

## Signal Training Bulletin

COMMITTEE G: Education & Training  
Communication & Signal Division, AAR

# E-3 Highway Grade Crossing Warning Device— Wig-Wag Signal

*Approved November 1981*

**Note:** This Bulletin is published because there are many wig-wag signals still in service on railroads. However, it should be noted that the AAR does not recommend installation of wig-wag signals at rail-highway grade crossings.

**Definition:** A device used to provide warning at rail-highway grade crossings.

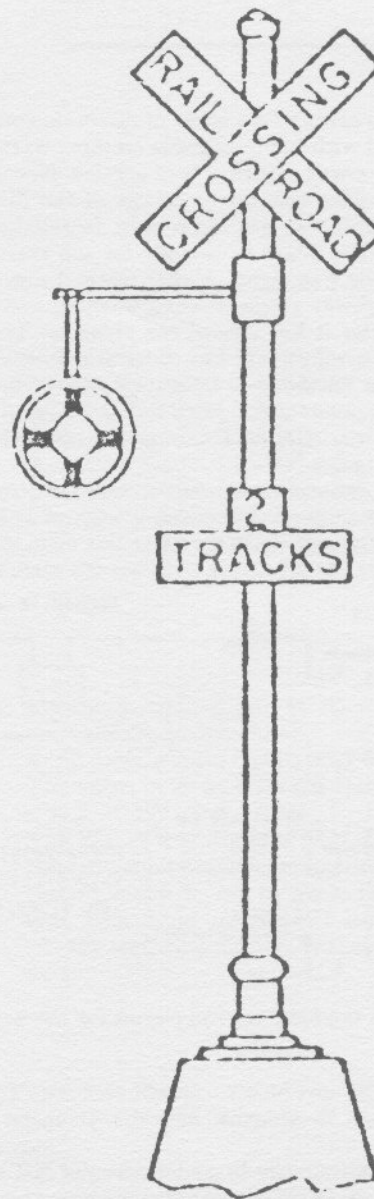
**Symbol:**



**Description:** The wig-wag signal consists of a banner which swings to simulate the warning given by a watchman, a mechanical gong and a red light for night indication. It may also have a RAILROAD CROSSING sign, and a multiple track sign indicating the number of tracks to be crossed. Some states may require a STOP WHEN SWINGING sign.

**Purpose and Application:** A swinging banner, red light and gong provide visible and audible warning for vehicular traffic and pedestrians at rail-highway grade crossings.

**General Information:** Figure 1 illustrates a typical wig-wag signal. The banner swings in the lower quadrant as illustrated but can be operated in an upper quadrant position as well. The red light is located in the center of the banner.



**Figure 1** shows a typical installation of a wig-wag signal with the crossbuck sign and number of tracks sign.

The banner and gong are operated by an electromechanical mechanism shown in Figure 2. Generally, the lower quadrant wig wag is mounted on a bracket and mast as shown in Figure 1 and located at the side of the road.

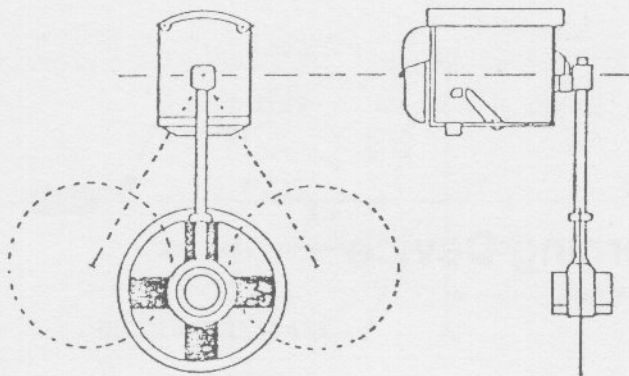


Figure 2 shows a close-up of the wig wag.

**Detailed Operation:** Two types of direction control circuits may be used with highway grade crossing warning systems in which wig-wag signals are in service. New installations and many older systems make use of the directional stick relay circuit. There are some older installations that still use interlocking relays to provide for the starting and stopping of the wig-wag signal. Either method prevents operation of the highway grade crossing warning system by a receding train after it has passed the crossing. The directional stick relay arrangement has wider acceptance since it has circuit design advantages. Operation of the directional stick relay arrangement is described in Signal Training Bulletin E-4, Highway Grade Crossing Warning Device—Flashing-Light Signals.

The following description applies to local control of the wig wag. Figure 3 illustrates the simple control of the light and mechanism through the XR relay.

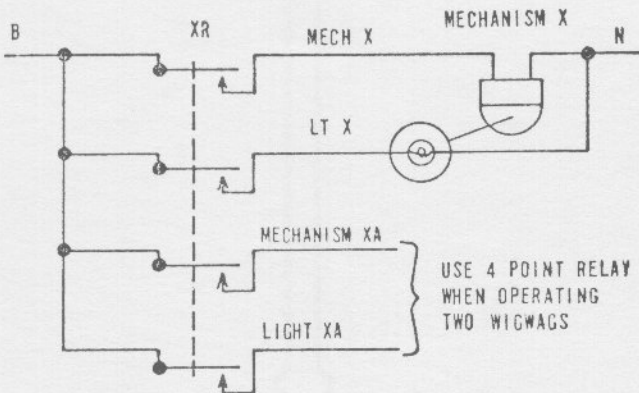
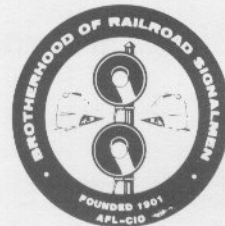


Figure 3 shows the local control circuit for the wig wag.

The light is continuously lit as long as the XR relay remains de-energized. Oscillation of the mechanism is caused by a mechanical pole changing device that pole changes voltage to the armature. The mechanical gong associated with the mechanism is operated by a mechanical tripping device each time the banner swings to the end of the arc.

## Notes:



**NOTE:** This Bulletin is for general information only. For specific applications consult the rules, standards and instructions published by your railroad.