

NMRA RECOMMENDED PRACTICES	
ELECTRIC TRACTION TROLLEY WIRE FROG	
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NMRA RECOMMENDED PRACTICES
RP-5.1 Electric Traction,
Trolley Wire Frog

A. TYPES OF FROGS:

1. RECOMMENDED - The frog shown in Fig. 1 is based on the generally used prototype. The trolley contact wheel (or shoe) is guided through the frog by three precisely shaped and located rails cast on the underside of the frog. In prototype there are left-hand and right-hand frogs; however a compromise type which serves for left, right or Y-type turnouts, suitable for O, S, or HO scales, is commercially available.

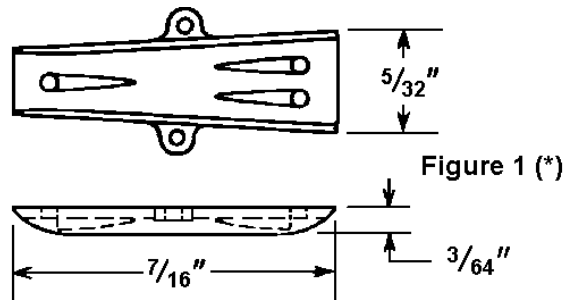


Figure 1 (*)

*Figure 1 drawing is based on Wagner Car Company model B640 Wire Frog (as modified in 1981 for pantograph operation).

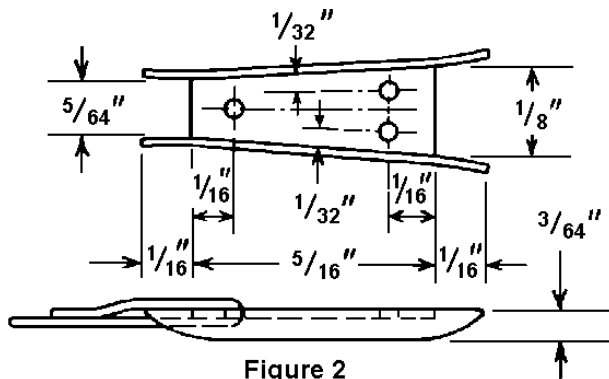


Figure 2

2. Figure 2 shows a type of model frog which has been quite generally used since before the original S-5 STANDARD OF 1946. It depends upon the side flanges to guide the contact wheel into the required outgoing wire. Although generally workable it is less reliable in the guiding function than the recommended prototype-like design.

B. POSITION OF OVERHEAD FROG: The following formulas are RECOMMENDED:

1. For railroad type turnouts: Place the trolley frog about one-third of the distance from the switch-point to the rail frog-point.
2. For street railway type turnouts using curved rail-frogs and no easements, and with curve radius in the range of 35 to 50 feet (as at a street intersection branch): Place the trolley frog at about one-quarter of the distance from the switch-point to the rail frog point.

3. A small offset of the trolley frog from the centerline of the straight route toward the diverging route, as shown in Fig. 3 is

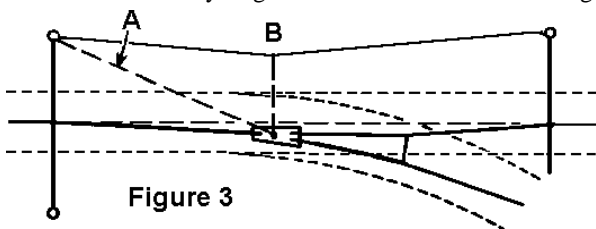


Figure 3

RECOMMENDED; it increases the reliability of the pole in following the correct route. This offset is on the order of 1/8 inch in HO scale and in proportion for other scales. The trolley frog should be stabilized laterally by the use of pulloff(s); most commonly by (A) the diagonal wire to a pole, or (B) a pulloff to a backbone wire, both shown in the drawing.

4. If the angle of the diverging route is sufficiently acute that the overhead wire does not line up reasonably well with the path of the wheel through the frog, then a device like that shown in Fig. 4 should be installed to provide a smooth entrance.

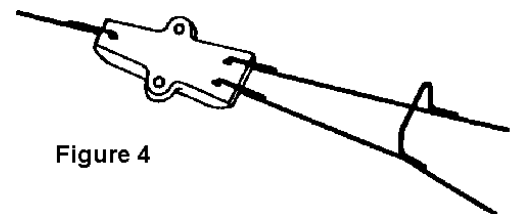


Figure 4

C. OPERATION OF PANTOGRAPH THROUGH TURNOUTS:

1. If dual operation of poles and pantographs is required either of the frog types referenced in Section A. may be used. A leveling device shown in Fig. 5, or a simpler one similar to Fig. 4, should be installed in order to prevent the pantograph from pushing up one incoming wire above the other to the extent of entangling itself. The leveling device may be spaced about 15-20 scale feet from the frog.

2. If only pantographs are to be operated no trolley frog is required, but the leveling device is required. The type shown in Fig. 5 is more representative of prototype practice, and is preferred particularly if a high pantograph force is used.

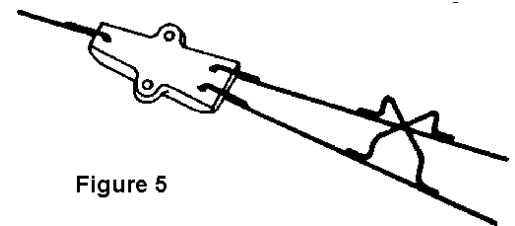


Figure 5