WHAT'S THE ANSWER?

(Continued from page 38)

erage was, again, antenna height.

These two installations are used by our railroad police department. One interesting feature of the entire police system is that our chief police dispatcher is located in Cleveland and he is able to control the base stations at Cleveland, Chicago and Toledo. Police cruisers can talk from any of these three cities to the dispatcher via a combination of radio and telephone facilities.

John E. Schmitt, Communications Engineer, New York Central, Cleveland, Ohio.

A. It is generally agreed that in order for a radio system to effectively direct plant operations, it should provide coverage of the entire district but still permit autonomous operation within each subdistrict.

The shortage of available frequencies to provide this kind of radio service can be partly overcome by employing a suitable selective system within one radio channel. The Milwaukee Road faced the problem of providing radio communications to two entirely different operating departments in the Chicago area on the same RF carrier frequency, without audible interference with each other. The radio networks of the signal and communication supervisor and the police force, both operating in the Chicago area, were separated into two radio network groups coded by a different signal. All transmitters in each network use the same code tone frequency and all receivers reject signals of other transmitter groups. The transmitter is modulated by a continuous audio tone signal in addition to the voice message. Receivers have a tone decoder which opens the receiver squelch circuit when the correct frequency tone signal is received. The coding frequencies are below 300 cycles and are removed by an audio filter before they reach the speaker.

Another problem in congested city areas is the interference from adjacent area transmitters. Some degree of isolation is obtained by using separate transmitters and receiver frequencies. The two-frequency operation has an additional advantage because it eliminates the need for dispatch control points, making it possible to have radio communications between less powerful mobile or hand-carried radio units over an increased distance. Fig. A shows a simplified schematic of the radio communication facility used in our yard installation.

Edmund A. Kerber, Assistant Engineer-Communications, Milwaukee Road, Chicago, Ill.

Identifying Emblems

Q. Does your road place its emblem on flashing light signals at grade crossings as a means of identifying the line to passing motorists? If so, approximately what size are the emblems and where are they located on the signals? What are your opinions regarding the use of railroad emblems in this manner?

A. At highway grade crossings on the Chesapeake & Ohio that are not

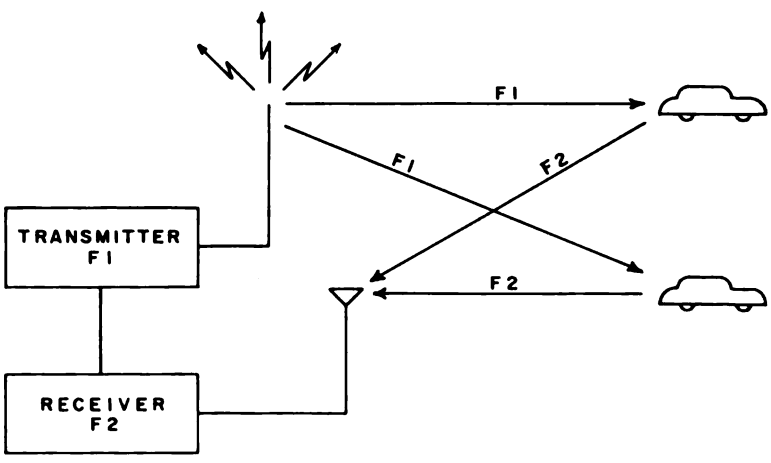

FIG. A SIMPLIFIED SCHEMATIC FOR RADIO RELAY SYSTEM USING SEPARATE TRANSMITTER AND RECEIVER FREQUENCIES

Kerber: Two-frequency radio facility for a yard operation.

rotected by flashing light signals or rossing gates, but are equipped with he usual crossbuck highway crossing igns, the present practice is to identiy our line by a painted or reflectorzed "C&O" sign mounted on the 8" 8" sign post. This sign is 1" x 8" x 4" with six-inch lettering, and is nounted vertically and below the crossuck sign.

Currently, it is not our practice to rovide identifying emblems or initials t protected grade crossings. These rossings, in addition to flashing lights, lso are equipped with numerous and arious adjunct signs, i.e., "Railroad rossing," "Stop on Red Signal," "2 racks," "No Left Turn," etc. The omplexity in some instances, and the ultiplicity of lights, gates, auxiliary ghts, and the numerous adjunct signs ertinent to the crossing protection itelf, dictate the inadvisability of addng any superfluous signs, such as mblems or initials.

To minimize the possibility of confusion, and in an attempt to obtain he optimum in observance of flashing ights and related signs, the employment of signs other than those vital o the crossing protection should be eld to a minimum.

In my opinion, the use of emblems nd/or initials at unprotected crossings s advantageous for reasons of publicty and does not detract from the rossbuck warning signs. However, caution should be exercised in adding hese signs at protected and complex ocations.

Paul L. Wheeler, Assistant Signal Engineer, Chesapeake & Ohio, Richmond, Va.

Can You Answer These Questions?

- What use are you making of automatic telephone dialing devices? Whose manufacture do you use and how many have you in service? What are the capacities of the units you have and how fast do they operate? How do they operate?

- Are you using any of the new plastic lenses in signals, switch lamps or in flashing-light signals at highway crossings? Please describe your installations. What are the advantages and disadvantages of plastic lenses compared with glass lenses?

Please send us your answers to these questions. We pay for all answers when they are published. Answers will be published anonymously if requested. Write Editor, Railway Signaling and Communications, 30 Church St., New York 7, N. Y. Also please send us questions for this department.