

# ELEVATED NEWS

SAFETY  
SERVICE  
COURTESY



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Chicago, Illinois

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A news sheet issued for the purpose of acquainting the people of Chicago with their Elevated Railroad System.

Address communications to H. A. JOHNSON, Editor, Room 1247, Edison Building.

Copy of an Article appearing in Electric Railway Journal  
August 21, 1915.

Believing that our patrons will be interested, we publish herewith a copy of an article that appeared in one of the leading technical magazines of America.

## SAFETY OF TRAINS ON THE CHICAGO ELEVATED

The Organization of this Property Has Been Built Around the Safety Idea. Special Fitness for Safe Operation Governs the Selection of All Employees

More and more interest is taken by the traveling public in the protective measures provided by transportation companies. This is justly so and in recognition of this fact a general outline of that part of the organization of the Elevated Railroads of Chicago bearing most directly on the safety of its patrons is given.

The Elevated Railroads of Chicago transport 170,000,000 people annually, hence the responsibility for their welfare and safety is not a light one, a fact which is thoroughly appreciated by both the management and the employees. They believe that safety is, after all, largely a matter of the personal equation, and to get the proper results great care is exercised in the selection of men for each responsible position. After that, the makeup and routine of the organization enters very largely into the kind of results that are obtained. Accordingly, a description is given of the operating and maintenance departments, their relation to the special work of the safety engineer and his committees, and the work of the medical department as it bears on the safety both of employees and passengers.

### TRANSPORTATION DEPARTMENT — ORGANIZATION AND METHODS

First in the public mind, so far as safe operation is concerned, is the transportation department, because it is this department with which the public is in closest contact. The head of this department is the general super-



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intendent of transportation, M. J. Feron, who has been twenty years in the service, having started as a switchman and advanced from dispatcher, trainmaster and division superintendent to his present position. Previous to entering the service of the elevated railroads, Mr. Feron was for several years in the operating department of the Chicago & Northwestern Railroad.

Under the general superintendent, there are five division superintendents in direct control of train operation in their respective parts of the city. Each of these division superintendents has his office and corps of assistants at a convenient point on the division. The assistants of the division superintendents are the day and night trainmasters and the service inspectors. There are four to each division, and to supervise the operation of the trains and the crews, they are kept on the road continually. Dispatchers who are in immediate charge of the motormen and trainmen and the dispatching of trains, are stationed at each of the terminals. All of these transportation officials have been promoted through the ranks, the dispatchers and service inspectors being selected from the motormen and switchmen classes and the superintendents and trainmasters from the train dispatchers.

Selecting and training the rank and file of the transportation department also receives careful attention. The first step to obtain employment on the elevated railways, after being tentatively appointed as an extra trainman, is the physical examination by the medical examiner, Dr. H. E. Fisher, whose methods have been described in detail in the "Electric Railway Journal" issues of June 26, 1915, and August 7, 1915. An extra trainman is instructed for a period of one week by an experienced conductor in the proper handling of gates, bell signals and calling stations. He must serve as an extra trainman for two or three years before he is given a regular run. To break in as conductor, the trainman is taken to the yards and shops and instructed in the mechanical and electrical features of the equipment. To break in as motorman he must make a more detailed study of the equipment after which he is required to spend about three months to learn to handle a train and to read signals in actual operation. At the end of this time, the extra trainman is certified by the instructing motorman, after which he is finally examined to determine his fitness by the trainmaster and division superintendent. If these various tests are passed satisfactorily, he is eligible to work as an extra motorman.

A man in train service may break in as a switchman or towerman, providing he shows sufficient aptitude for this work to give his superiors confidence that he will make good. In either of these classes he is instructed by a regular towerman or switchman, certified and finally examined by the trainmaster and the superintendent. A towerman also must be examined regarding mechanical and electrical details of a plant by the division interlocking foreman. From the foregoing, it will be appreciated that much attention is given to schooling prospective employees. Moreover, after a man is considered qualified for the service, he is closely supervised by the department and a permanent record of his work is kept for reference. In this connection



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It is interesting to show a list of the regular motormen and conductors who have been in the employ of the Elevated Railroads of Chicago for periods varying from five to twenty-three years:

	Motormen	Conductors
Less than 6 years.....	0	0
6 to 10 years.....	114	247
10 to 15 years.....	149	102
15 to 20 years.....	97	21
20 to 23 years.....	57	5
	<hr/>	<hr/>
Total number at present employed ...	417	375

### WAY DEPARTMENT ORGANIZATION AND WORK

Public interest is next attracted to the maintenance of way department which maintains the tracks, structure, signals and buildings in proper condition for the operation of trains. At the head of this department is the Engineer Maintenance of Way, B. J. Fallon, who has been eight years with the elevated companies in this capacity, and eight years in the engineering department of the Chicago, Burlington & Quincy Railroad. Immediately under him is an assistant engineer, who has been in the service ten years and a signal engineer who supervises and inspects all signal and interlocking work, who has also had ten years' experience with the signals. The way department staff also includes a bridge engineer, who supervises and inspects the elevated structure, bridges and buildings.

A general foreman is in charge of the men in the maintenance of way department on each one of the five divisions of the elevated lines. He has full supervision of all the work of this department and inspects the condition of the property periodically. The physical property under this foreman is divided into the following three classes; track work, structure and buildings, and interlocking and signal devices. An experienced foreman is in charge of each class on each division, and he in turn is aided by competent assistant foremen.

The regular force of the maintenance of way department, comprises about 300 men. This number is increased by approximately 200 men during the months from April to November, when most of the construction and rehabilitation work is done.

All electrical work, including the maintenance and installation of electrical circuits and the third rail, is handled by a separate department. This is under the electrical engineer, who with his assistant has jurisdiction over the division electrical foremen.

At all track junctions on the elevated railroad system a modern interlocking plant has been installed. These plants protect all train movements on tracks through the junctions, and are so constructed that the failure of any part of the apparatus automatically stops all traffic on the tracks con-



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trolled by the plant. All of these plants are under the direct inspection of experienced interlocking repairmen, one or more being stationed at all important junctions.

Each of the four elevated railroads is divided into track sections, and a number of section-men or track-walkers are regularly assigned to each. These men continually walk and inspect their track sections and make all light repairs necessary for safe operation. Extensive repairs and renewals are made by track construction gangs. During the last several years the elevated railroads have maintained a large force of extra men to improve the various physical features of the property. Tie renewals are constantly necessary and in some places, as shown in one of the accompanying illustrations of a crowded loop platform, the ties have been placed unusually close together. This was done throughout the Union Loop to deaden noise and at the same time it results



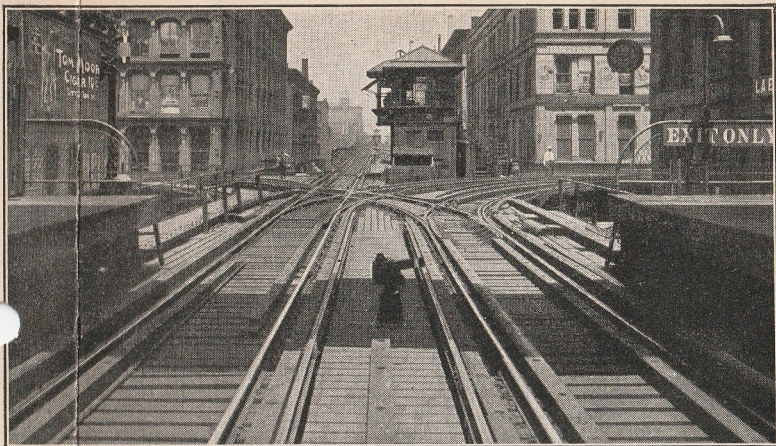
Photograph showing close tie spacing used on the Union Loop.

in a perfectly safe track without using tie plates. Incidentally at all platforms where crowds assemble during the morning and evening rushes several guards are stationed to safeguard the public.

The illustration of a Loop junction at Fifth Avenue and Lake Street shows the heavy guarded track construction installed at such points. Another one of the accompanying illustrations of the same junction shows very clearly a track trip installed beside the semaphore signal. In case a train fails to stop at this signal, the trip sets the air brakes. The signal set at danger, the track trip and the diverting track terminating at a bumping post installed each side of a bridge, are also shown in one of the illustrations. In case the bridge is open and a motorman runs by the signal,

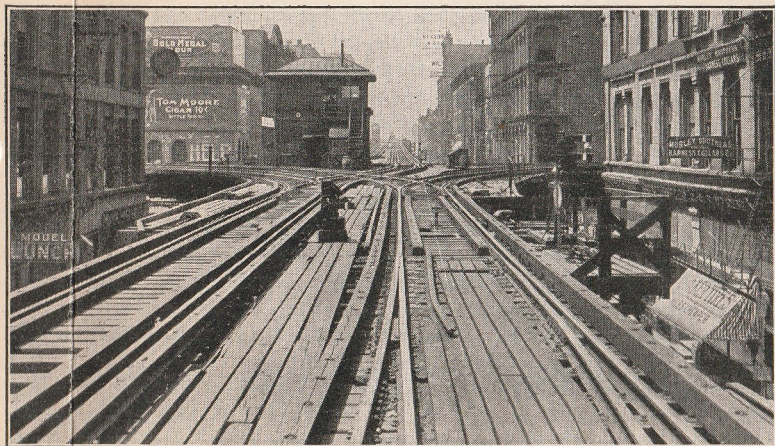


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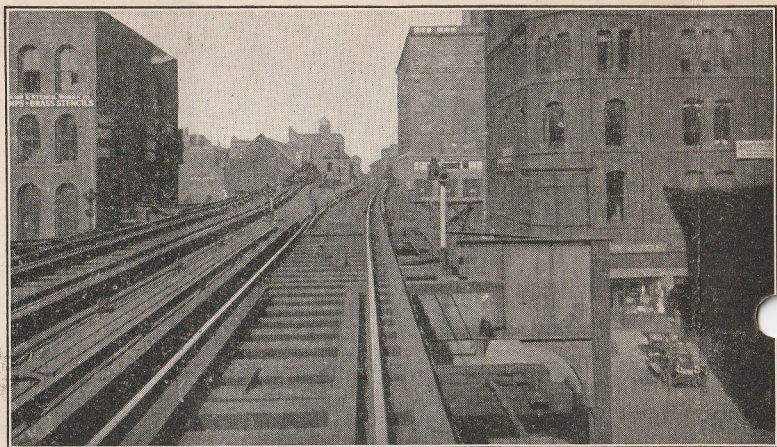
Looking north at Loop Junction at Fifth Ave. and Lake Street.

the train will take the diverting track, and at the same time the brakes will be thrown into emergency by the track trip. The foregoing protective devices are typical of the unusual precautions taken within the last few years by the Elevated Railroads of Chicago to avoid accidents. This is true not only of the operation of trains but the principle has been applied to every department of this railroad.



Photograph showing track trip in position to set the air brakes on any train passing semaphore.





Photograph showing Diverting Track at River Bridge.

## THE SAFETY ORGANIZATION

The management of the elevated railroads was quick to recognize the value of the safety first movement, and a number of years ago perfected a permanent safety organization. Experience soon demonstrated that satisfactory safety work could only be accomplished by forming special organizations and committees to supplement and co-operate with the regular operating organization. All safety work is under the supervision of J. H. Mallon, safety engineer. He is aided by a central committee composed of two department heads and himself. In addition, there are four division safety committees working in conjunction with the central committee. The chairman of these division committees is the division superintendent. He is aided by the division general foreman of the way department, and the other committee members are the division general foreman of the shop department, supervisor of service and a representative from the claim department. Thus a diversity of viewpoint is brought to bear on all safety problems.

All of the safety committees hold weekly meetings at which they discuss suggested improvements, the causes of accidents that may have occurred and from time to time inspections are made. A record is kept of each committee meeting and it is exchanged with the other committees and, in this way all committees may benefit. Safety suggestions are submitted to the department heads or the general manager for action.

Each month the Central Committee publishes a "Safety Bulletin," which keeps constantly before the men the principles of safety. The articles contained in these bulletins are written by employees and department heads. In addition to the bulletin, the safety engineer periodically gives lantern slide lectures both for employees and for the public.



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Perhaps the most unique and helpful feature of the safety work of this company is a carefully prepared *Safety Rule Book*. This is given to each employee upon entering the service, along with a safety first button which is worn quite generally. The safety rule book is a compendium of the findings of the safety organization since its conception. Through it the new employee may benefit by the experience of his predecessors. The contents of this rule book are revised and extended from time to time to keep it up to date. It was carefully compiled by the department heads so that not only is the motor-man able to see at a glance the rules for the safe handling of a train, but the lineman has before him the rules for safe handling of live conductors. The back of the rule book contains complete first aid instructions. In the maintenance of way, shop and electrical departments, these rules are read and discussed periodically.

### SAFETY IN THE MEDICAL DEPARTMENT

The medical department plays an important part in safeguarding and assuring the patrons of the Elevated Railroads of Chicago that every possible precaution is taken for their safety. The public scarcely realizes the results that are accomplished by the safety first movement, the vast amount of detail necessary to assure the success of a crusade for the protection of human life. The company surgeon believes that it is essential that a public service company employ only men and women who are physically fit and not handicapped by poor health or physical defects. Transportation or railroad work brings accidents and for that reason it is especially necessary to have men in charge of the operation of trains who will assure the maximum degree of safety to the thousands of passengers entrusted to their care.

To guard against physical defects being either the direct or indirect cause of accidents, the medical department was organized. When an applicant seeks a position in any of the departments, he is obliged to undergo a thorough physical examination to ascertain whether he is physically equipped to bear the responsibilities which will devolve upon him. In the train service every employee and applicant has his sight, hearing, color sense and physical condition carefully examined. Only those men are employed who have successfully passed the medical examination, hence, equal the standard set by the medical department.

Perfect sight is essential to safe train movements, as a trainman must be able to see long distances perfectly to interpret signals. At night the safety of train operation is largely controlled by the signal lights, and for that reason it is necessary that an employee have perfect color vision or perception. Unfortunately it is a fact that the two colors that are most often confused by people who are color blind, are the two principal colors used for train operation, viz., red and green. The public quickly appreciates the great care that must be exercised in examining trainmen for this condition, as it is the chief factor in assuring safety at night.



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Trainmen must have perfect hearing to be efficient, a fact so readily recognized that further comment is unnecessary. A trainman's heart is also a very valuable asset to the safe operation of trains. Railroads hold no place for men with weak hearts or any heart disease. Quite frequently the heart fails at the critical moment when a trainman should have full possession of all of his faculties. All employees are examined every two years, and all new men are examined at the time of entrance into the service. Every employee in every department except the office force and the ticket agents is given a physical examination, and each department has a set of standard physical requirements.

The medical department has organized and had in practical operation for two years a first-aid-to-the-injured system. Regardless of all the "Safe First" measures installed, there will be accidents, more especially to employees—and to meet these emergencies the first aid system was inaugurated. It includes over one hundred first aid stations located at frequent intervals over the entire mileage. At each station is a complete surgical and medical outfit containing all the necessary supplies required to give aid. Each station is designated by a red cross in a white circle conspicuously displayed. In connection with the first aid system it was necessary to train employees in the rendering of intelligent first aid. Over 400 employees of the elevated railroad have received lectures and practical demonstrations in giving first aid treatment, and the work accomplished by these men during the past two years has been instrumental in saving a number of lives and in preventing complications to injuries.

From the foregoing the valuable work accomplished by this class of procedure may be readily observed.

## TRAIN ACCIDENT RECORD CHICAGO ELEVATED RAILROADS

During the ten year period ending December 31, 1914, the Elevated Railroads carried 1,526,632,751 passengers. During this period two passengers met fatal accidents while on trains. This shows the rate of fatal accidents to passengers on trains as one to every 763,316,375 passengers carried.

The aggregate number of train trips made per annum is 1,740,416 or a total of 49,015,593 car miles run. This shows the great volume of train movement and compared with the fatal accident record above stated, indicates that Elevated service has fewer accidents than any other method of transportation.

The next issue of the *Elevated News* will contain a map of Chicago in colors, showing the new extensions of the Douglas Park Branch, and all stations on the various lines. *Do not fail to secure a copy.*