• What's the ANSWER? •

GATE-ARM STRIPE COLORS

"What color combination of stripes on highway crossing gate arms are most effectively seen by vehicle drivers and pedestrians approaching the gates when they are lowered, e.g., black on yellow, black on white, or other?"

Short-arm gates with black and white striping on gate arms

Black on White Long Used

By H. A. FRANKLIN
Safety Engineer
Iowa State Commerce Commission
Des Moines, Iowa

THE use of any color combination of stripes on highway crossing-gate arms, other than black on white, as is provided in A.A.R. Signal Section Drawing 1491, has not been observed by the writer. It is believed that recommended practice should be followed until investigation has determined the desirability of a change. Practically all such gate arms are now provided with lights, which are the governing indication at night to vehicle drivers or pedestrians.

During hours of day-light, both lights and the stripped arm provide the indication to traffic, and it is believed that the present painting practice provides as good an indication as would any other combination of colors, and has the advantage of long use in connection with gate arms and other barriers. If amplification of colors is needed, it can now be provided by the use of paints having reflectorizing qualities.

Depends on Weather and Time of Day

By E. J. SEYBOLD
Assistant Engineer, Signal Department
New York Central System
Albany, N. Y.

FOR over 50 yr., the New York Central has painted crossing gates on both sides with alternate diagonal stripes of black and white. With the more-recently developed electrically - operated short - arm gates, the same practice is followed.

Gates must operate 24 hr. daily under all kinds of weather conditions. If visibility is restricted by snow and rain storms, or by fog, the contrast between colors is highly important. When used on a black background, yellow stripes are more conspicuous than white on a bright, clear day. At dusk, or under adverse weather conditions, however, when

To Be Answered In a Later Issue

(1) *What can be done to insure continuity of end-to-end and train-to-wayside radio and/or inductive communication when trains are passing through tunnels which have, heretofore, been considered as "blind spots"?*

(2) *Where "slow" orders are in effect on account of track or bridge repairs, is it the practice on your road to temporarily change the controls of wayside signals to "remind" enginemen of the slow orders?*

(3) *What is the quickest and most effective way you have found to check line and bias currents of automatic printing telegraph equipment? Explain your method, please.*

(4) *How do you minimize the growth of vines or other vegetation along signal or communication pole-line routes, and prevent same from climbing the poles, guy wires, etc.?*

(5) *What is the most unusual modern fixed wayside signal you have ever seen, and for what purpose is it used? Please explain and send snapshot or simple sketch if possible.*

(6) *In planning a new centrally-located general telegraph office, would you arrange it for reception of incoming messages on tapes to be retransmitted to all offices addressed, or install a switchboard to connect through, so that messages could be sent through directly to all offices of destination? Please give your reasons in either case.*

(7) *What is the best and quickest way, especially at night, to find a partial short on a d.c. track circuit, such as that caused by a fouling bond touching a rail anchor and shorting the circuit just enough to prevent a two-ohm relay from picking and holding up, but which results in no appreciable difference in volts at any point in the circuit when checking with a voltmeter?*

If you have a question you would like to have answered, or, if you would like to answer any of the above questions, your comments will be welcomed. Address: "What's the Answer?" Department, Railway Signaling and Communications, 79 West Monroe Street, Chicago 3, Ill.

it is most necessary that gates be visible, yellow loses much of its effectiveness. In my opinion, the black and white stripes afford the best color combination under such conditions.

In selecting color patterns, another factor to be considered is the number of vehicle operators who are unable to distinguish between various colors. It seems to me that the contrast between black and white is greater than that between any other combination of colors, and therefore, would be more conspicuous to such persons.

Black on Yellow Would Be More Effectively Seen

By W. L. DAYTON
Signal Engineer
Grand Trunk Western, Detroit, Mich.

I FEEL that stripes of black on yellow on crossing gate arms would be more effectively seen. Yellow is used extensively by the highway departments on their signs, both in the country and in cities.

The public knows that to cross a yellow line on the center of four-lane highways, over hills, etc. is a law violation. I also feel that yellow is more outstanding and can be seen farther than white.

Black and White

By W. H. STILWELL
Signal Engineer
Louisville & Nashville, Louisville, Ky.

IN regard to color combinations most effectively seen by users of the highway on approach to crossing gates, it is my opinion that the black and white striping, as approved by the Signal Section of the A.A.R., and as shown on A.A.R. Drawing 1491D, is most effective.

All Arms Being Changed To Black on Yellow

By F. J. CORPORON
Superintendent Way & Structures
Chicago, South Shore & South Bend
Michigan City, Ind.

ALL of our crossings have been normally black on white, with the exception of three crossings which we painted red on white about 10 yr. ago. During the ensuing period, there has been no appreciable reducton in the number of accidents at these particular crossings. However, we feel that they accomplished another purpose, viz: The Baltimore & Ohio Chicago Terminal runs nearly parallel to us and only a short distance away at these locations, so that motorists approaching the crossings and seeing the gates on one railroad down, are likely to overlook the other railroad crossing at such close proximity. We believe that the red on white crossing gates draw the attention of the motorist to the fact that two independent sets of gates are in operation where the adjacent crossing is protected by black on white gate arms.

For a number of years we have felt that black on white gate arms were not plainly visible during times of fog, snow or other adverse weather conditions. Therefore, approximately six months ago we embarked upon a program to change all our crossing gate arms, both black on white and red on white, to black on yellow to increase the visibility of the gate arms and to conform to standard highway color markings on warning signs in our area of operation. We have received favorable comment on gates already completed, and we feel that perhaps black on yellow marking is an improvement over black on white or red on white. At present we are also experimenting with the application of wide-angle yellow Scotchlite tape stripes on black gate arms, but we have not had such arms in service for a long enough period to determine their effectiveness.

Black and Yellow Received Enthusiastic Approval

By E. N. FOX
Engineer of Signals & Telegraph
Boston & Maine, Boston, Mass.

TESTS conducted a number of years ago at selected crossings on our railroad demonstrated that highway crossing gates painted with alternate black and yellow stripes were more readily seen by highway travelers than the black and white-striped gates formerly used by us. We paint the yellow band 24 in. long and the black band 12 in., whereas the painting usually seen on black and white gates consists of alternate black bands, each 16 in. long.

The comments received from various city, state police and traffic officials at the time this color scheme was first tried out indicated a practically unanimous and enthusiastic approval of the change from white to yellow. The visibility of yellow is particularly outstanding in winter when seen against a background of white snow.

INTERLOCKING PLANT HORNS

"At towers and outlying points in interlockings, what is the most effective type of horn, you have found, for calling maintainers or for other signaling purposes—air, straight electric, etc.? What is your practice with reference to the location, installation and control of, and the power supply for such horns?"

Three Different Devices

By H. B. GARRETT
Signal Engineer
Southern Pacific, San Francisco, Cal.

WE use the following listed calling devices at interlockings for the purpose outlined in the question:

(1) Air whistles — Where compressed air is available; operated by electro-pneumatic valve; push button control

(2) Sirens — Federal Industrial Type A weatherproof for 110-volts d.c.; operated by d.c. relay; push button control.

(3) Industrial signals — Benjamin Manufacturing Company, Chicago; 220-ohm coils, .17 amp., 110 volts a.c., 60 cycles; operated by d.c. relay; push-button control.

These calling devices are being used with very satisfactory results, and are generally mounted on the tower building at small plants. At large plants, the calling device is mounted on instrument housings at various points in the plant, in order that the maintainer will be within earshot of the device from any location in the plant.

At Two Locations

By S. W. LAW
Signal Engineer
Northern Pacific, St. Paul Minn.

THERE are only two locations on the Northern Pacific where horns are used at interlockings—one at Garrison, Mont., where a 120-volt a.c. klaxon horn is used to call the maintainer's attention in case of

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