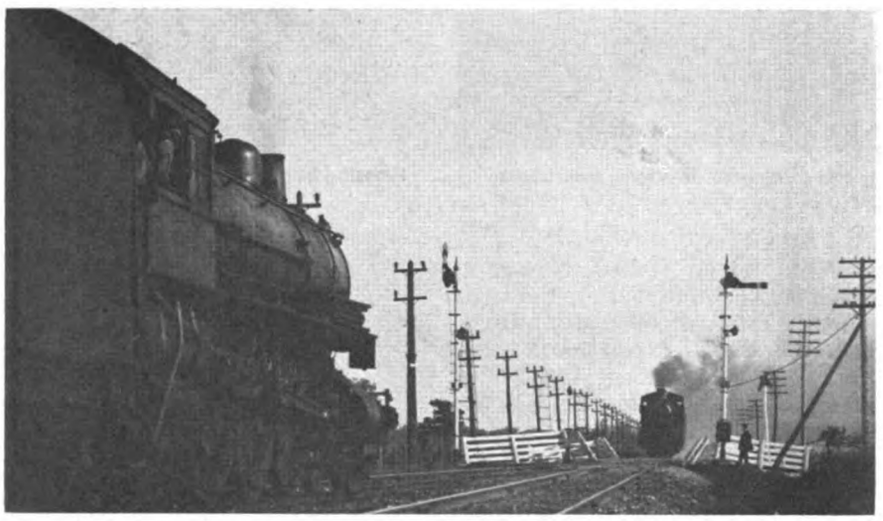
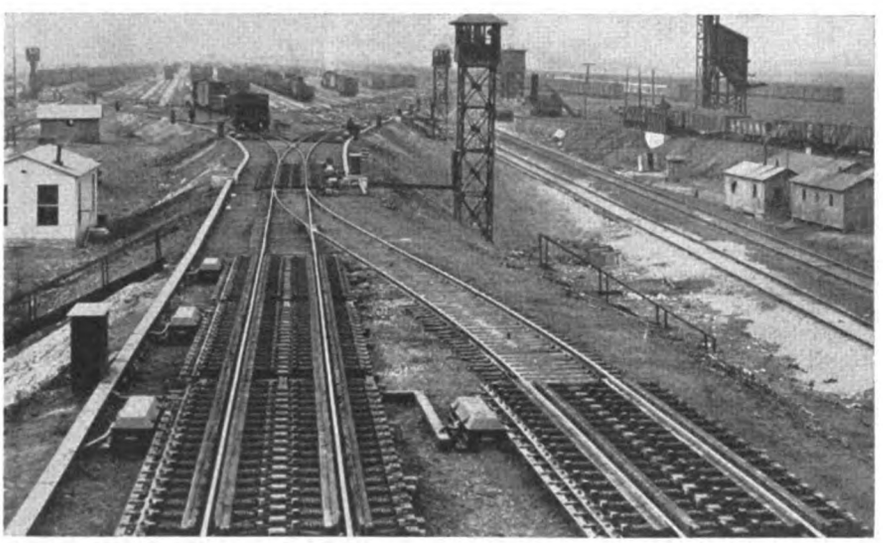
General Railway Signal Company Enters Fiftieth Year



First absolute permissive block signaling was installed on TH&B in 1911



First all-electric car retarders installed on IC at E. St. Louis in 1926

INCORPORATED June 13, 1904, the General Railway Signal Company is now in its fiftieth year. Including predecessor companies, G-R-S has been developing and furnishing signal equipment for the railroads of the world for nearly 65 years.

Back in 1890, Dr. J. H. McCartney of Rochester, N. Y., patented a system of low-pressure pneumatic switches and signals, which was designed to overcome the limitations of mechanical interlocking. Four years later, Dr. McCartney and associates formed a company to market this system, the Auto-Pneumatic Railway Signal Company of Rochester. Reorganized in 1897 to form the Pneumatic Railway Signal Company of Rochester, they installed a low-pressure pneumatic plant at Exchange Street Station in Buffalo in 1898 for the New York Central & Hudson River. In 1902, the Pneumatic Railway Signal Company merged with the Standard Signal Company of Troy, N. Y., which had been furnishing mechanical interlockings as early as 1896. The new firm, called the Pneumatic Signal Company, built a new plant, the first on the present site of the General Railway Signal Company's Rochester plant.

The all-electric dynamic-indication interlocking system, invented by John D. Taylor of Chillicothe, Ohio, was first installed by the Taylor Switch & Signal Company at East Norwood, Ohio, in 1889. Under reorganization in 1900, the Taylor Signal Company was formed in Buffalo, N. Y. As the Taylor interlocking was the only all-electric dynamic-indication system of its kind available, and as it offered unusual safety and facility in train operation, installations both in this country and abroad followed rapidly. Among notable installations were those at LaSalle Street Terminal and at 16th and Clark Streets, Chicago; at South Englewood, Chicago; and at Omaha, Neb.

The Taylor Signal Company of Buffalo and the Pneumatic Signal Company of Rochester were combined on June 13, 1904 to form the present General Railway Signal Company. The next major G-R-S development, absolute permissive block signaling, was put in service in 1911 between Kinnear and Vinemount, Ont., on the Toronto, Hamilton & Buffalo.

In 1923, G-R-S installed intermittent inductive train control on the Chicago & North Western, the first commercial installation of this system. By 1926, the company had made the first commercial car retarder installation, putting all-electric retarders in service at East St. Louis on the Illinois Central.

The Federal Signal Company, acquired by G-R-S in 1923, was originally organized in 1905 in Troy, N. Y., as the Federal Railway Signal Company. It was reorganized as the Federal Signal Company in Albany, N. Y., in 1908; and absorbed the American Signal Company of Cleveland, in 1913.

Continuing its policy of improved

signaling systems, G-R-S, in 1927, developed and installed the first centralized traffic control system. This was placed in service on the New York Central between Stanley and Berwick, Ohio. Pioneering in the development of an all-relay interlocking with pushbutton automatic selection of routes and positioning of switches and signals, G-R-S NX electric interlockings were installed in Bruswick, England and at Girard Junction, Pa., in 1937.

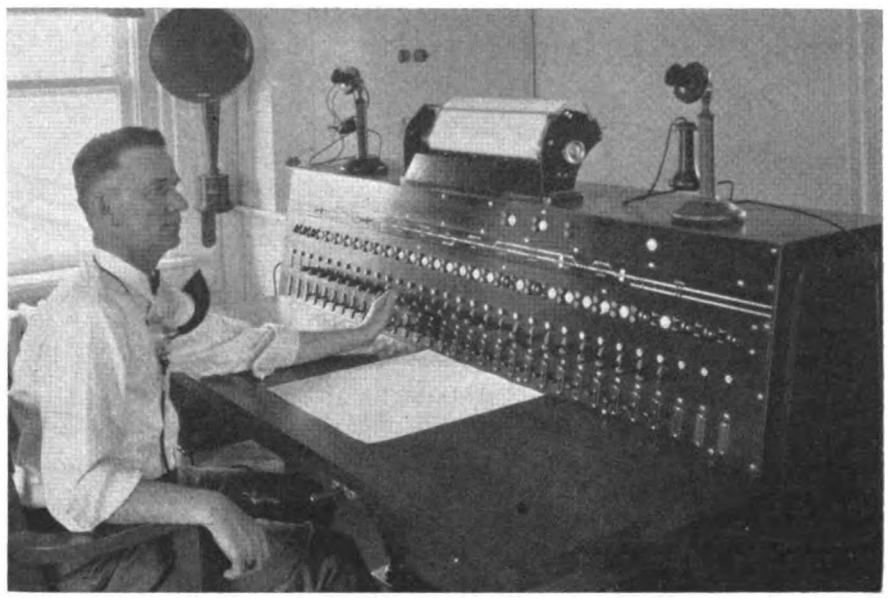
By 1950, G-R-S had developed the first automatic switching system for classification yards, making two installations, one at Markhan Yard on the Illinois Central and the other at St. Luc Yard on the Canadian Pacific. In 1953, fully automatic retarder control was developed and installed at Kirk Yard on the Elgin, Joliet & Eastern. In 1951, a new coded remote control system, called Syncrostep, faster and simpler than previous systems, was developed. It was first installed on the New York Central at Ft. Plain, N. Y.

Along with the increasing use of railway signaling to improve train operation, there has been a continuing growth in signaling research. There are today, more systems, more devices and more techniques to develop. With this fact in mind, G-R-S has expanded in engineering and research facilities. Modern G-R-S signaling developments are making more and more use of the results of advanced researches in high- and ultra-high-frequency wave propogation and in recent developments in the field of solid state physics. Radar and electronic computer principles are already employed in classification yard systems. Carrier frequency transmission techniques are being used to speed the action and to increase the capacity of remote control systems. Transistors are successfully employed in cab signal systems, and frequency generators find as important use in speed control and in wheel slip-and-slide detection devices. Older d-c. techniques, too, are being steadily improved. Complete automatic block signal control systems for either-direction running are now entirely transmitted through the rails themselves.

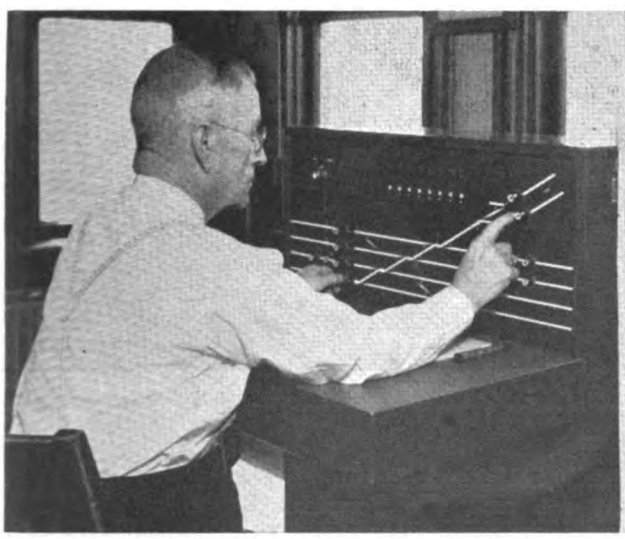
Even relay, motor, and transformer windings are being greatly improved by the use of insulating materials of far higher dielectric strength and much less bulk than were available a few years ago. Today's G-R-S signal engineer is as much at home with oscillographs and wave propogation analysis as his predecessor of 50 years ago was with locking sheets and dog charts.

The company has facilities, in addition to its assembly departments, for turning raw materials into finished signaling devices. Castings are produced by a large foundry which works with gray iron, steel and nonferrous metals. Forgings and heat-treated parts are produced in company shops. Sheet metal forming and welding specialized for the fabrication of control machines, cases, and housings is quite extensive. G-R-S has its own plastic molding, coil winding, and impregnation departments. Well equipped machine shops handle all machining from small parts to large castings.

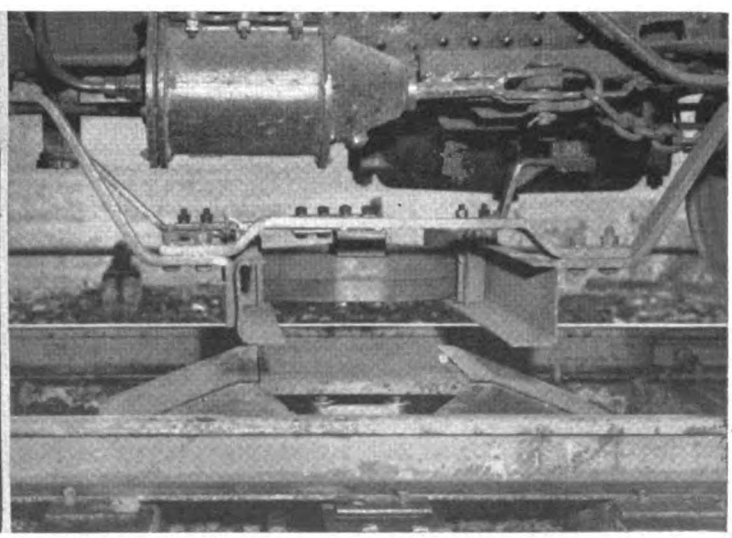
G-R-S supplies railway signaling systems and appliances to railroads all over the world. It has district offices in New York, Chicago, and St. Louis, and is represented in the South American and European countries, Asia and the Far East, South Africa, Australia and New Zealand.



In 1927, first CTC was installed on NYC between Stanley and Berwick, Ohio



NX interlocking installed in 1937 at Girard Jct., Pa.



Electronic train identification installed on Erie in 1952