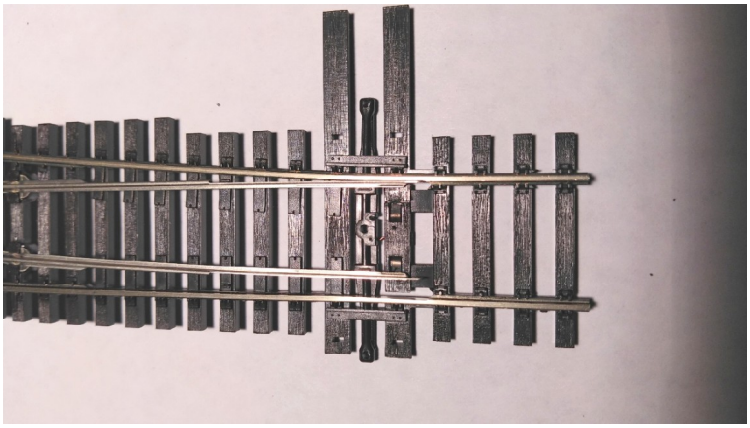
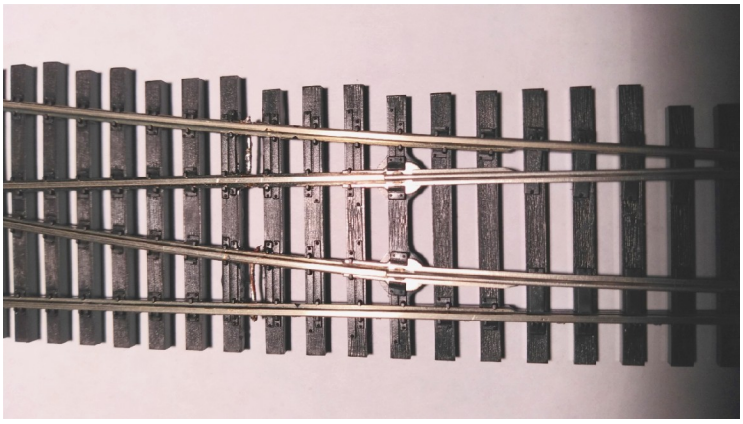
Inspecting and Reinforcing Peco Insulfrog turnouts

The conduct of power through Peco Insulfrog turnouts relies upon:

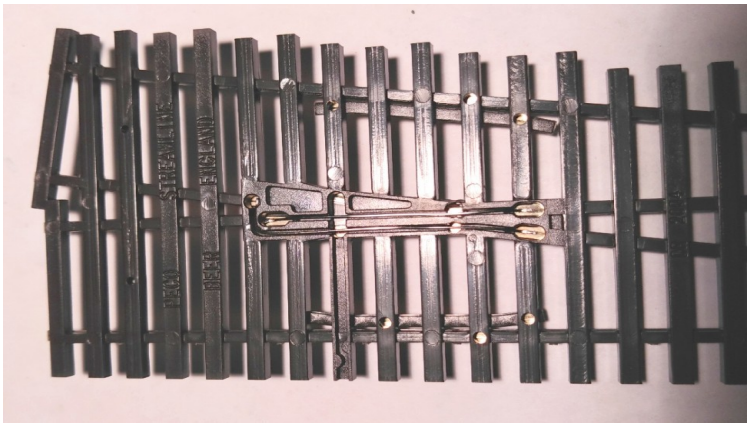
1. Contact of the point rail to the adjacent stock rail when the turnout is thrown,



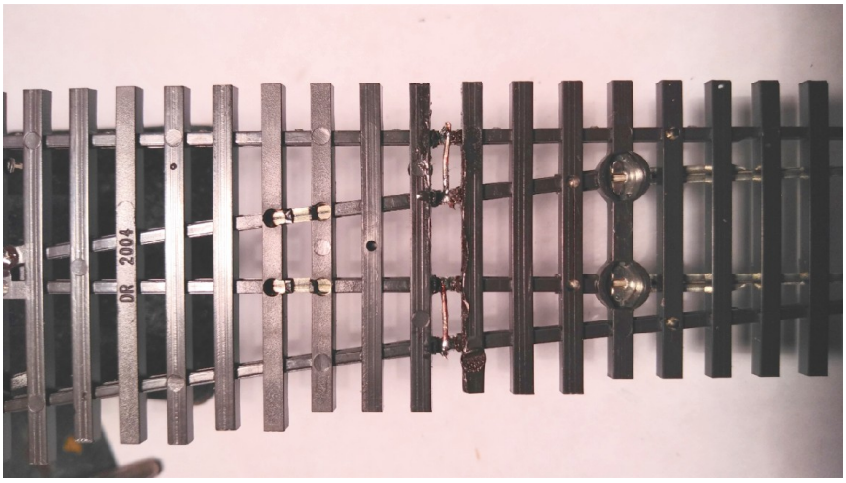
2. Metal-on-metal contact at the pivots where the point rails lead to the closure rails,



3. Jumper wires factory-soldered under the frog.

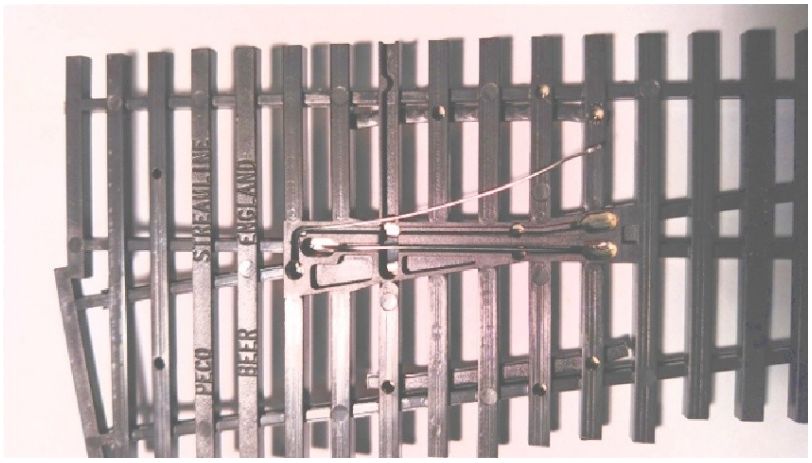


Each is a potential trouble spot. Soldering short jumper wires from the stock rails to adjacent closure rails takes minimal effort and will greatly increase reliability. A Weller 40 watt pencil soldering iron/station with a fine, 1/32 conical tip and fine, “light duty” (.032”) solder work well. Below is the end result.



Inspection of the frog

1. From underneath, visually inspect the factory-installed jumper wires at the frog. Ensure they are secure. DON’T STRESS THEM. THEY POP LOOSE WITH MINIMAL FORCE. See photo below.
   (You can also electrically test the jumper wires by testing the continuity of the closure rail to the rail on other side of the frog with a meter or other device.)

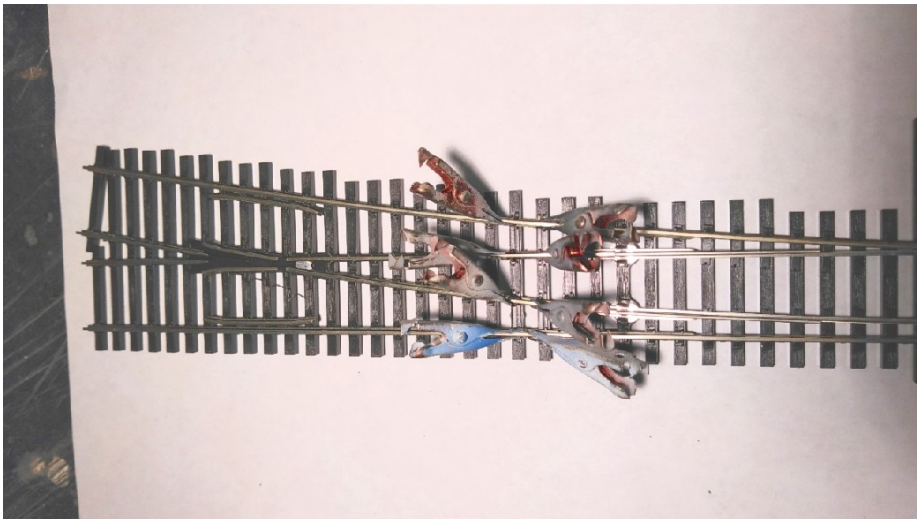


2. If popped out, they can be resoldered with some care and effort. Feel free to call Joel or Steve for consultation or delegation.

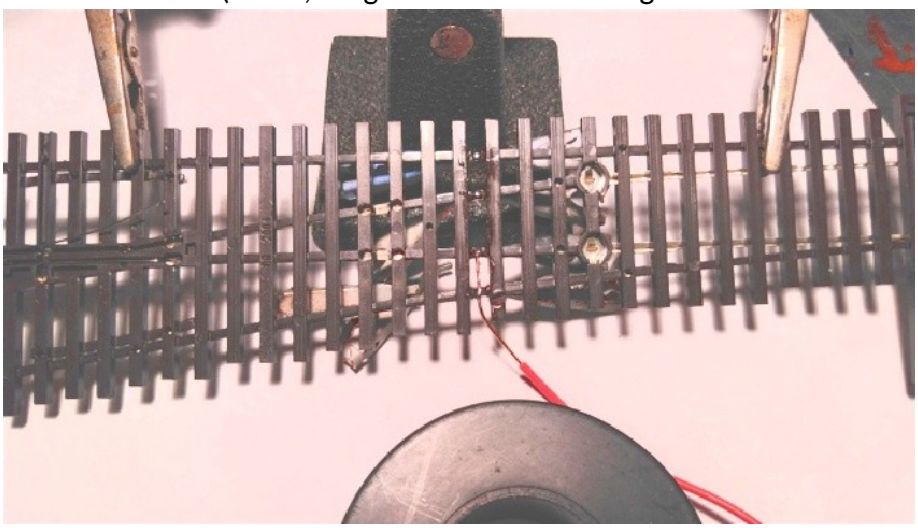
Adding jumper wires to rails

1. From underneath, locate the exposed rail bottom on both the stock rail and its nearby, adjacent closure rail. Clean and brighten the surface with sandpaper or a small file. Touch with a dot of rosin soldering flux. (NOT acid flux.)

2. On the top side of the turnout, attach alligator clips as heat sinks to the rail on both sides of each exposed rail. This minimizes the risk of melting the plastic ties.



3. With a hot, fine-tipped soldering iron, tin the underneath, exposed sections of the rails. Good soldering protocol is to touch the tip to the rail to melt the solder, not to directly touch the solder.
4. Tin a short length of bare solid, small-gauge wire (such as gauge 22 to 26) to bridge the short gap between the two rails. (It is easiest to prepare an over-length piece and then trim once installed.) While holding the tinned jumper wire against the rails, touch the wire with the hot, fine-tipped soldering iron until the solder flows. Continue to hold it still after removing the soldering iron until the solder solidifies and presents a bright, smooth surface. (A dull, rough solder surface is sign of an unreliable “cold joint”.)



5. Do the other side. Test the soldered joints by tugging the wire up firmly. Hold the turnout against a flat surface and tug straight up so as not to risk pulling the rail from the ties.
6. If the joints are solid, trim the excess length.

You’re done! Your turnout is ready to install.