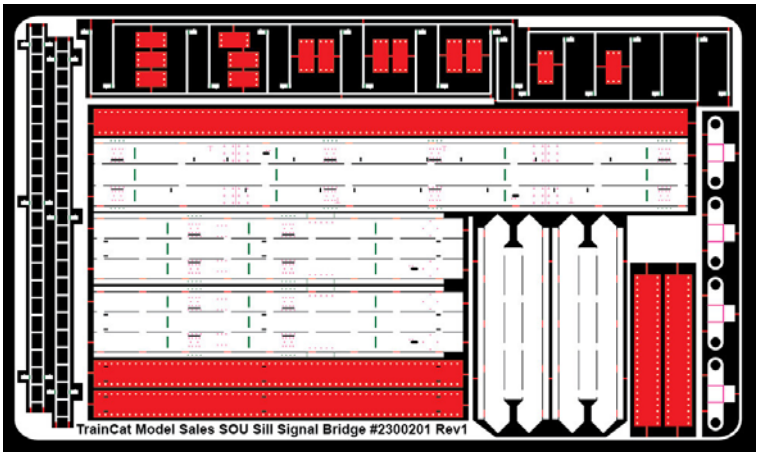
Southern Boxcar Sill Signal Gantry

N-Scale & HO-Scale

Before Starting



PREPARING BRASS The easiest way to remove the brass parts from the sheet they are produced on, is to use rail nippers. The brass is soft and won't affect their future cutting ability. This will reduce or eliminate the amount of filing to smooth the edge. The next best way is with small sharp diagonal cutters that will fit into the small areas between the part and the sheet holding them. *You should always use a file to remove the balance of the tie. This will ensure a perfect fit.*

GLUING BRASS Instant super glues, Cyanoacrylate, CA for short, are very prominent in model building today. They will work perfectly with brass, and they are instant. We recommend a thick CA glue such as "**Zap-A-Gap**" from Pacer Technology. As I have also been building R/C airplanes for over 33 years, I have many airplanes built entirely with CA glue and I can tell you that the wood will break before the glue joint. So it is great stuff! Besides being almost instant, thick CA glues will help create a small fillet and fill small gaps when applied to the inside of joints. Using a toothpick to apply the CA glue works really well for getting the glue into the interior areas and controlling the amount of glue used.

PAINTING BRASS Wash your completed assembly in warm soapy water. If it is really messed up with flux etc. you can clean it with a lacquer thinner first. Baking will set the paint to the brass as well as allowing you to paint over parts of it without the first coat dissolving as you spread on the second coat. *Do NOT bake the model if you used CA glue for construction.* One nice thing about painting on brass, if you don't like the paint job you can use paint remover to get rid of it and start again without hurting the brass.

The Southern Hopper Sill Gantry is comprised of five main structural components and five detail overlays. Look at the image above. The five main structural components are shown in white and the detail overlays are shaded with white rivets.

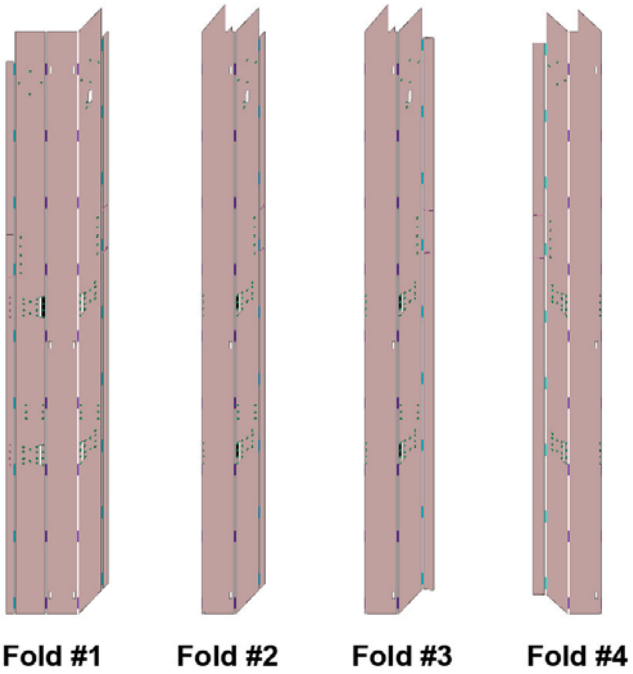
Step #1 – Assemble The Vertical Sills

1) Remove the two Vertical Sills from the kit sheet. Ensure all tie remnants are removed with a needle file. If you have never bent brass before, TMS recommends using an inexpensive bending tool. Check our website for more details. All of the fold locations are open with small tabs connecting the pieces to be folded. The builder should take note that these tabs have a line etched in them halfway through the tab on one side. The builder should make the bend so that the half-etched line is on the inside of the bend.

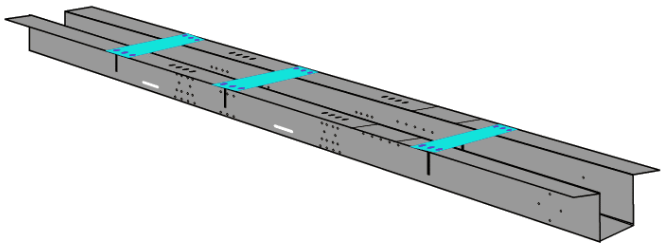
2) The first fold will be between the right side and the outer center of the Sill. Create a 90 degree bend.

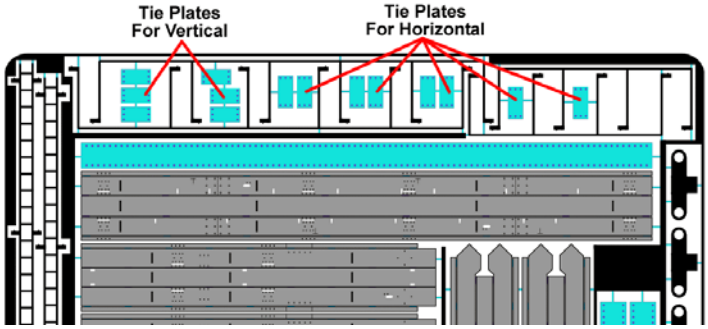
3) The Second fold will be between the left side and the outer center of the Sill. Create a 90 degree bend.

4) Fold #3 and #4 create the inner flange of the Sill. Bend the left & right flanges 90 degrees outward from the sides.



5) Locate the Tie Plates for the Vertical Sill. Remove three from the kit sheet and ensure all tie remnants are removed with a needle file.





On the interior of the Vertical Sill, there are etched slots in three locations. Attach the three Tie Plates on to the Flange at the etched slot location. Ensure the edge of the Tie Plate meets the edge of the Flange. This will keep the proper spacing in the Vertical Sill.

6) Repeat for the other Vertical Column.

Step #2 – Assemble The Horizontal Sill

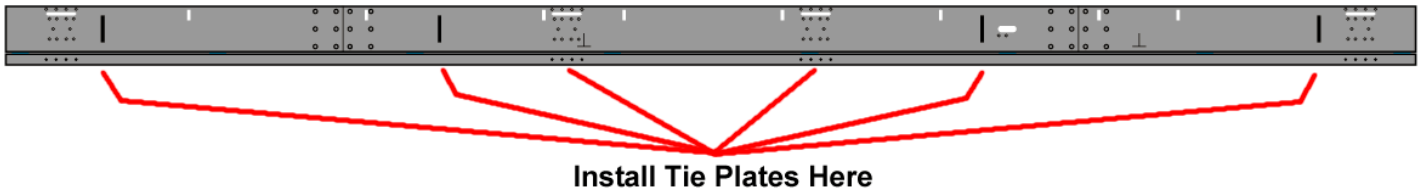
1) Remove the Horizontal Sill from the kit sheet. Ensure all tie remnants are removed with a needle file. The Horizontal Sill will be bent using the same procedure as the Vertical Sills in the previous step.

2) The first fold will be between the right side and the outer center of the Sill. Create a 90 degree bend.

3) The Second fold will be between the left side and the outer center of the Sill. Create a 90 degree bend.

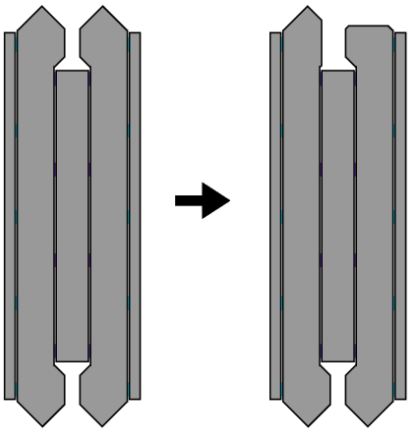
4) Fold #3 and #4 create the inner flange of the Sill. Bend the left & right flanges 90 degrees outward from the sides.

5) Locate the Tie Plates for the Vertical Sill. Remove all six from the kit sheet and ensure all tie remnants are removed with a needle file. Refer to the image below to see where the Tie Plates are to be secured to the Horizontal Sill.



Step #3 – Assemble Diagonal Sill Brace

Depending on the artwork version, the builder may have to modify the Diagonal Sill Brace. Look at the image to the right. If the Brace looks like the one on the left, it will have to be modified to look like the one on the right. Otherwise, skip to sub-step 2.



1) Place the Diagonal Brace on the work surface with the etch line facing upwards. Mark one end of the brace as shown. Using a pair of rail nippers, or similar tool, cut off the indicated areas. Clean with a jewelers file.

2) The Diagonal Brace will be bent using the same procedure as the Vertical Sills and Horizontal Sill in the previous steps. The first fold will be between the right side and the outer center of the Sill. Create a 90 degree bend.

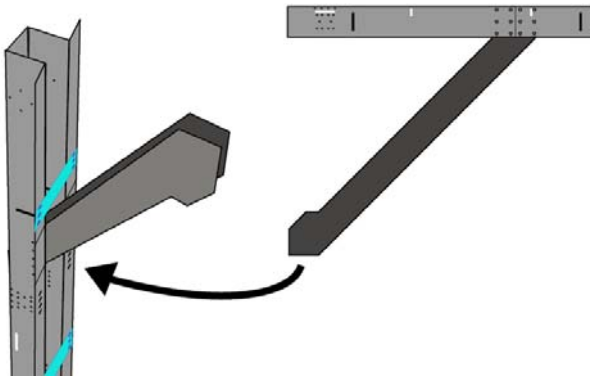
3) The Second fold will be between the left side and the outer center of the Sill. Create a 90 degree bend.

4) Fold #3 and #4 create the inner flange of the Sill. Bend the left & right flanges 90 degrees outward from the sides. The Diagonal Brace does not have any Tie Plates so the Diagonal Brace is fragile. ***Handle carefully***.

5) Repeat steps 1-4 as required for the other Diagonal Brace.

Step #4 – Attach The Vertical Sills To The Horizontal Sill

1) The Flanges at the top of the Vertical Sill do not extend to the end. This is to allow the Vertical Sill to be placed inside the Horizontal Sill. The Vertical should be orientated with the open end facing inward. Ensure the center potion of the Vertical Sill faces outward and it aligns with the end edge of the Horizontal Sill. Using a square to ensure the Vertical Sill is perpendicular to the Horizontal Sill, secure the two Sills together using glue or solder.



2) Repeat step 1 for the other Vertical Sill

3) Insert the Diagonal Brace into the Horizontal and Vertical Sills at the locations shown. The modified end of the Diagonal Brace will be placed into the Horizontal Sill at the simulated splice area. The Diagonal Brace is to be inserted into the Vertical Sill between the etch lines provided on the inside of the Flanges. Secure the Diagonal Brace using either solder or glue.

4) Repeat step 3 for the other Diagonal Brace.

Step #5 – Attach The Detail Overlays & Ladders

1) There are rivet detail overlays provided that will also create the outer flange of the sill for both Vertical Sills and the Horizontal Sill. Remove all three of the Rivet Detail Overlays from the kit sheet and ensure that all tie remnants have been removed.

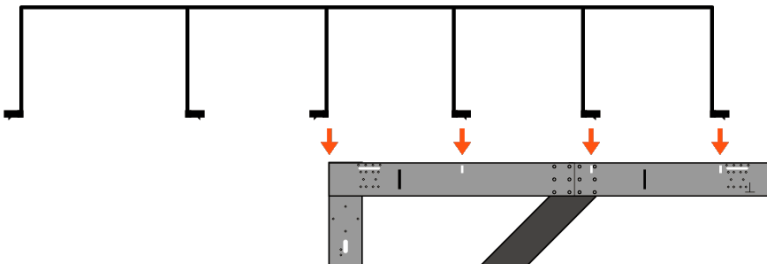
2) Begin with the Horizontal Sill, secure the Detail Overlay to the top of the Horizontal Sill. There are no holes that require attention so the builder just has to ensure that the end edges line-up and the overlay is centered over the width of the Horizontal Sill.

3) The Vertical Sills have six slots for the Ladders, and so do the Detail Overlays. Secure the Detail Overlay on to the Vertical Sill ensuring that the Ladder slots are aligned.

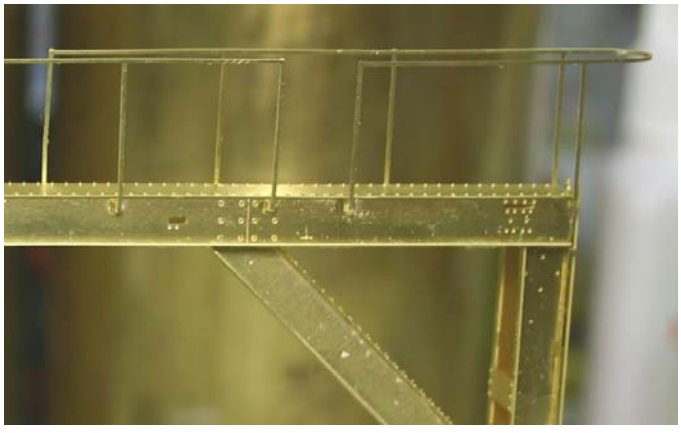
4) Remove Ladders from the kit sheet and ensure all tie remnants are removed. Using tweezers or small needle nose pliers, bend the Ladders Supports 90 degrees to the Ladder. Place the Ladder Supports in the slots on the Vertical Sill and secure the Ladder to the Gantry side.

Step #6 – Installation of Railings

Lay the Gantry assembly down on the work surface. Remove all Railings from the kit sheet and ensure all tie remnants are removed. There are two types of Railings, long and short.



1) Begin with a long railing orientated as shown. Using tweezers or small needle nose pliers, bend the right three Railing Supports 90 degrees to the Railing on the right side of the post. The middle Support is bent 90 degrees on the left side of the post. Place the right three Railing Supports into the slots as indicated and secure. The middle support is secured to the side of the Gantry at the top. Bend the left Railing Support 90 degrees on the left side of the post.

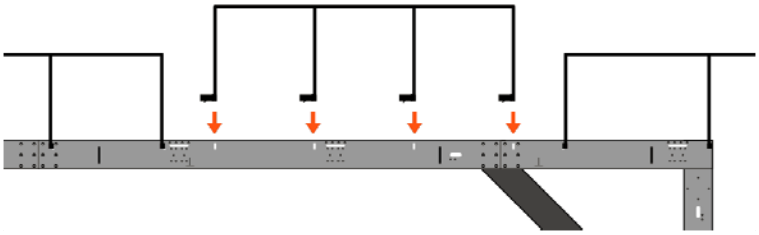


2) Carefully turn the Gantry assembly over. Gently bend the railing back over creating a loop-back in the railing. Using a 1/4inch or 5/16 inch dowel/rod is helpful in creating a nice bend. Secure the end Railing Support into the first slot and the next to end Railing Support to the Gantry side after bending. See image for reference

3) Repeat steps 1 & 2 for the other long Railing.

4) Using tweezers or small needle nose pliers, bend the Railing Supports 90 degrees to the short Railing on the left side of the post. Place the Railing Supports into the slots as indicated and secure.

5) Repeat step 4 for the other short Railing.



Step #7 – Building the Signal Heads

The Signal Heads are provided as a convenience to the modeler. The structure for working signals are included, but the electronics are not provided and are left to the modeler to accomplish. Begin by deciding which Heads are to be installed on the cantilever. Remove these from the kit sprue and remove all remnants of the ties. Also remove the appropriate number of Sun Shields from the sprue and remove all remnants of the ties.

Using the provided 3/32" tubing, form the Sun Shield into a curve. Place the curved Shield in the curved slot on the Signal Head. Ensure that the shield is perpendicular to the signal head and secure using either glue or solder. Repeat for all shields required.

Remove all tie remnants from the Head Attachment Brackets that were removed from the centers of the Body's vertical columns in the first step. The flat end of the Attachment Bracket will go into the half-etched slot on the rear of the Signal Head. Secure two Attachment Brackets to each Signal Head ensuring that the two post holes are aligned and vertical to the Head.

Cut a length of the provided 3/32" tubing as required to mount the Signal Heads. Also remove all tie remnants from the Signal Pole Bracket. Fold the Bracket sides on the etched fold lines and attach to Cantilever in desired location. Secure Heads to Signal Pole and then the Signal Pole to the Pole Bracket. The optional Platform may be added to the bottom of the Signal pole mounting to the Cantilever.