

With our help, it's easy to

BUILD A MEMORY!



Welcome to "Build A Memory," sponsored by the National Model Railroad Association (NMRA).

The holiday season and model trains were just made for one another. But what most people don't know is that it's actually easy to build a realistic looking model railroad – all it takes is a little patience and the willingness to spend the time. The result is something you'll have fun with all year long.

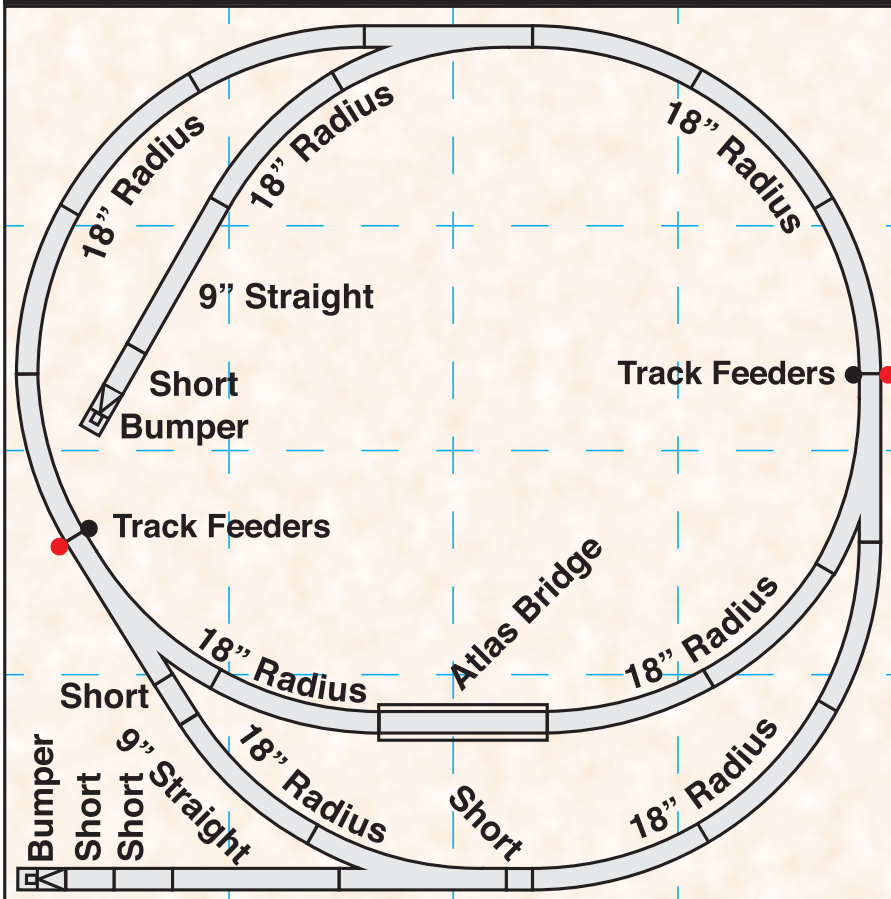
By following these simple instructions, you'll have all the basics you need to get started.

But beyond this booklet, perhaps your most important resource is your local hobby shop. They can help you select the right equipment, answer any questions you have, and get you started off on the right foot.

Another great resource is the NMRA website: www.nmra.org. There you'll find a wealth of information about the hobby of model railroading, including "Beginners Pages" that can walk you through some of the steps outlined in these instructions.

Watch the presentation, ask a lot of questions, pick up everything you'll need, and get started!

Here's what you'll be building



The tools you'll need

- C-clamps
- Caulking gun
- Electric drill & bits
- Jig saw
- Low wattage pencil-type soldering iron (25 watts or lower)
- Nails (small)
- Needlenose pliers
- Paintbrush (2)
- Sanding block
- Saw
- Screwdriver
- 1/2" Spade bit
- Spray bottle
- Tape measure
- Utility knife, serrated kitchen knife, hobby knife or hot foam cutter
- Two-color wire (22 gauge)
- Wire cutters/strippers

This model railroad will give you and your family hours of fun. Although we're building it in HO scale (1:87) the principles are the same for almost any smaller scale. You'll just need to adjust the spacing of the components accordingly. Have fun building it, then have fun running it!

Bill of Materials

Building Center or Hardware Store:

Arrow low temp hot glue gun and hot glue
1 gallon flat latex paint: Dark Eucalyptus Leaf
1 - 1x2x6 pine boards
4 - 1x4x8 pine board
2 - 1x3x8 pine board
2 - Water-based foam board adhesive
1 - 4x8 sheet 2" thick foam insulation board (buy two if you will want hills on your scenery)
12 - 1/4" wingnut-bolt-washer set
1 - 4x8 sheet 3/16" tempered hardboard
4 - Adjustable leveling feet
Several dozen 1-1/4" drywall screws
Cyanoacrylate glue ("super-type glue")
White glue
Bondo All-Purpose Putty
60-40 rosin-core solder
1 can of inexpensive black spray paint

Atlas:

1 - Deck bridge (150-884)

Walthers:

1 - Trestle bridge with deck (1933-3147)
1 - 10th World Comics building (931-807)
1 - Scene Master coupe car (433-1616)
1 - Flexivan trailer (433-1687)
1 - Proto U28B L&N locomotive (920-48654)
1 - 16K tank car (920-100103)
1 - 53' flatcar (920-104102)
1 - Ortner hopper car (920-106004)
1 - Steel coil car (920-105204)
1 - 37' covered hopper Car (910-7103)
1 - Bay window caboose (932-40468)

Woodland Scenics:

Trees:

3 - Hickory (TR1623)
3 - Walnut (TR1622)
3 - Oak (TR 1620)
2 - Fall Beech (TR 1613)
1 - Sycamore (TR 1609)
1 - Birch (TR 1601)

People:

1 - 16 people (A1958)
2 - Misc. freight (A1953)
1 - Wash Day (A1936)
1 - Garage Treasures (A 1928)

Structures:

1 - Corner Emporium - (BR 5024)
1 - Old Homestead - (BR 5040)

1 - Deuces Bike Shop (BR 5045)

Scenery:

3 - HO scale concrete culvert (C1262)
2 - HO scale timber culvert (C1265)
8 - Coarse Turf med green (T1364)
8 - Blended Turf green (T1349)
5 - Blended Turf brown (T1350)
3 - Clump Foliage med green (FC183)
8 - Foliage Cluster med green (FC58)

Automobiles:

1 - Junk Cars (AS5563)
1 - Paul's Fresh Produce (AS5561)
1 - Sign Slingers (AS5556)
1 - Pickum Up truck (AS5534)
1 - Cruisin' Coupes (AS5536)
1 - Rusty's Regret (AS5531)

Terrain:

6 - Plaster cloth packages (C1203)
4 - Dead Fall (S30)

Paint:

1 - Earth colors kit (C1215)

Bachmann:

2 - Hayes bumpers (44591)
2 - Remote turnout right hand (44562)
2 - Remote turnout left hand (44561)
15 - 18" radius curve (44501)
1 - 2.25" straight track section (44513)

Chooch:

2 - Single stone bridge abutment (8440)

Arizona Rock&Mineral Co.

Ballast:

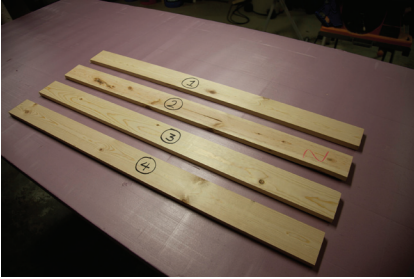
2 - River Bottom rock (138-04)
6 - N scale NP med gray ballast (130-1)
8 - HO scale NP med gray ballast (130-2)

Other hobby store items:

Styrene sheet for roads and streets
Various model paints
Rock castings & molds

NOTE: You'll also need a power pack to run the train. Since there are literally dozens to choose from, enlist the help of your hobby shop to find the one that's right for you and your budget. They can also show you how to wire it to the layout. If any of the items on this list are unavailable, your hobby shop can also help you find similar items that will work just fine.

Let's get started building the benchwork!



1. Cut two of the 8-foot 1x4s in half, to produce four 4-foot long pieces. These will become the frame for the layout.



6. Attach the second foam insulation board to the top of the first with a generous amount of foam adhesive.



2. Use a drill to make pilot holes for the drywall screws. Follow up with a countersink to make sure the screws lie flat

against the boards once the frame is built.



7. Cut four of the 1x4 and 1x3 boards to 48" in length and glue them into an "L" shape. These will be the legs. Drill the bottom of

each and insert the adjustable leveling feet.



3. Create the layout frame by gluing, then screwing the four 1x4s together using drywall screws. Be sure each corner is square.



8. Use C-clamps to hold the legs tightly inside each corner, but do not glue them. This will allow you to store the layout more easily later on.



4. Use a saw to cut the foam insulation board in half, making two 4'x4' pieces. Make sure these pieces are the same size as the

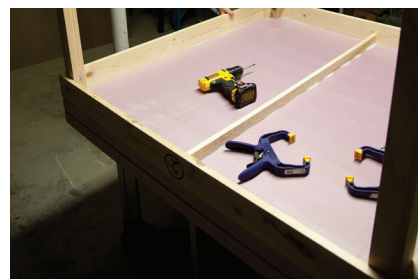
outer dimensions of the frame and trim accordingly. The foam will sit on top of the frame, not inside it.



9. Drill through the frame and legs and attach them using three bolts, adding washers and wingnuts on back.



5. Use the foam board adhesive to attach one of the insulation boards to the frame.

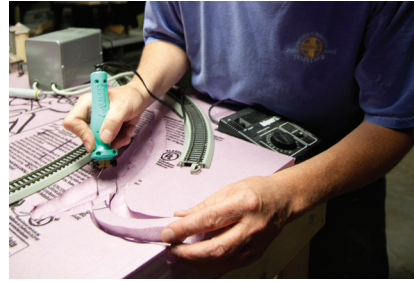


10. Add a 1x2 under the foam across the center. This will keep the foam from possibly sagging and, once drilled (Step 11) will provide support for wiring.

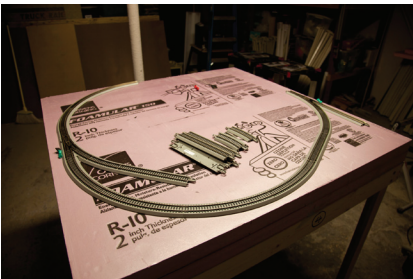
Building the scenery foundation



11. Use a 1/2" spade bit to drill several holes in the 1x2 support. You can later run your wires through the holes to keep them from dangling.



16. Carve out the top piece of foam insulation for the river bed. Use a knife, hobby knife, or hot foam cutter (shown here).



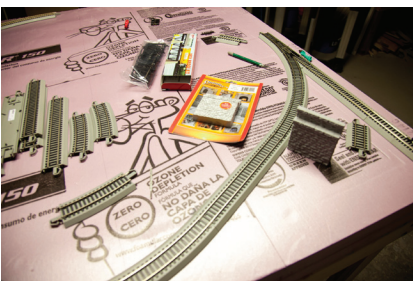
12. Follow the trackplan to begin placing tracks into position. Make sure the tracks fit snugly with one another and are not

kinked. Do not fasten down the track at this time.



17. Double-check the spacing for the abutments by testing with the side of a bridge. The bridge should rest on the

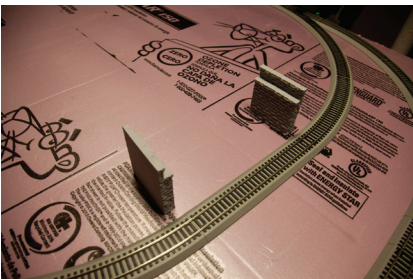
"shelf" of each abutment.



13. Identify all track-related components and their locations. This includes bridges and abutments.



18. If you have chosen to have hills on your layout, use pieces of the second insulation board to make a small hill. Locate the spot where the highway bridge will be located.

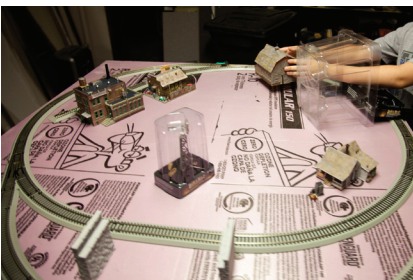


14. Locate the spot where the bridge will be located. Make sure the abutments face each other. The bridge will sit on the "shelf" of each abutment.



19. Carve hills out of pieces of the second foam insulation board by using a serrated kitchen knife, utility knife, or hot foam cutter

(shown here).



15. Plan the locations of all buildings by temporarily placing them on the insulation board.



20. If your hills will include rocks, make several castings using rock molds and plaster (both available at hobby stores).

Let them harden overnight. Carve away any foam insulation to accommodate the rocks' placement.

Building the perimeter and laying track



21. Once your track is in its final position (but not yet glued down), use a knife or hot foam cutter to carve drainage ditches on both sides.



26. Build a spot for your power pack train control on one corner by cutting the hardboard and using the pieces to frame the area.

Add a piece of hardboard as a base.



frame with glue and nails.

22. Mark the location of all track and remove it. Cut four 12"x4' pieces of tempered hardboard and attach them to the sides of the



27. Add a generous amount of caulk to the spots where the track will go. Spread out the caulk with a putty knife.



23. Use a hot glue gun to attach the scenery to the hardboard sides. Be careful not to melt the foam insulation.



28. Carefully connect all the track sections and press each down into the caulk.



24. Use a jig saw to cut the hardboard even with the contours of the foam insulation board scenery.



29. Use a 25-watt soldering pencil and 60-40 rosin-core solder to solder the rail joiners of each section of track together. This

will ensure good electrical contact when running the trains.

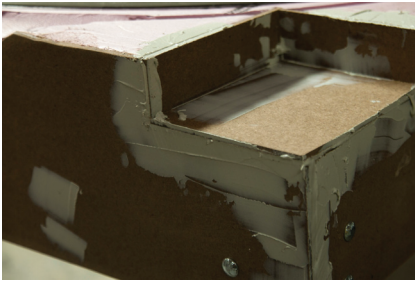


25. Use a sanding block to smooth the edges of the hardboard and foam.



30. Use caulk to seal any areas on the dry river bed. Also seal the edges and the areas behind all bridge abutments.

Adding the ground forms and prepping for scenery



attach rock castings in position. Let the caulk dry.



you want, use masking tape to cover the track.



with plaster cloth.



Kicker" or "Insta-Set") helps it set-up more quickly.



31. Use Bondo All-Purpose Putty to cover any nail holes and fill in any gaps in the hardboard. Sand and paint when dry. Use caulk to

32. Lay the plaster cloth over the contours on the foam insulation, overlapping the edges by 2". Gently spray the cloth to wet it. If

33. Use your fingers to smooth the plaster cloth over the scenery contours before it dries. It's not necessary to cover all of the insulation board

34. Sand or carve the edges of the plaster culverts and assemble each using super-type glue. A super glue "accelerator" ("Zip

35. For added realism, use drinking straws or brass tubing poked through the hardened plaster cloth, to represent drainage culverts.



36. Add additional foam and plaster cloth to build the edges of the roads and scenery up to the track. Cover any holes.



flow better). This is called "wet water."



37. Paint the entire layout (except track) with the latex paint. Let dry. Fill a sprayer with water and two drops of dishwashing soap (to help the water

38. Lightly spray the rock castings with wet water and brush the Earth Color Kit colors on the rocks. Use lighter colors on tops to represent sunlight.



sprayed with adhesive and sprinkled with ground foam.



40 . Add clumps of foliage to hill tops and around rocks. Spread rock talus under rocks and secure it to the layout by spraying with wet

water, then saturating it with white glue diluted 1:1 with water.

Finishing the scenery



diluted white glue.

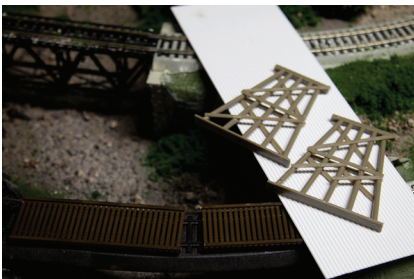
41. Spread ground foam on the layout to represent vegetation. Spray it with wet water and saturate it with



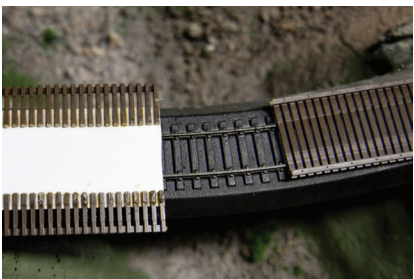
42. Add crushed rock and logs ("Dead Fall") to the river bottom. Spray it with wet water followed by diluted white glue to secure it down.



43. Add vegetation to the rest of the layout using ground foam. Secure it with wet water and diluted white glue.



44. Paint the trestle bents to look like wood. Paint the plastic bridge ties dark brown.



ties. Paint all track on the layout with black spray paint. Wipe paint off the track before it dries.

45. Split the ties in half, glue them to a piece of styrene, and mount them under the track. Add the trestle bents under the



any glue off the track before it dries.

46. Sprinkle ballast on track and roadbed. Brush it off the tie tops, then spray it with wet water and dribble on diluted white glue. Wipe



and trees.

47. Finish off the scenery on all parts of the layout (except the downtown area) using ground foam, foliage clumps, foliage clusters,

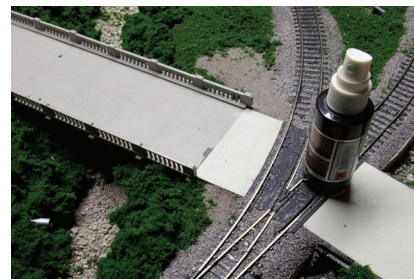


wires to each rail, being careful not to melt the ties.

48. Poke holes through the foam insulation and run a pair of track feeder wires to the sections of the track shown in the diagram on page 1. Solder the



49. Use sheets of styrene for roads and streets in the downtown area.



Use styrene sheets to build roadways on all parts of the layout. Attach small "boards" between the tracks with super-type glue to allow vehicles to cross more easily.

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Finishing the layout



51. Add details like trees, bushes, trucks, cars, junk piles, and figures to make the layout really come alive and look realistic.



52. You can glue down your details for easy storage, or just set them on the layout and move them around as you wish.



Enjoy your finished layout!

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