

# 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

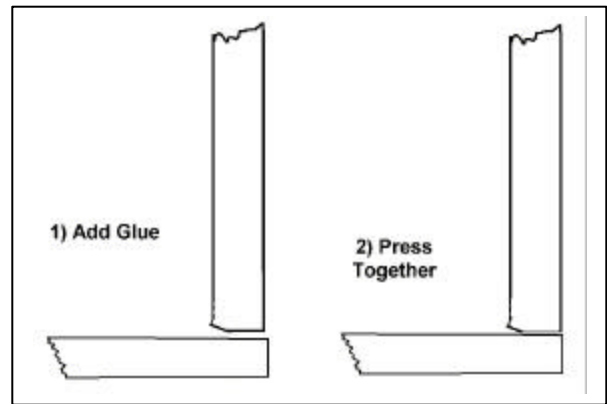
**1** Sheet styrene is easily cut by scribing and then braking. This works easiest with sheets up to /040” thick. Thicker sheets will make you work harder by scribing repeatedly until you get a deep enough line for the material to break easily. A #16 Xacto blade is preferred over the #11 – the #16 will last longer!



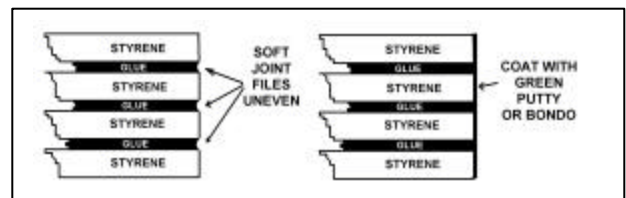
**2** After breaking the sheet it is necessary to remove the burr caused by scribing.



**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.

