

CLEVELAND EDUCATION SURVEY
RAILROAD AND STREET
TRANSPORTATION

BY
RALPH D. FLEMING



THE SURVEY COMMITTEE OF THE
CLEVELAND FOUNDATION
CLEVELAND • OHIO

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TRANSPORTATION**

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FOREWORD

This report on "Railroad and Street Transportation" is one of the 25 sections of the report of the Education Survey of Cleveland conducted by the Survey Committee of the Cleveland Foundation in 1915. Twenty-three of these sections have been published as separate monographs. In addition there is a volume entitled "Wage Earning and Education," which is a summary of the sections relating to industrial education. The final volume, which is entitled "The Cleveland School Survey," tells of the conduct of the entire work and summarizes the findings and recommendations of the 15 volumes relating to the regular work of the public schools. Copies of all these publications may be obtained from the Cleveland Foundation. They may also be obtained from the Division of Education of the Russell Sage Foundation, New York City. A complete list will be found in the back of this volume, together with prices.

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RAILROAD AND STREET TRANSPORTATION

PART I

RAILROAD TRANSPORTATION

Railroad transportation in the United States employs one man among each 16 between the ages of 21 and 45 engaged in gainful occupations, and pays its workers each year a total of \$1,400,000,000. To a greater extent than most utilities dealing with public service it is national rather than local in character. Its problems, its work, and its methods in different localities follow the same general lines. While affected by such diverse elements as topography, industries, traffic density, water transportation, etc., the essentials of railroad transportation in the vicinity of Cleveland differ but little from those in other parts of the country.

The Interstate Commerce Commission has divided the railroad map into three broad territorial divisions, the east, the west, and the south. The eastern section, of which Cleveland forms a part, includes the territory east of the Mississippi and north of the Ohio and Potomac rivers.

In 1910 this section had an estimated population of 37,600,000 persons, and contained one-third of the total railroad mileage of the United States. Within its limits were transported more than two-fifths of the freight and nearly one-half of the passengers carried by railroads in the entire country. In operating revenues, traffic density, and number of employees it ranked first among the three territorial divisions. It contains seven large railroad systems, four of which—the Pennsylvania, New York Central, the Baltimore and Ohio, and the Erie—have termini in Cleveland.

SCOPE OF STUDY

This report treats only of those railroad occupations that are directly concerned with the actual operation of trains, such as those of engineers, firemen, conductors, and trainmen. These occupations have many points in common and bring into play many similar mental and physical characteristics. The requirements for entrance are strict and examinations for higher positions obligatory. In all of them the hazards are great. Each occupation is firmly intrenched in unionism. When such matters as promotion, hours, wages, and overtime are in dispute, settlement is made by collective bar-

gaining with railroad officials, or in case of disagreement, by arbitration proceedings.

In Table 1 will be found an estimate of the number of men engaged in these occupations in Cleveland at the present time. This estimate is based on the figures of the U. S. Census for 1910. The increase since that date is computed on the basis of the general increase in population for the past five years.

TABLE 1.—ESTIMATED NUMBER OF MEN EMPLOYED IN
TRAIN OPERATING IN CLEVELAND, 1915

Occupation	Number
Switchmen and flagmen	1,116
Enginemen	1,051
Brakemen	919
Conductors	788
Firemen	591
Total	4,465

REQUIREMENTS FOR ENTRANCE

The requirements for entrance call for a high degree of physical fitness. Some idea of the strictness of the examinations may be gained from the following description.

A prospective fireman is first required to fill out an application. Among other data he must give his family history as it relates to insanity, tuberculosis, and certain other diseases. His examination includes reading and writing, vi-

sion and hearing, tests of color sense by means of flags and lanterns, and finally a physical examination by a physician. The severity of these color discrimination tests is shown by the fact that about four per cent of all applicants fail in them. If a candidate is successful in his examinations, he makes a number of student trips over the road in order to familiarize himself with his duties. Each engineer with whom he rides reports on his fitness to do the work. After entering the service, he is given other examinations at frequent intervals.

Few men in these occupations are now hired under the age of 21 or over that of 35. They usually enter the service in their early twenties. This enables the railroads to obtain the services of men during their most productive period.

The exacting entrance requirements insure a type of employees which, for physical fitness, mental alertness, and ability to handle difficult situations is unsurpassed in any industry.

PROMOTION IN RAILROAD SERVICE

In all the occupations which have to do with train movement there are certain established rules which govern promotion. Seniority, by which is meant length of service, gives to the oldest engineer, fireman, conductor, or train-

man, the choice of the desirable runs open to his class. This advantage was won by railroad employees through collective bargaining. It has completely freed them from the evils of favoritism in the distribution of runs.

Frequent examinations are the stepping-stones to higher positions. They are compulsory on practically all roads in the eastern section. In this way a fireman qualifies for the position of engineer, a freight conductor for that of passenger conductor, and a brakeman for a position as conductor.

In a recent arbitration with trainmen and conductors it was claimed by the railroads in the eastern group that a brakeman was promoted to a conductor's position after an average service of about six years. In another arbitration it was stated that the fireman's period of apprenticeship before promotion to the position of engineer averaged about seven years. Examinations for promotion are based on a standard text known as the Book of Rules. This is a compendium of information for all employees whose duties are in any way connected with the movement of trains, and includes general rules and regulations; definitions of railroad nomenclature; train rules on standard time, signals movement, orders, and interlocking; and spe-

cific regulations for each occupation in road and yard service.

Each of the two services, passenger and freight, has its advantages. The passenger service is preferred by those trainmen and conductors who desire a short working day with little overtime. Freight service requires a longer working day and more overtime. The younger engineers as a rule prefer fast trains in either service, while the older men are satisfied with local passenger and way freight trains because less strain is involved in their operation.

It is claimed that with the coming of locomotives of greater tractive power, cars of greater capacity, and trains of increased length, there is less demand for enginemen and trainmen in freight service because fewer trains are needed to accommodate the traffic. As a result, many who qualify for these positions are unable to secure them. One fireman on a railroad running out of Cleveland testified in arbitration proceedings that during a period of five and one-half years after passing the engineer's examination he had served in this capacity only about five months. He attributed his inability to hold an engineer's position to the increase in size and relative decrease in number of locomotives and stated that on his road the tractive power of some engines was nearly double that of engines