

NMRA RECOMMENDED PRACTICES	
ELECTRIC TRACTION TROLLEY WIRE FROG	
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NMRA RECOMMENDED PRACTICES RP-5 Electric Traction, General - *With PROPOSED* -

It is the purpose of RP-5 to recommend practices in traction modeling which will produce improved operation and/or interchangeability, but which are not sufficiently mandatory to require listing as **STANDARDS**.

A. TROLLEY OVERHEAD FROG:

The type of trolley wire frog modeled after the prototype, in which the trolley wheel rides on rails cast on the underside of the frog, is recommended. The flatpan type frog with side flanges, widely used by modelers, depends upon the flanges to guide the side of the contact device, and is somewhat less reliable in operation.

B. TROLLEY WIRE OFFSET:

On curved trackage the overhead wire should be offset toward the inside to the extent that the trolley wheel is approximately tangent to the wire. This may be approximated by offsetting as shown in "Maximum Offset for Pantograph Operation" in STANDARD S-5.

C. TROLLEY POLE LENGTH:

Trolley pole length should be such that the pole normally operates at an angle between 30 and 45 degrees to the horizontal, preferably at about the midpoint of that range.

D. TROLLEY CONTACT WHEEL:

Rotating trolley wheels (a) facilitate backup moves, and (b) exert a scraping action on the wire which in model practice translates into cleaning the wire. They are strongly recommended in HO and the small scales in order to obtain better current collection which is adversely affected by practical limitations in force against the wire. They are favored for the same reasons by some O-scalers.

E. TURNING RADIUS OF CARS:

1. For operation under railroad conditions: Equipment should be capable of operation on radii as shown in RP-11, classes F, G, and H.

2. For city and interurban type operations:
- a. Prototype models should be capable of tracking the shortest radius curves on which the prototype could operate.
 - b. Freelance models intended for a full range of street railway operations should be capable of tracking curves equivalent to 35' radius (center line of track).

F. COUPLERS:

1. For operation under railroad conditions: Couplers should permit coupled cars to operate on radii shown in **RP-11** classes F, G, and H.

2. For city and interurban type operations:
- a. Coupler heads should be mounted on radial drawbars of such length and radial freedom as to permit coupled cars to operate into and around curvatures as defined in paragraphs E.2.a. or E.2.b. above, without easements.
 - b. The coupler pulling face should extend beyond the endsill, buffer or anticlimber for its entire swing.
 - c. Coupler heads should be at the height:
 - (1) of the particular prototype, or
 - (2) standardized for the particular operation, or
 - (3) specified in STANDARD S-1 for coupling with railroad equipment.
 - d. Coupler heads used for radial mounting should be of types which provide some degree of lateral rigidity when coupled, i.e. they will not collapse to the side to such a degree as to uncouple or interfere during pushing operations.
 - e. "Tightlock" coupler types which have a vertical rigidity when coupled must be attached to cars with a freedom such as to permit twisting and vertical misalignments caused by track irregularities or height mismatch between cars.
 - f. Towbars, sometimes used in street railway operations for emergency pull-ins or for coupling to light trailers, should be of such length as to permit coupled cars to negotiate curves as defined in paragraphs E.2.a. or E.2.b. above.

G. ELECTRICAL: -- *PROPOSED*

1. Motors in traction power units should have both brushes insulated from the frame, or should be capable of easy conversion to that state.

2. Traction motive power units should have current collectors insulated from frame and body.