Crossing Bells at Flasher Signals

“In your opinion, under what circumstances should a bell be provided as an auxiliary part of the protection where flashing-light signals are installed at a highway-railroad grade crossing?”

Only for Pedestrians

W. J. Eck
Assistant to Vice-President, Southern, Washington, D.C.

A low-toned bell is useful on flashing-light crossing signals only when there is considerable pedestrian traffic over the crossing. Bells are of no use for vehicular traffic.

Bells Valuable at Close Range

Leroy Wyant
Signal Engineer, Chicago, Rock Island & Pacific, Chicago

It is my opinion a bell should be provided at every crossing protected by flashing-light signals, or, for that matter, any other type of protection including gates.

The bells are especially valuable as warning to pedestrians and to vehicles starting up right at the signal or approaching it from a side street, under which conditions the drivers frequently are out of range of the most effective beam of the flashing light. Further, their attention is usually on the business to which they have just attended or on getting their car out into the traffic lane, and they do not observe the flashing lights. On the other hand, an audible signal, such as a bell, forces its attention on them.

I hear a lot about the objections to bells from nearby residents but the fact remains that we have one on every crossing signal on the Rock Island lines. In a very few cases we have had to resort to the “pedestrian” type bell. For this service we have tried varying types of bells, such as the rapidly-vibrating sheep-type gong.

We are now using a bell of the more commonly used type except the gong is about half the size of the standard type. I believe this latter arrangement is most satisfactory where a less noisy bell is required.

Bell Warnings Ineffective

P. M. Gault
Signal Engineer, Missouri Pacific, St. Louis, Mo.

A crossing bell of any kind is a nuisance. As a warning device it is open to the very serious objection of being on the “open-circuit” principle. When horse-drawn vehicles were common it was very effective as a warning, but with the advent of high speed, closed automobiles and trucks its warning can seldom be heard for a distance which will enable the driver to take proper action.

Left to my own judgment, I would seldom use a bell at a highway crossing. The presence of traffic consisting of heavy, slow-moving horse-drawn wagons or vans or pedestrians might justify use of bells if the noise does not become a nuisance to nearby places of business or residences.

Alining Flashers

“On an installation of flashing-light crossing signals with the lenses or roundels equipped to give a horizontal beam spread of 30 deg., how should each of the four separate lamps on a signal mast with back-to-back mounting, be directed? Please use sketch to explain.”

Distribution Curve Indicates Range

E. W. Reich

Wide modern highways with two or more lanes for traffic in each direction, together with the increased speed of highway traffic, are responsible for (Continued on page 600)
the necessity of installing long-range signals and special spread lenses so that signals are visible throughout the entire highway approach.

The arrangement of signals recommended by the Association of American Railroads, and adopted by most roads as standard, in which the signals are arranged to indicate in both directions along the highway, permits the use of one type of long-range spread lens on the front light and a wider type of spread lens on the back light.

The accompanying diagram plotted from manufacturer's curves shows the approximate range and spread of signals in which a 120-deg. spread lens is used on the back light and 30-deg. spread lens on the front light. The location shown is typical for a long tangent approach, and the focusing of signals should be adjusted to meet local conditions at individual locations, allowance being made for curved highway approaches. The ranges for the various degrees of spread shown are approximate values.

With a tangent highway approach as illustrated, the long-range front lights can be sighted from the high-way in bright daylight at a distance of approximately 1,780 ft. from the crossing, and the back lights at a distance of approximately 950 ft. The spread of a back-light beam is such that a good indication can be observed over the entire width of the crossing.

This wide spread is particularly desirable when cars are stopped opposite the signal on the approach side of the crossing, where there are two or more lanes in the one direction and where a car in the right-hand lane might obstruct the view of the signal to the right of the highway.

**Drawing Illustrates Method**

*C. J. Kelloway
Superintendent of Signals, Atlantic Coast Line, Wilmington, N.C.*

The best answer that we can give to the question of how to direct the flashing-light units of a crossing signal having 30-deg. spread lenses, is indicated on the plan herewith. The dotted lines represent the central beams, each of which is directed toward an automobile approaching the crossing at a distance of 400 ft. The back lights are also directed toward these points on the opposite sides in order to obtain the maximum benefit from these auxiliaries. The essential dimensions are shown in the diagram.

### Checking Signal Lamps

"On approach-lighted signal territory where it is important not to shunt the track because of interfering with train operation, what means do you use to check filaments in signal lamps?"

**Use Dry Cells in Testing**

*E. B. Luse
Signal Maintainer, Great Northern, Ephrata, Wash.*

In testing filaments of signal lamps I use dry cells and lead wires fitted with testing clips. The clips are connected at the light socket and the two cells connected in series, giving sufficient voltage to illuminate the filament.

Although this voltage does not give full brilliancy there is usually enough light to indicate, upon close inspection, whether both filaments are burning, in case there are two. Also the lower voltage relieves the eyes of the discomfort caused by looking on a bright filament as in regular signal operation.

By testing signal lights in this manner there is no danger of stopping trains or of tying up interlockings, by using shunts.

**DNL Relay Shunted**

*Vernon C. Cone
Signal Maintainer, Southern Pacific, El Paso, Tex.*

Testing signal lamps in approach-lighting territory without shunting the track is not a difficult operation. For

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