

A single-track line of the Pennsylvania crosses the Illinois Central 1,197 ft. north of Arcola station; this crossing is protected by an interlocking, with the northward I.C. home signal located 615 ft. north of the station. At the time of the accident, the plant was lined for the I.C. and this signal was clear.

When approaching Arcola and when about 1¼ miles distant, the engineman of No. 6 could see the green aspect of the home interlocking signal, and he called its indication to the fireman, who replied. The engineman thought that the green aspect was displayed for his train. Upon reaching a point 700 or 800 ft. to the rear of Second No. 4, the engineman and the fireman simultaneously observed its rear end.

At this time the speed of his train was about 50 m.p.h. and he applied the brakes in emergency, but too late to avert the collision.

A part of the rules, which apply when the train-stop and cab-signal equipment is out of service, read as follows: "to proceed at a speed considered safe, taking weather conditions into consideration, and approach all facing point switches prepared to stop." It is clearly apparent that the management's interpretation of these requirements was not enforced, as the investigation disclosed that, during the six-month period prior to the day of the accident, 10 trains which were operated over this district with the automatic train-stop devices inoperative, made up time varying from 6 to 17 minutes on their schedules."

"In general practice throughout the country, one or another of the following measures is adopted in case of a failure enroute of automatic train stop, train control or cab signal devices:

1. Substitution of an engine with equipment in proper operative condition.
2. Protection by absolute manual block system.
3. Continued operation of engine with equipment cut out but at materially reduced speed.

All these alternatives were available to the Illinois Central in this case. A freight engine which was equipped for passenger service was available at Edgewood, 56.7 miles south of Arcola, and there were eight train-order offices between Branch Junction and Champaign which could have been utilized as manual block offices; however, the investigation indicates that neither of these alternatives was adopted principally for the reasons that some delay would have resulted and no provision had been made for establishing a manual block system under these conditions; it is apparent that delay also would have resulted had the third alternative listed above been employed."

The Commission concluded its report with the statement that "this accident was caused by failure to provide flag protection for the preceding train and by operation of the following train with inoperative automatic cab-signal and train-stop equipment without providing adequate protection" and recommended "that officials of this railroad promptly take necessary steps to provide adequate protection for train movements when automatic cab-signal and train-stop equipment is inoperative."

The Fansteel Metallurgical Corporation, North Chicago, Ill., in its annual report stated that the aggregate net sales for 1939 show an increase of 75 per cent over 1938. Consolidated net earnings for 1939 were \$238,660.22, or approximately \$1.02 per share of outstanding common stock after deducting annual dividend of \$5.00 paid per share of outstanding preferred stock. Working capital was materially increased. Current assets exceed current liabilities at a ratio of four and one-half to one. A number of important improvements in plant equipment, methods and processes have been installed, sales and technical staffs enlarged, and branch offices opened in several key cities.

Personal

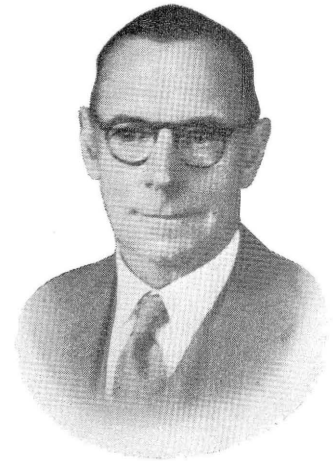
Changes on the New York Central Lines

Effective April 1, **F. B. Wiegand** retired from his position as signal engineer of the New York Central including the Michigan Central and the Cleveland, Cincinnati, Chicago & St. Louis. **J. J. Corcoran**, assistant to Mr. Wiegand, has been promoted to signal engineer with headquarters in Cleveland, Ohio, in charge of the New York Central, Lines West of Buffalo, also including the Michigan Central and the Cleveland, Cincinnati, Chicago & St. Louis; while **R. B. Elsworth**, assistant signal engineer, New York Central, Buffalo and East, has been promoted to signal engineer in charge of this territory. **A. S. Haigh**, office engineer with headquarters at Albany, has been promoted to assistant signal engineer, reporting to Mr. Elsworth.

J. J. Corcoran was born at West Springfield, Mass., on April 14, 1889, and graduated from Worcester Polytechnic Insti-

tered the service of the New York Central at Buffalo, N.Y., serving successively as signal helper, assistant maintainer, maintainer, maintenance inspector, construction inspector, draftsman, general draftsman, assistant engineer, and chief inspector. From 1922 to 1924, Mr. Corcoran was engineer of construction, and in 1924 was promoted to assistant signal engineer, Lines East. In September, 1937, he was appointed assistant signal engineer, with headquarters in Cleveland, Ohio, which position he held at the time of his recent appointment.

F. B. Wiegand, signal engineer of the New York Central, with headquarters at Cleveland, retired from his position on April 1. Mr. Wiegand entered the service of the New York Central & Hudson River Railroad, now the New York Central, on April 12, 1891, serving as a signal maintainer. In May, 1894, he was appointed signal inspector on the Harlem division of the New York Central; in October, 1901, assistant signal supervisor on the Hudson division; and in July, 1902, signal supervisor on the River division. In March, 1903, Mr. Wiegand became general signal inspector of the entire road, and three months later was appointed signal supervisor of the Mohawk division.



F. B. Wiegand

In July, 1906, he was appointed assistant signal engineer of the Lake Shore & Michigan Southern, now part of the New York Central. In October, 1913, he was appointed signal engineer of the New York Central, Line west of Buffalo. In 1922, Mr. Wiegand acted also in a consulting capacity for the Cleveland Union Terminals Company, and on March 1, 1925, his jurisdiction was extended over the Ohio Central Lines, which railroad at that time was leased by the New York Central. On September 1, 1933, Mr. Wiegand had his jurisdiction extended to include the Lines East of Buffalo, following the retirement of W. H. Elliott, signal engineer of the Lines East. On June 1, 1937, following the retirement of J. C. Mock, signal engineer of the Michigan Central, Mr. Wiegand's jurisdiction was extended over that line, and on September 1, 1937, following the death of C. F. Stoltz, signal engineer of the Cleveland, Cincinnati, Chicago & St. Louis, Mr. Wiegand's jurisdiction was extended over



J. J. Corcoran

tute with a degree of Bachelor of Science in Electrical Engineering in 1911. He first entered railroad service in 1906 on the Boston & Albany, and served during the summer months of that year and the succeeding years to 1910 inclusive as water boy, track inspector, material clerk, and signal wireman's helper. In 1911 he en-

that line of the New York Central System. For many years Mr. Wiegand has been active in the work of the Signal Section, A.A.R., and he served as chairman of that body in 1922.

Robert Bisbee Elsworth was born in Muskegon, Mich., on February 14, 1880. He was graduated from the University of Michigan with a degree of Bachelor of Science in Mechanical Engineering in 1905, and received a degree of Civil Engineer in the same school in 1934. In June, 1901, Mr. Elsworth first entered railroad service as a laborer in the signal department for the Michigan Central and in February, 1906, was transferred to signal work on the Grand Central Terminal in New York during the electrification program. In April, 1911, he was appointed assistant signal engineer of the New York



R. B. Elsworth

Central Railroad, Buffalo and East, and the Boston & Albany, being promoted in May, 1913, to engineer maintenance of signals of the New York Central, Buffalo and East. In March, 1921, the signal maintenance and engineering departments were combined, and Mr. Elsworth returned to his position as assistant signal engineer, which position he held until his recent promotion as signal engineer of the New York Central, Buffalo and East. Mr. Elsworth is a member of the American Society of Professional Engineers and for many years has been active in the work of the Railway Signal Association and its successor the Signal Section, A.A.R., having served as chairman of the Battery Committee during the years 1912 to 1919, inclusive, and he was also a member of the Committee of Direction during the years 1928 to 1931, inclusive. He is a member of the American Railway Engineering Association, serving on the Committee on Yards and Terminals.

Arthur Stead Haigh was born in Utica, N.Y., July 29, 1886, and first entered railroad service in August, 1902, as a telegraph operator on the R. W. & O., which is now the St. Lawrence division of the New York Central. In September, 1908, he left railroad service to attend the Rensselaer Polytechnic Institute, and in 1910 reentered the service of the New

York Central as a draftsman in the signal engineer's office at Albany. In September, 1919, he was appointed chief draftsman, and in May, 1929, was promoted to office engineer, the position which he held at the time of his recent promotion to assistant signal engineer. Mr. Haigh has been active in the Signal Section, A.A.R., since 1921, being at present the chairman of Committee VI—Designs. Since 1932, Mr. Haigh has been a member of the American Railway Engineering Association, and at present is a member of Committee IX—Highways.

Earl Miller, signal supervisor, has been appointed superintendent telegraph and signals of the New York, Chicago & St. Louis, effective March 16. A. L. Shepard, signal office engineer, has been appointed assistant signal superintendent, effective the same date. Mr. Miller entered the service of the Nickel Plate in April, 1913, as a signal helper, and worked successively as a signal maintainer, maintenance foreman and general foreman. In August, 1935, he was appointed signal supervisor at Frankfort, Ind., in charge of all field work on the Lake Erie & Western and Cloverleaf districts, the position which he held at the time of his recent promotion. Mr. Shepard entered the service of the Nickel Plate in February, 1924, as signal inspector and on January 1, 1930, was appointed signal office engineer, holding this position at the time of his promotion to assistant signal superintendent.

William J. Disney, whose appointment as assistant signal supervisor of the Los Angeles division of the Atchison, Topeka & Santa Fe was announced in the March issue, was born at Richland, Kan., on April 27, 1891. He first entered railroad service with the Santa Fe on April 1, 1912, as a lineman on construction work for the Santa Fe Coast Lines signal department at Needles, Cal., and was assigned as line foreman from February, 1913, until October, 1913, being appointed signal maintainer at Seligman, Ariz., on the latter date. From February, 1915, until February, 1921, he served as maintainer at Barstow, Cal. His subsequent career has been as follows: Foreman signal construction, January, 1925-July, 1926; maintainer at San Bernardino, Cal., July, 1926-June, 1930; foreman signal construction, June, 1930-April, 1931; maintainer, San Bernardino, April, 1931-September, 1931; foreman signal construction, September, 1931-February, 1932; maintainer, San Bernardino, February, 1932-February, 1936; foreman signal construction, February, 1936-February, 1937; maintainer, San Bernardino, February, 1937-October, 1937; foreman signal construction, October, 1937-February, 1938, being transferred on the latter date in same capacity to the Los Angeles Union Passenger Terminal, Mission Tower; signal construction foreman, Santa Fe, March 1, 1939-January 1, 1940, at which time he was promoted to assistant signal supervisor, with headquarters at San Bernardino.

E. W. Stone, assistant resident manager, St. Louis office of the General Railway Signal Company, has been appointed resident manager, effective April 1.

Trade Publications

Thomas A. Edison, Inc., announces that a new edition of the educational monograph on the nickel-iron-alkaline storage battery, published originally in 1916, has just come off the press. The new edition was prepared mainly to answer the growing demand for a discussion of the industrial applications of the nickel-iron-alkaline battery and the practical value of its operating characteristics. At the same time, the presentation of the manufacture of the cell has been completely revised, photographs largely taking the place of the descriptive text of earlier editions. The distribution of the monograph, as in the past, is expected to be primarily among educational institutions although commercial users of storage batteries who have use for an elementary text-book on the nickel-iron-alkaline cell will be supplied on request to any of the company's district offices.

The Ohio Brass Company of Mansfield, Ohio, has issued Bulletin 688-H illustrating and describing four different sizes of insulated dead-end brackets of the types ordinarily used in the railway signaling field.

The General Electric Company has prepared a new bulletin (GEA-1546F) on the selection of arc-welding electrodes which is now available. The publication also gives important suggestions on welding technique with different types of electrodes and presents some of the factors influencing their choice. Complete descriptions are given of the 20 types of General Electric electrodes, their applications, sizes, recommended currents, arc-voltages, and identification. Profusely illustrated with application photographs, this 40-page publication contains characteristics of deposited weld metal, charts of joint forms and positions, and a handy estimator for electrode quantities.

The Atlas Press Company has issued catalog No. 40 explaining its No. W-30 attachment for grinding drills. This booklet includes information regarding the mounting operation of this device. Copies can be secured by addressing the Technical Service Department of the Atlas Press Company, 1874 N. Pitcher Street, Kalamazoo, Mich.

James G. Biddle Company has just published Bulletin 1635 describing the "Ducter" Low Resistance Ohmmeter, which measurements of very low resistance, down to one-millionth of an ohm, are made as easily and as simply as are measurements of high resistance by the ordinary "Megger" insulation tester. A battery is used to supply the necessary testing current, and there are no manipulations or adjustments whatever, not even for the voltage of the battery. The result is indicated directly by the deflection of a pointer over a scale. One of the most important applications for the "Ducter" Low Resistance Ohmmeter is in testing air and oil circuit breakers; also switches and relays. These tests provide a simple and practical means for detecting trouble,