

# East Penn Traction Club Modeler's Workshop – November 2, 2001

## HO Overhead Construction

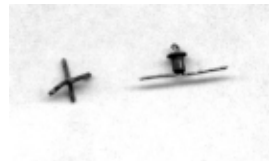
### By Charles Long

**Line Poles** – I utilize steel rod, sold as “piano wire”, that is 3/32” in diameter. This scales out at slightly over 8” in diameter in HO, 3.5 MM to the foot. It comes in lengths of 36” and just last week I bought four lengths from Lin’s Junction on Line Street in Lansdale - actually the tinplate side next door - for \$2.12 including tax.



Using a heavy-duty cut-off wheel in a Dremel tool, cut the hardened rod into lengths about 4-1/4” long. Be sure to use safety goggles because these high-speed wheels tend to shatter and cutting through the hardened steel produces a shower of sparks. You don’t have to cut all the way through, just nick a groove all the way around and the rod will snap. The Dremel tool can be carefully used as a grinder to slightly chamfer one end to drive into the layout base and round over the top end to simulate the pole cap. This will yield about eight poles from each length of rod. These poles will be driven into tight fitting holes through the 1/2” Homasote over 1/2” plywood layout base. Use a thin wheel in the Dremel tool to cut a groove 3/8” down from the top of the pole about halfway through. Bend the end of a length of phosphor bronze trolley wire into a hook and solder into the groove cut into the pole. Cut the free end of the wire flush with the pole after soldering. This will form an eye for terminating the span wire. Clean the phosphor bronze trolley wire with fine sandpaper and use paste type flux to assist with the soldering. A length of 1/8” brass tubing can be cut about 3/8” long and slipped on the pole before it is pounded into the layout board. Lin’s Junction also had the brass tube for \$0.65 for a 12” length, enough for 30 poles. This will simulate the reinforcing sleeve at the base of the prototype poles. Pounding the pole into the layout board so the hook is 2-5/8” above the rail top will provide trolley wire that is about 18’-6” above the rail top.

**Span Wire** – I use fine #30 gauge steel wire, it keeps its shape, looks good, passes through the small holes in the cast pull-off hangers and a single sharp bend keeps it in place but can be readily adjusted. A 1/4 Lb reel was \$1.89 at a Frank’s craft department. However, this span wire cannot be used to reliably carry current. At selected locations you will have to use a length of small gauge telephone type solid copper wire glued along side the pole to act as a feeder span.



**Hangers** – For pull-offs on curves I use the cast brass curved pull-off trolley only hangers. The trick to using these hangers is in initial preparation. Use a small needle file to clean, but not destroy the groove. Use flux and tin with solder before using. For straight runs I use homemade hangers made from a length of phosphor bronze trolley wire bent through either a small brass eyelet or seed size glass bead. A current source of small eyelets is Cir-cuit Concepts where the eyelets are packaged as an accessory for use with the copper ribbon conductors used for dollhouse lighting. Herb’s in Doylestown is

a dealer but were not in stock when I was there last week. However, they did have a large stock of glass beads. A package was \$1.27 including tax, for a premium grade. Again, tin the legs that will be soldered to the trolley wire before use. The trolley wire is soldered to the hangers by cleaning the wire with fine sandpaper and applying flux. The solder applied to the hangers during the preparation phase should be sufficient.

**Tools Required:**

Dremel Tool with Cutoff Wheels  
Safety Glasses  
Pencil Soldering Iron  
Heavy Duty Soldering Iron or Gun

Needle Nose P liers  
Diagonal Cutting Pliers  
Ruler & Marker  
Needle File

**Supplies Required:**

Phosphor Bronze Trolley Wire  
30 GA Steel Wire  
3/32” Steel Rod  
1/8” Brass Tubing  
Solder & Flux  
Fine Sandpaper  
Beads or Eyelets  
Cast Pull-off Hangers

Thanks go to Richard Vible who acquainted me with many of these methods about 35 years ago.