Styrene

Intro

1. Working with Styrene
   Speed vs. Appearance i.e. lack of wood grain.

2. Cutting Tools and Aids
   a) Chopper - 2 versions
   b) Duplicator
   c) Fixtures for part duplication.
   d) Edge finishing - Xacto Square Gouge Blade/No.3 Handle
   e) Gluing Board with backstop.

3. Material - White Styrene or Gray ABS
   a) Sheet Selection
      .015" - Beat-up hopper car sides, where structure show-through is desired
      .020" - Prototype Appearing car sides - roofs structure show-through
      .030" - Warp resistant car side - preferred roof structure material.
      .040" - Solid card sides - Structural “rigidizing”.
      .060" - Very firm structure material
      .080" - Car floors (40' cars) and sub-roofs
      .100" - Car Floors (50' cars)
      .125" - Where substituting for 1/8" kit wood parts (Plastruct only)
   Note: Large sheets of .080 and .100 are useful for building bases.
   b) Strips - available in inch or HO standards

4. Cements - Plastruct and MEK/styrene mixture.
   a) Plastic Welding – MEK + clear plastic sprues for filler
   b) Lamination of large surfaces - contact cement.
   c) Testors - bottle is the most useful part - save!
   d) Squadron's Green Putty for filling.
   e) Cement Shine - use Pasche Air Eraser

5. Design and Layout tools.
   a) Scales - HO - draftsman
   b) Mylar Layout Film .0005” – the kind they used to letter on when they used to employ draftsmen.
   c) Scaling a photo - use known dimensions to determine others. i.e. 36" wheels, doorways, coupler height on prototype, and board widths.
   d) Computer scanning and drawing aids.

6. Construction Short cuts
   "Never draw to an inside straight"
   - Oswald Jacoby
   a) Box Cars - old time and modern
   b) Tanks - big and small - using styrene pipe

7. Painting - Solvent Based vs. Acrylics
   1) Primer for Opacity
   2) Base Color spraying and masking - use Glosscote for rapid drying.
   3) Getting good yellows, oranges and reds:
      a) Paint white after primer.
      b) Dilute only 25% thinner versus 50% for dark colors.
Working with Styrene – focus on pattern making & mold boxes

1 Sheet styrene is easily cut by scribing and then braking. This works easiest with sheets up to 0.040” thick. Thicker sheets will make you work harder by scribing repeatedly until you get a deep enough line for the material to break easily. A #16 Xacto blade is preferred over the #11 – the #16 will last longer!

2 After breaking the sheet it is necessary to remove the burr caused by scribing.

3 In order to get a good “weld” it is necessary to press the styrene pieces with the glue-softened faces together. When making mold boxes add a “bead” of glue at the seams to prevent leakage.

4 Styrene patterns – When laminating styrene sheet to make various shapes, over-coating is usually necessary to hide the seams of the various layers. Squadron’s green putty or Bondo work very well and can be sanded to a smooth finish.

5 Styrene laminations may be built up to make a shaped pattern. In these case Bondo is preferred since it “machines” well and easy to carve with a moto-tool and finish by sanding.