tive, in other words, to see the signals as the engineman sees them. A good practice, therefore, is for the signal supervisor, assistant supervisor or maintenance foreman to ride locomotives over their territories at regular scheduled intervals. During such trips, as well as in conversation at other times with enginemen, road foreman of engines, and others, various ideas may be expressed which will lead to improvements in signals from the standpoint of enginemen as users of the signaling.

Improved Signal Performance

THE prevention of failures of signal apparatus, which may cause unnecessary delays to trains, is becoming increasingly important in this post-war period when many railroads are inaugurating new fast trains as well as reducing the running time of other important through passenger and freight trains. Therefore, more than ever before, the signal department forces of the railways are now faced with the problems of designing, constructing and maintaining their equipment so that it rarely fails; and if a failure does occur, to correct the trouble quickly, thereby minimizing the number of trains which may be delayed. This statement may seem trite because it covers the whole work of a signal department, but nevertheless when criticized by operating officers, many signal engineers are now being faced with the necessity for new viewpoints in order to improve signal performance.

Study Experience of Many

Many supervisors and maintainers have been in railroad service for years, and some of these men have been on the same territories for extended periods, so that they have acquired valuable information concerning ways of inspecting their equipment to prevent failures, as well as to locate and correct trouble when it occurs. Many of these men have had special cases of trouble not as yet encountered on other territories or on other railroads. A complete explanation of the circumstances involved in these instances would be helpful to other signalmen, especially to those who may not have been in maintainance work very long. The information could be assembled in the office of the supervisor or signal engineer, and then prepared in mimeograph form for distribution to all maintenance forces, to be studied and kept on file.

This information may well be studied also by signal engineers, office engineers, circuit designers and others who are responsible for the practices and equipment as well as construction methods used. For example, if the reports from the field show several signal failures and resultant train delays caused by a certain type of material or construction practices, the necessary corrective measures or changes should be developed and applied promptly, rather than being hide-bound to so-called standard practices.

As an encouragement in this respect, *Railway Signaling* invites readers to submit brief articles, each giving in detail an explanation of an unusual case of signaling trouble, which was located and corrected. Articles of this character suitable for publication, which are received by the editor by June 15, will be paid for at the rate of $5 each.

New Books

Two-Way Radio, *by Samuel Freedman, 506 pages, 9¼ in. by 6 in. Bound in cloth. Published by Ziff-Davis Publishing Co., 350 Fifth Avenue, New York 1, N. Y. Price $5.00.*

This book describes the mechanics and applications of two-way radio for all forms of fixed, mobile and portable communications. It is presented in non-mathematical form and in simple language fully understandable to persons using or intending to use such facilities. The entire radio frequency spectrum, with its present and forthcoming developments, is discussed. This covers all frequency bands between very low and super-high, as established by the Federal Communications Commission. Equipment described ranges from 5 kilocycles to beyond 10,000 megacycles. Also included is a thorough description of induction and carrier-current communication techniques.

The volume consists of 20 chapters and is well illustrated. Chapter 12, entitled "Two-Way Radio for Railroads," should be of particular interest to those in the railway signaling and communications field. This chapter, which covers 89 pages, includes descriptions and illustrations of railroad radio facilities, problems peculiar to railroad radio, the size of the railroad industry, signals versus radio, uses in railroad operations and radio electronic aids to promote railroad safety. The chapter also covers train power supply, automatic volume and squelch controls, the Union inductive system, Halstead induction radio system, the Aireon induction system, medium-frequency space radio communication, very-high-frequency space radio, micro-wave radio communication, functional equipment comparisons and typical railroad communication problems.

Rights of Trains, *by the late Harry W. Forman, and revised by Peter Josserand, 561 pages, 4½ in. by 7¼ in. Bound in cloth. Published by Simmons-Boardman Publishing Corporation, 30 Church Street, New York 7, N. Y. Price $3.50.*

This is the third edition of the book, the first and second of which appeared in 1904 and 1925, respectively. It analyzes the Standard Code of Operating Rules of the A.A.R. as applied to single and double track, and completely explains and illustrates train rules, train orders and transportation problems of the operating department of any American railroad. The book will be invaluable to those in the railway signaling and communications field requiring the use of such information.

Written by the late Harry W. Forman, formerly assistant to general manager of the Western Pacific, one of the greatest rules examiners of his time, the book is based on his experience extending over half a century, and has long been recognized as standard authority. The new edition was revised by Peter Josserand, formerly night chief dispatcher of the Western Pacific at Sacramento, Cal., and was reviewed by rules experts of the Western Pacific, Chicago & North Western, and the Central of New Jersey.