ALL YOU WANTED TO KNOW ABOUT LAYING TRACK BUT WERE AFRAID TO ASK (OR DIDN'T CARE).

BILL OF MATERIALS:

TIES: I use Campbells low profile ties. Cheaper if you can make your own: If I had to start over I would make my own.

RAIL: The cheapest. Any brand as long as it is nickel-silver.

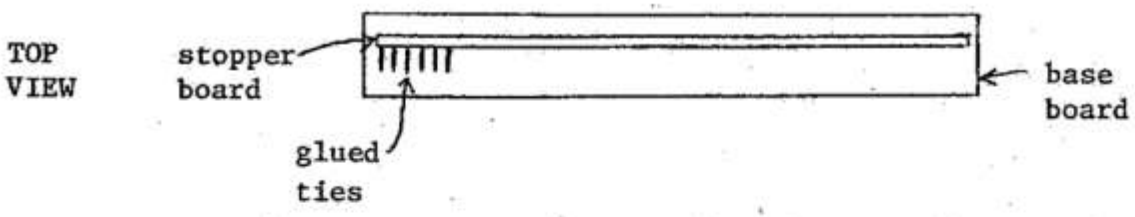
SPIKES: Don't buy just any spikes. I use only Rail-Craft small spikes. These are the only ones I have found where the heads are small enough not to move the rail over when spiking rail down(Kemtron use to make small spikes). I found it very irritating to try to spike rail at the spot I want it only to have the spike head move the rail. This side movement is small but if you want scalop rail (or modeling Con-Rail) then, by all means, use other spikes. I've tried Walther's small spikes but the heads are too large.

NEEDLE NOSE PLIERS: The smaller the better.

STRAIGHT EDGE: I use this only in the yards to give me perfectly parallel tracks.

SAFETY GLASSES: If you don't wear glasses you must wear safety glasses. I've had dozens of spikes fly out from the needle nose pliers and it only takes one going in the wrong direction.

TIE JIG: Made from any piece of wood. I have a 1" X 6" X 3' board. I glue Campbells's tie template on the board, glue ties between the template ties, glue a stopper board(1" X 1" X 3') on one side of the glued down ties and that's it. All you have to do is put the ties in the jig, put masking tape over them, pull them up and roll them up(keep masking tape 1/4" wide for curves).



Warning: to prevent insanity only do this while watching TV or some other equally passive function.

PLASTIC SHEET: Any brand. About 1/16" thick to make the throw bars for the turnouts. I make each throw bar 1/8" X 1.5". Dimensions not critical.

BRASS STRIP: 1/8" X 1/2" X thin. To connect the points.

TRACK GAUGE: I use Kemtrons(a 3 point device). Any type will do. I don't recommend preset radii gauges: They are too restrictive.

NMRA GAUGE: Needed for turnouts.

GRINDER: Needed for making turnouts. The cheapest available will do. I made mine from a Black & Decker grinding wheel and a motor from a washing machine thrown away.

SOLDERING IRON: Any brand or type that produces lots of heat. I use a Wellers 100/140 watt gun.

FLUX: A BUNCH.

SOLDER: Solid core: Tin to lead ratio not critical. The more tin though the more heat needed.

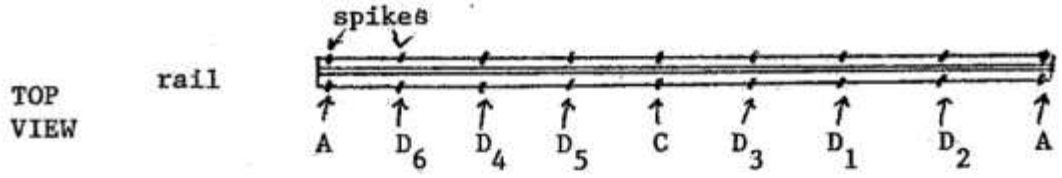
SCREWS: Very small(specific size not critical). Need these to hold points to throw bar.

DRILL: To drill holes for screws mentioned above.
RAZOR SAW: To cut rail.

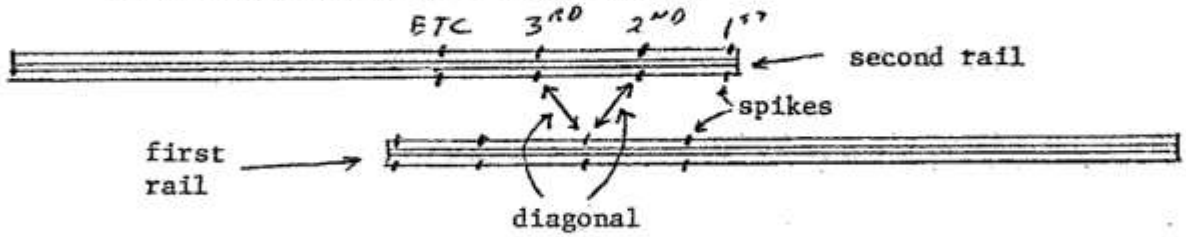
LAYING TRACK

Listed below are the steps I take to lay track.

1. Glue the ties down using white glue.
2. Remove masking tape after glue dries.
3. Stain ties: Just about anything will work if it is diluted: creosote, black paint, cleaning solution after many brushes have been cleaned, etc. If it looks good, use it.
4. Spiking first rail(nearest rail):
   A. Spike both ends of rail about 1/8" in from edge of ties.
   B. Eyeball rail to where you want it.
   C. Spike the center of the rail.
   D. Eyeball rail again for any movement. Split the distance and spike the rail again.
   E. Continue with D above until first rail has spikes every 2.5 to 3 inches. Spikes on every tie are not needed(especially at the price of spikes).



5. Spike the second rail(farthest rail) using the track gauge:
   A. Put end of second rail at halfway mark of first rail. This staggers your joints thus fewer derailments.
   B. Start at one end this time and spike the second rail halfway between the spikes on the first rail(at a diagonal). There is play in the track gauge: I use the extreme width.

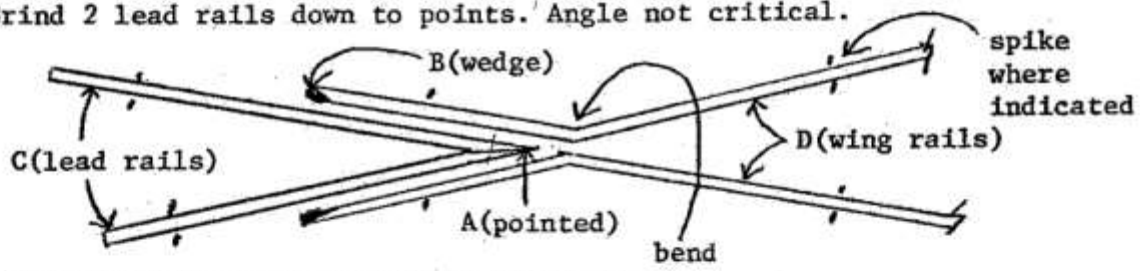


6. After track is laid, use wire(solid) and bend it like this '_/_' to connect the rail. The kink in the wire is for expansion. Do not solder rail directly: Expansion forces are greater than solder joints. 22 or 24 or smaller gauge wire will do.
7. The best time to lay track is in the winter. Always paint sides of rail. I use rustoleum black(why:its cheap). Many people think my code 100 is code 83 due to the painted rail.

MAKING TURNOUTS

I feel this method is extremely easy and fast. It takes me 45 minutes per turnout.

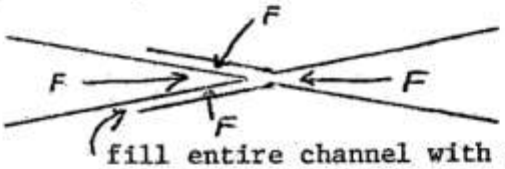
1. Get a commercial turnout in the frog number you want to make.
2. Put ink on top of the frog and make a template on a piece of paper. This is all I use for making the frogs. I do not make left or right handed frogs. They are all the same. I just bend the points to make the turnout I want. I don't recommend using frogs less that #6, even in yards.
3. Making a frog: (Done at workbench on soft pine)
   A. Grind 2 lead rails down to points. Angle not critical.



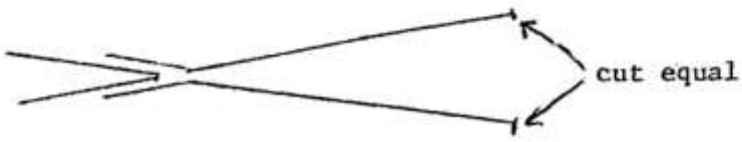
NOTE: base of rail not shown for simplicity.

   B. Grind 2 wing rails to wedges on them for the wings of the frog so flanges of wheels do not pick the end of them.
   C. Eyeball the 2 lead rails on the template and tack spike in place.
   D. Bend one of the wing rails and eyeball adjust until it is parallel to the opposite lead rail. Do same for other wing rail and tack in place. Eyeball from all four end of the rails to insure rails are in line with each other.
   E. Put lots of flux on the frog.
   F. Solder the entire frog including channels.

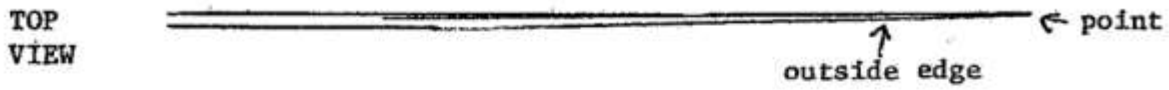
NOTE: all terminology not necessarily NMRA practice.



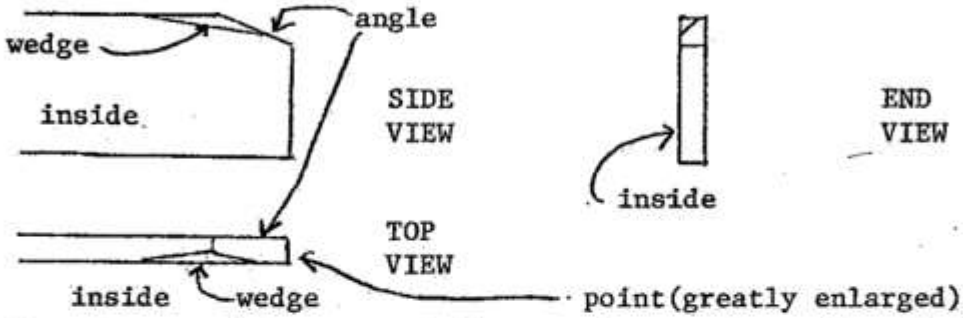
   G. Then use the NMRA gauge and scrape the solder out of the channels for the flanges. This gives you exact RP-25 depth. I've used my NMRA gauge as a tool on 100 turnouts with no damage to the gauge so far (I'm assuming the new gauges are made of the same high quality steel it was made with in 1964). I prefer manually cleaning of these channels because of accuracy and neatness. A power tool is hard to control on a shallow channel. Besides solder is a very soft metal to trim.
   H. Next cut the point ends off so they are equal (Put next to commercial turnout to get length : exact length not critical).



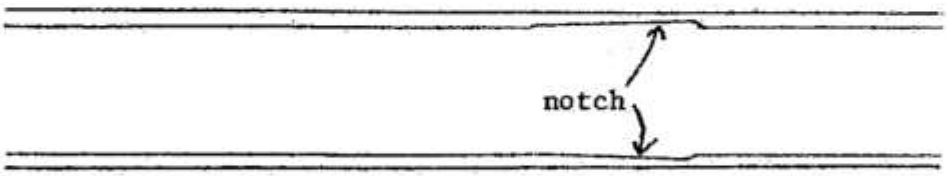
I. Now just grind only the outside of the points down. Taper the points about 3" back.



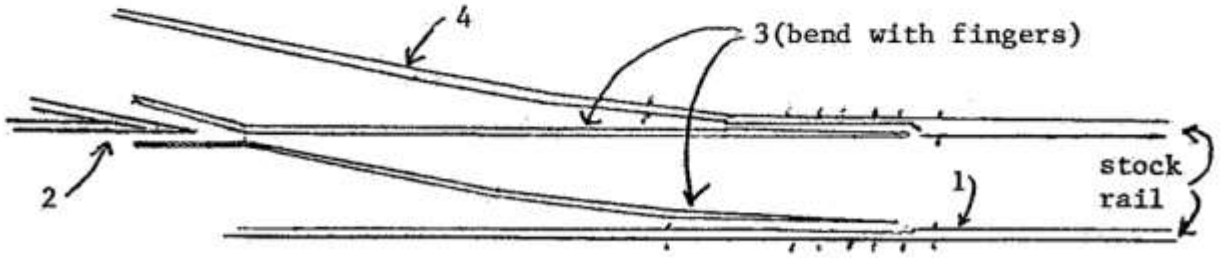
J. Then grind a very small angle off the top of the points and then grind a very small wedge off the inside of the points. This is to prevent the flanges from picking the points.



K. Next is to grind a very shallow notch on each stock rail for the points to fit in.

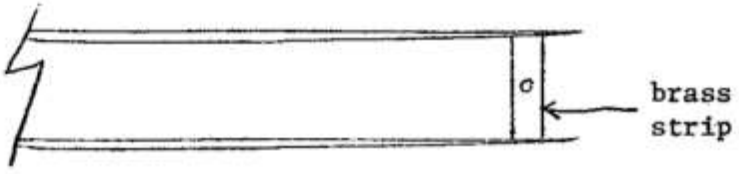


L. Putting the turnout on the layout:
1) Spike one stock rail.
2) Spike frog in using track gauge.

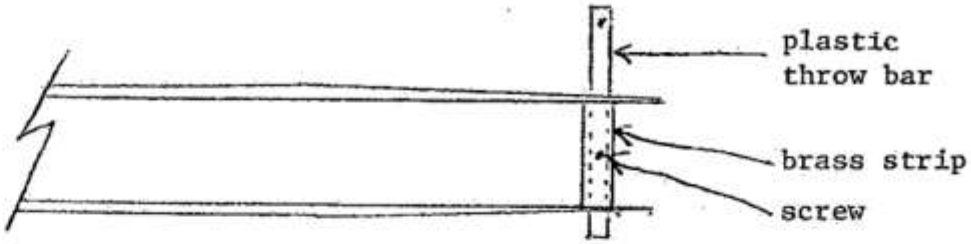


3) Bend points gently with fingers so curve is smooth.
4) Spike other stock rail using track gauge.

M. Cut a piece of brass strip (1/8" X 1/2" X thin), drill hole in center to accept a small screw and solder points to brass strip.



N. Cut plastic strip (1/8" X 1.5" X 1/16") for throwbar and screw to brass strip.



4. You will notice that the entire frog and points are one piece. I find this fast as well as efficient for making turnouts. That's all there is to laying track and making turnouts.

Please make all comments and suggestions in box below.

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G. Samuel Parfitt