high school at Port Washington, Wis. He then became connected with the University of Wisconsin, where he has served as extension lecturer, instructor in sociology, assistant professor of sociology and professor of the institutes of commerce. In 1904 and 1905 he was expert special agent for the Bureau of Census and the Interstate Commerce Commission in charge of the valuation of the railways in the United States. Prof. Meyer was also chairman of the Wisconsin Railroad Commission. He was a contributor to the *Railway Age*, and has written important monographs and articles on railway legislation and administration and other economic subjects. He is a member of many learned societies, among them the American Economical Association, American Academy of Political and Social Science and the University of Wisconsin Historical Society.

Mr. C. W. Ricker, who has been employed for the last 10 years as electrical engineer of the Cleveland Construction Company, Cleveland, Ohio, and the Warren Bicknell Company, Cleveland, Ohio, operating manager of electric railway and lighting properties, has resigned from these companies, effective on January 1, 1911, and has been appointed assistant general manager and chief engineer of the Havana (Cuba) Electric Railway, which operates all of the electric railways in Havana, and of which company Mr. Warren Bicknell, of the Warren Bicknell Company, is president. Mr. Ricker was graduated in 1891 from the Massachusetts Institute of Technology as an electrical engineer. After graduation he entered the employ of the American Telephone & Telegraph Company, in New York. In 1892 he took the students' course with the General Electric Company, at its Lynn Works, and the following year opened an office as a consulting engineer in Buffalo, where he remained six years. In 1899 Mr. Ricker accepted the position of electrical engineer of the United Electric Securities Company, Boston, Mass., and the following year became assistant to Mr. Theodore Stebbins, engineer of the local companies' department of the General Electric Company. While engaged on this work he was appointed engineer in charge of the Lima Electric Railway & Light Company, Lima, Ohio, and upon completion of the work with which he was intrusted there he entered the employ of the Cleveland Construction Company, Akron, Ohio. Mr. Ricker was also connected with the electric traction department of the New York Central & Hudson River Railroad, and held the position of electrical superintendent of power stations of the Interborough Rapid Transit Company.

OBITUARY

Charles E. Pollard, designing and selling engineer of the E. W. Bliss Company, Brooklyn, N. Y., is dead.

E. V. W. Rossiter, a vice-president of the New York Central & Hudson River Railroad, who died at his home in Flushing, N. Y., on Dec. 11, 1910, after an illness of several months, was a vice-president of the Oneida (N. Y.) Railway, Syracuse (N. Y.) Rapid Transit Company and the Utica & Mohawk Valley Railway, Utica, N. Y. Mr. Rossiter was born on July 13, 1844, at St. Louis, Mo., and had been connected with the lines forming part of the system of the New York Central & Hudson River Railroad for more than 50 years.

Construction News

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

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

RECENT INCORPORATIONS

***Hartford-Meriden Railway, Meriden, Conn.**—Application for a charter will be made by this company in Connecticut to build an electric railway to connect Hartford, Meriden, Berlin, Newington and New Britain. Incorporators: C. D. Lawrence, John J. Malone, William Foley and Thomas Dryden.

***North Carolina-Virginia Railway, Ridgeway, N. C.**—Chartered in North Carolina to build a 6-mile railway from Ridgeway to the North Carolina line. Capital stock, maximum, \$6,000, and the minimum, \$2,000. Officers: E. C. Wing, New York, president; George Demarest, Brooklyn, secretary and treasurer. Directors: P. Minturn Smith, F. W. Davis, Bronson H. Smith, Brooklyn; S. Strayer, Passaic, N. J., and Malcolm K. Harris, Danville, Va.

***Hamilton, Caledonia & Port Dover Electric Railway, Hamilton, Ont.**—Incorporated in Ontario to build an electric railway to connect Hamilton, Caledonia and Port Dover. It is expected to begin work in the spring. George L. Staunton is interested.

Cleburne (Tex.) Street Railway.—Application for a charter has been made in Texas by this company to build an electric railway in Cleburne. Capital stock, \$65,000. Incorporators: Daniel Hewitt, J. M. Moore, J. C. Blakeney, L. W. Chase, A. M. Morgan, W. M. Odell, C. M. Bentley and Lawrence Hewitt. [E. R. J., Aug. 13, '10.]

FRANCHISES

Phoenix, Ariz.—The Phoenix Street Railway has received a franchise from the Board of Supervisors to cross the country roads on the line from Phoenix to Glendale.

***San Francisco, Cal.**—Willis Polk, representing the Great Highway Development Company, has asked the Council for a franchise to build a 3-mile electric railway on the highway from Cliff House to Sloat Boulevard, in San Francisco.

Bridgeport, Conn.—The Bridgeport & Danbury Electric Railway will petition the General Assembly for an extension of time in which to construct and complete its proposed electric railway in Bridgeport. It will connect Bridgeport, Trumbull, Monroe, Newton, Bethel and Danbury. Morton F. Plant, New London, is interested. [E. R. J., July 9, '10.]

Fort Myers, Fla.—The Seminole Power & Ice Company has received a franchise from the County Commissioners to operate an electric railway in Fort Myers and vicinity. A. A. Gardner, Fort Myers, is interested. [E. R. J., Nov. 24, '06.]

Highland, Ill.—The St. Louis & Eastern Traction Company, East St. Louis, has received a franchise from the City Council to build an electric railway through Highland. The railway will connect Granite City, Troy, Highland, Pierson, Pocahontas and Greenville. A. W. Crawford, Hillsboro, is interested. [E. R. J., Nov. 19, '10.]

***Bay City, Mich.**—C. D. Rose has asked the City Council for a franchise to build an electric railway over certain streets in Bay City.

Minneapolis, Minn.—The Twin City Rapid Transit Company will ask the City Council for a franchise to build another cross town line via Franklin Avenue, from Eighth Avenue, in Minneapolis, east to the city limits. W. J. Hield, Minneapolis, general manager.

Kansas City, Mo.—The Kansas City Railway & Light Company has received a franchise from the City Councils to build a new crosstown line in Kansas City.

Lakewood, N. J.—The Trenton, Lakewood & Atlantic Railway, Trenton, has asked the Township Committee for a franchise to build its railway on Ocean Avenue in Point Pleasant. The company plans to extend its line from Lakewood to Point Pleasant.

Stamford, N. Y.—The Niagara Falls, Dunnville & Welland Electric Railway, Welland, has asked the City Council for a franchise to build an electric railway through Stamford. This projected railway will connect Niagara Falls, Welland

and Dunnville. F. E. Misencr, Marshville, secretary. [E. R. J., Dec. 24, '10.]

Portland, Ore.—The Portland Subway Company, Salem, will ask the Council for a franchise to build its railway over certain streets in Portland. The company will also apply to the War Department for permission to put a tube under the Willamette River 40 ft. below low water. This is part of a plan to build a 4-track tunnel under the Willamette River and 150 miles of track on the east and west sides. L. Y. Keady is interested. [E. R. J., Dec. 17, '10.]

Portland, Ore.—The Oregon Electric Railway, Portland, has received a franchise from the City Council to extend its railway on Salmon Street, from Front Street to Tenth Street, and along Tenth Street to Flanders, in Portland.

***Lebanon, Pa.**—The Lebanon & Campbelltown Street Railway has asked the City Council for a franchise to build an electric railway through Lebanon. It has asked for a similar franchise in Campbelltown. S. M. Hershey is interested.

New Castle, Pa.—The New Castle & Beaver Falls Street Railway has received a six months' extension of time to its franchise from the Councils in which to begin work on its proposed 22-mile electric railway to connect New Castle and Beaver Falls. [E. R. J., June 11, '10.]

Stamford, Vt.—The Bennington & North Adams Street Railway, Hoosick Falls, has received a franchise to build an electric railway in Stamford. George E. Greene, superintendent.

Edgewood, W. Va.—The City & Elm Grove Railroad, Wheeling, has asked the City Council for a franchise to build an electric railway over certain streets in Edgewood, W. Va. J. W. Smith, general manager.

Whitewater, Wis.—The Badger Railway & Light Company, Milwaukee, has asked the Railroad Commission for a certificate of public convenience and necessity to build its proposed electric railway from Whitewater to Lake Geneva, via Elkhorn, a distance of 22 miles. Gustav Pickhardt, Milwaukee, secretary. [E. R. J., Dec. 10, '10.]

TRACK AND ROADWAY

Birmingham & Edgewood Electric Railway, Birmingham, Ala.—Furst, Wangler & Smith have been awarded the contract by this company to build 2½ miles of track to Shades Mountain.

Groton & Stonington Street Railroad, New London, Conn.—This company has filed with the Secretary of State a petition to the General Assembly asking for an amendment to its charter, so as to grant it the right to lay tracks over certain streets in Stonington. It also wishes to start in Broadway, in Mystic, extending into Old Mystic.

Norwich, Colchester & Hartford Traction Company, Norwich, Conn.—This company will petition the General Assembly of 1911 for an amendment to its charter, whereby another entrance to Norwich will be granted other than the one originally decided upon. H. M. Pollock, secretary. [E. R. J., Nov. 5, '10.]

St. Simons Railway Company, St. Simons Island, Ga.—This company advises that it will operate its proposed 4-mile railway on St. Simons Island with gasoline motor cars. [E. R. J., Dec. 17, '10.]

Richmond, Ind.—The Commercial Club of Richmond states that it has not yet decided when it will begin work on the proposed electric line to connect Cincinnati, Brookville, Liberty and Richmond, in which it is interested. Charles W. Jordan, Richmond. [E. R. J., Dec. 17, '10.]

Southern Michigan Railway, South Bend, Ind.—This company will build in the spring an extension of its railway from Niles, thus giving a street railway connection between South Bend and Buchanan.

Iowa City (Ia.) Electric Railway.—This company advises that it placed in operation Nov. 17 the first 1½ miles of its proposed 38-mile electric railway in Iowa City. It will begin in April, 1911, to build 2½ miles more. No contracts have yet been let for the new work. Capital stock authorized, \$100,000. Issued, \$28,500. It will purchase power from Cedar Rapids & Iowa City Railway Company and will operate 2 cars. Officers: J. O. Schultz, president; J. H. Rober, vice-president; D. A. Reese, secretary and treasurer;

J. O. Schultze, general manager, superintendent and purchasing agent, and B. J. Lambert, chief engineer, all of Iowa City. [E. R. J., July 9, '10.]

Arkansas Valley Interurban Railway, Wichita, Kan.—This company has completed and placed in operation its extension from Valley Center to Sedgwick.

Murray (Ky.) Traction Company.—This company has begun preliminary surveys for its proposed 16-mile electric railway to extend from Murray to the Tennessee River. Nath. Ryan, Murray, president. [E. R. J., Jul. 16, '10.]

Aroostook Valley Railroad, Presque Isle, Maine.—This company is considering plans to build two extensions, one to begin at Washington station in Presque Isle and extend across Woodland to New Sweden; the other to go through Caribou to Limestone.

Frederick (Md.) Railroad.—This company is now electrifying the Thurmont division of its line. It will be completed in February, and service will be maintained between Montevue Hospital, Frederick, and Schleysville.

Boston & Eastern Electric Railroad, Boston, Mass.—This company has filed a petition with the House of Representatives asking that the next Legislature authorize the construction of the line, the petition requesting that the Legislature enact such a law as will insure the issuing of the certificate of exigency to the company by the Railroad Commissioners. John H. Bickford, 110 State Street, Boston, Mass., is chief engineer. [E. R. J., Aug. 20, '10.]

Berkshire Street Railway, Pittsfield, Mass.—This company has completed and placed in operation its Egremont extension, a distance of about four miles.

Moorhead & Fargo Street Railway, Moorhead, Minn.—It is stated that this company will extend its railway to Dilworth.

***Worthington, Minn.**—G. E. Doyle, East Chain, and H. W. Knight, Chicago, are interested in a plant to build an electric railway to connect Albert Lea and Worthington, via Elmore, Blue Earth, East Chain, Fairmont and along the southern edge of Minnesota and northern Iowa.

Gulfport & Mississippi Coast Traction Company, Gulfport, Miss.—This company is said to be considering plans for extending its North Gulfport Avenue and Twenty-fifth Avenue line to Bayou Banard.

Shore Line Electric Railway, New Rochelle, N. Y.—This company has completed and placed in operation its extension between Guilford and Stony Creek.

Interborough Rapid Transit Company, New York, N. Y.—This company has received from the Public Service Commission a certificate of public necessity and convenience authorizing the construction of third tracks to the Second, Third and Ninth Avenue elevated roads. Plans are also to be approved for the extension of the Ninth Avenue elevated road through Jerome Avenue to Woodlawn and of the Third Avenue line to Mount Vernon.

Alliance-Akron Railroad, Alliance, Ohio.—This company has awarded to the McGinty Company the contract for grading for its proposed 26-mile electric railway to connect Alliance and Akron, via Tallmadge, Brimfield and Rootstown. Charles Keith, president. [E. R. J., Oct. 1, '10.]

Kanuga Traction Company, Gallipolis, Ohio.—This company announces that it will extend its railway to Addison in the spring. J. S. Howard, secretary.

***Cornwall, Ont.**—Messrs. Moloney and P. F. Campbell are said to be considering plans for building a proposed electric railway between Hawkesbury and Cornwall.

Imperial Traction Company, Hamilton, Ont.—This company, which is applying for a federal charter, announces through its solicitors, Harding & Owens, Stratford, that it will begin construction in the spring on its proposed network of lines, covering western Ontario, to connect Hamilton, Guelph, Berlin, Stratford, St. Mary's and London through Ingersoll, Woodstock and Brantford. Branch lines are also proposed to Niagara Falls and to Sarnia. Headquarters, Hamilton. Capital stock, \$6,000,000. Directors: L. B. Howland, Toronto; Roger Miller, Ingersoll; George M. Reid, London, and S. W. Hay, Listowel. [E. R. J., Dec. 24, '10.]

Lehigh Valley Transit Company, Allentown, Pa.—Plans

have been completed by this company for a large expenditure for the betterment of traffic between Allentown and Philadelphia. The company has also arranged with the Quakertown Traction Company to build a new cutoff between Perkasio and Sellersville, shortening the distance about 1½ miles.

***Ogden (Utah) Rapid Transit Company.**—This company will extend its tracks from the Hermitage, in Ogden, to Huntsville. James A. West, Ogden, chief engineer.

SHOPS AND BUILDINGS

Southern Pacific Railroad, Los Angeles, Cal.—It is announced that this company will begin work at once on its new passenger station at Sixteenth Street, in Oakland. The structure is to be two stories high and so arranged as to accommodate elevated tracks for the proposed double-track electric railway to Berkeley. The cost is estimated to be about \$300,000.

Lake Shore Electric Railway, Cleveland, Ohio.—Negotiations are under way and plans formulated for building a combination hotel and interurban depot by the Lake Shore Electric Railway at the southeast corner of Superior Avenue and the Public Square in Cleveland. The cost is estimated to be about \$1,000,000.

Greenville Railway & Light Company, Greenville, Tex.—This company will build its car house on North Walnut Street, in Greenville. A. B. Coryell, Greenville, general manager.

Norfolk & Portsmouth Traction Company, Norfolk, Va.—This company plans to erect a car house on the site of its present Huntersville car house. The company has recently acquired the property adjoining the car house for this purpose. Construction will begin as soon as financial arrangements are completed.

POWER HOUSES AND SUBSTATIONS

Connecticut Company, New Haven, Conn.—This company has awarded to the Gillette Construction Company and Lord & Lake Company the contract for building a brick addition to its power house on Grand Avenue in New Haven to accommodate a 400-kw generator and other electrical equipment.

Augusta-Aiken Railway & Electric Company, Augusta, Ga.—This company will purchase, through the J. G. White Company, New York, N. Y., a large quantity of power house supplies, including turbines, motor generator sets and switchboards.

East St. Louis & Suburban Railway, East St. Louis, Ill.—This company plans to build a power house to supplant the storage battery station on Harrison Street and West Street, Belleville. The site will be near the present site of the car house, on the Rock Road. The cost is estimated to be about \$20,000. C. M. Clark, 321 Chestnut Street, Philadelphia, Pa., president.

Keokuk Electric Railway & Power Company, Keokuk, Ia.—It is reported that this company is considering plans for making extensive changes to its power house in Keokuk. A. D. Ayrcs, Keokuk, manager.

Boston (Mass.) Elevated Railway.—This company has recently placed an order with the Westinghouse Machine Company, Pittsburgh, for seven Roney stokers to replace some old equipment at the Charlestown and Lincoln Wharf stations.

Niagara Gorge Railroad, Buffalo, N. Y.—This company has recently installed a small substation at Lewiston, containing a 300-kw General Electric rotary converter with two transformers.

Hamilton, Caledonia & Port Dover Electric Railway, Hamilton, Ont.—It is said that this company will build a power house at Caledonia. George L. Staunton, Hamilton, is interested.

Portland Railway, Light & Power Company, Portland, Ore.—This company has placed in operation its new east side power station, known as station L. The station has a capacity of 2720 hp. Next spring the station will be equipped with a 2000-kw d.c. generator.

Wilkes-Barre (Pa.) Railway.—This company is making improvements to its power house on South Main Street in Wilkes-Barre. A three-story addition will be built.

Manufactures & Supplies

ROLLING STOCK

Cleveland Erie Railway, Gerard, Pa., will purchase one 45-ft. or 48-ft. interurban car.

Morris County Traction Company, Morristown, N. J., will purchase 10 or 12 passenger cars and two snow plows.

Houston Electric Company, Houston, Texas, will order five double-truck, semi-convertible cars and 10 double-truck trail cars.

Chattanooga (Tenn.) Railway & Light Company has recently ordered 10 28-ft. 8-in. prepayment cars from the G. C. Kuhlman Car Company.

Guadalajara (Mexico) Tramways has ordered from the American Car Company 10 closed cars, 27 ft. 4 in. long, mounted on Brill No. 27-GE trucks.

Augusta-Aiken Railway & Electric Company, Augusta, Ga., will purchase through J. G. White & Co. 15 or 20 pairs of trucks and a large quantity of railway motor equipment.

Kankakee (Ill.) Electric Railway Company has ordered from the Westinghouse Electric & Manufacturing Company three double equipments of 92-A 35-hp motors in addition to the order recently announced in the ELECTRIC RAILWAY JOURNAL of Nov. 19, 1910.

San Antonio (Tex.) Traction Company, noted in the ELECTRIC RAILWAY JOURNAL of July 30, 1910, as having ordered four semi-convertible pay-as-you-enter cars from the American Car Company, has specified the following details for these cars:

Seating capacity	44	Destination signs	Hunter
Length of body	28 ft. 10 in.	Gongs	Dedenda
Over vestibule	42 ft. 10 in.	Hand brakes	Peacock
Width over sills	8 ft.	Headlights	Crouse-Hinds
Over posts at belt	8 ft.	Motors	4-GE-54
Sill to trolley base	9 ft. 6 in.	Registers	International
Height rail to sills	32½ in.	Safety guards	Meyer
Body	Wood	Sanders	Dumpit
Underframe	Wood and iron	Seats	Winner
Curtain fixtures	Cur. S. Co.	Trucks	Brill 27-G-1
Curtain material	Pantasote		

TRADE NOTES

Baldwin Locomotive Works, Philadelphia, Pa., have moved their St. Louis office from the Security Building to 1,614 Wright Building.

Machado & Roller, New York, N. Y., have opened a Western sales office at 740 Monadnock Block, Chicago, Ill., in charge of Harry T. Shire, secretary of the company.

Atlantic Insulated Wire & Cable Company, Stamford, Conn., has appointed I. D. Gloss sales manager, to succeed the late Mr. Porter, with offices at 120 Liberty Street, New York.

Kennicott Company, Chicago Heights, Ill., has leased one-half of the fourteenth floor of the Corn Exchange Bank Building, Chicago, Ill., to be used exclusively by its sales office.

L. H. Baekeland, Yonkers, N. Y., has been awarded the John Scott Legacy Premium and Medal by the City of Philadelphia, on the recommendation of the Franklin Institute, for his invention of Bakelite, a compound with high insulating properties.

W. J. McBride, vice-president and general manager of the Haskell & Baker Car Company, Michigan City, Ind., has been elected president, succeeding the late J. H. Barker. Charles Porter, secretary of the company, has been elected treasurer, and Louis Boisot, secretary.

National Brake & Electric Company, Milwaukee, Wis., announces that Robert Long has been appointed manager of its New York office, succeeding S. F. Weston, resigned. Mr. Long has been associated with the company for several years and has just returned from South America, where he has had charge of the company's business there for the past few years.

W. A. Sharp, who has been actively connected with engineering interests in Chicago, Ill., for the past 20 years, has opened an office in the Boston Block, Minneapolis, Minn., where he will handle, in connection with other interests, the

Northwestern business of the Murphy Iron Works, Detroit, Mich., having charge in that territory of the sale and installation of the Murphy automatic furnace.

Murphy Iron Works, Detroit, Mich., report that the year 1910 has shown the largest volume of business done by the company since its organization 33 years ago, and that the prospects for the coming season are excellent. Among recent orders for Murphy furnace equipment are one from the Boston Elevated Railway and one from the Cincinnati Traction Company.

Dodge, Day & Zimmermann, Philadelphia, Pa., engineers, have added to their organization Walter Loring Webb and James M. Kennedy. Both gentlemen are well known in the engineering world. Mr. Webb is the author of several engineering textbooks, including "The American Civil Engineer's Pocket Book," "Economics of Railroad Construction" and "Problems in the Use and Adjustment of Engineering Instruments."

Hill-Evans Rail Chair & Coupling Company, Belfast, Me., has been incorporated, with a capitalization of \$50,000. The company proposes to manufacture railroad supplies and appurtenances, especially the Hill-Evans coupling and joint, patented May 17, 1910, and owned by Jesse C. Evans, Palmer G. Hill, Shelton M. White and William J. Alexander, of Lumberton, N. C. The directors are Austin W. Keating (president), Ralph O'Connell (treasurer) and Maurice W. Lord, all of Belfast.

ADVERTISING LITERATURE

J. Faessler Manufacturing Company, Moberly, Mo., has issued catalog No. 27, describing Faessler boilermakers' tools.

C. F. Pease Company, Chicago, Ill., has recently issued a 100-page illustrated catalog on blueprint machinery and drafting-room supplies.

Dossert & Company, New York, N. Y., have issued a 62-page catalog which illustrates and describes the different types of Dossert solderless connections.

Edison Storage Battery Company, Orange, N. J., has recently issued a complete catalog which describes and illustrates the Edison storage battery.

Ingersoll-Rand Company, New York, N. Y., has printed forms No. 3002 and 4109. Form No. 3002 illustrates and describes Class "A-1," straight-line, steam-driven, single-stage air compressors. No. 4109 describes the different features of the Temple-Ingersoll "electric-air" rock drills.

American Steel & Wire Company, Worcester, Mass., is distributing an illustrated pamphlet describing its "Non-Pay-Reel" wire-stringing device, which eliminates the use of cumbersome reels in stringing wires not larger than No. O B. & S. It consists of a payout reel and a grooved grinding pulley mounted on the end of a swinging arm. This arrangement makes the stringing of wires on poles a very simple process, as it prevents snarls. Should lack of space require it the wire may be drawn over a cross-arm on the pole when the coil is almost directly under the cross-arm. Other advantages of this method are presented in the pamphlet.

The J. G. Brill Company, Philadelphia, Pa., prints in the December issue of the Brill Magazine a biographical sketch of R. P. Stevens, president and general manager of the Lehigh Valley Transit Company. The sketch is accompanied with an excellent portrait of Mr. Stevens as a supplement. Among the feature articles are the following: "Conditions Which Govern the Type of Car for City Service, Calcutta, India"; "More Pay-As-You-Enter Cars for Portland, Ore."; "Electrification of Steam Railway System in Northern Italy"; "Pay-As-You-Enter Cars for the Rockford & Interurban Railway"; "Semi-Convertible Cars for San Antonio," and "Equipment for the Missoula Street Railway." The December issue also contains the index for the year from January, 1910, to December, 1910. This index is arranged in the form of a table, in which the names of the companies whose rolling stock has been described are listed alphabetically with the page number under a division of the table which shows the type of rolling stock which is described. Thus it is easy to refer to all the articles which have appeared in the magazine on any particular type of car.