RESIN CAR WORKS
RCW
P.O. BOX 42
BYRON, IL 61010
Freight Cars of Every Description

IC 40-foot, 29000 series, 1944 modified AAR Boxcar Mini-Kit #5.01

The prototype

From April 1946 through November 1948, the Illinois Central constructed 3,000 all steel boxcars at their Centralia, Illinois facilities. The cars had an inside length of 40' 6", an inside height of 10' 4 ½", and an inside width of 9' 2". As cars built to the 1944 AAR standards should have had a 10' 6" inside height, these slightly shorter cars are considered modified 1944 AAR cars. The cars were rated at 40-tons and had a capacity of 3863 cubic feet. The 1946 and 1947 cars were built using 4/4 Improved Dreadnaught Ends (IDN) and raised panel Murphy Roofs. Somewhere within the 1948 builds, the ends applied became r +3/4 and the roofs installed were now diagonal panel Murphy Roofs.

Focusing on the 500 cars built in 1946, they were equipped with 7-panel Superior 6' doors, ASF A-3 trucks, Miner handbrakes, and metal US Gypsum (400) or Morton Mfg. (100) running boards. The cars were number 29000-29499.

For the 1000 cars built in 1947, they were equipped with 7-panel Superior 6' doors, Barber S-2 trucks, Universal (500) and Ajax (500) handbrakes, and metal US Gypsum running boards. The 1947 cars were numbered 29500-30499.

The 1500 cars built in 1948 had several changes during the building process. The group had both 7-panel Superior and Camel style doors, ASF A-3 trucks, Universal (750) and Ajax (750) handbrakes, and both Apex (1000) and Morton (500) metal running boards. At some point during the build, the ends were changed from 4/4 Improved Dreadnaught Ends to r +3/4 Dreadnaught Ends. Similarly, at some point the Murphy raised rectangular panel roofs became Murphy Diagonal Panel roofs. If modeling a car from the 1948 builds, prototype photos will be needed if attempting to apply the correct types of equipment. The cars were numbered 30500-31999.

The cars were initially painted #11 Maroon for the sides and the ends, Milar black car cement used on the roof and underframe, trucks painted black, and car stenciling white. During 1947, the *Main Line of MID-AMERICA* slogan was adopted and it appears on some of the 1947 builder photos. All the 1948 builds had the slogan applied when built. For all of the 1946, 1947 and 1948 builds, the road name and reporting marks were all 7" tall and 1" lines appeared below the road name and below the car numbers.

Car 29110 was one of the 1946 builds. M. D. McCarter photo circa 1946. Location unknown.

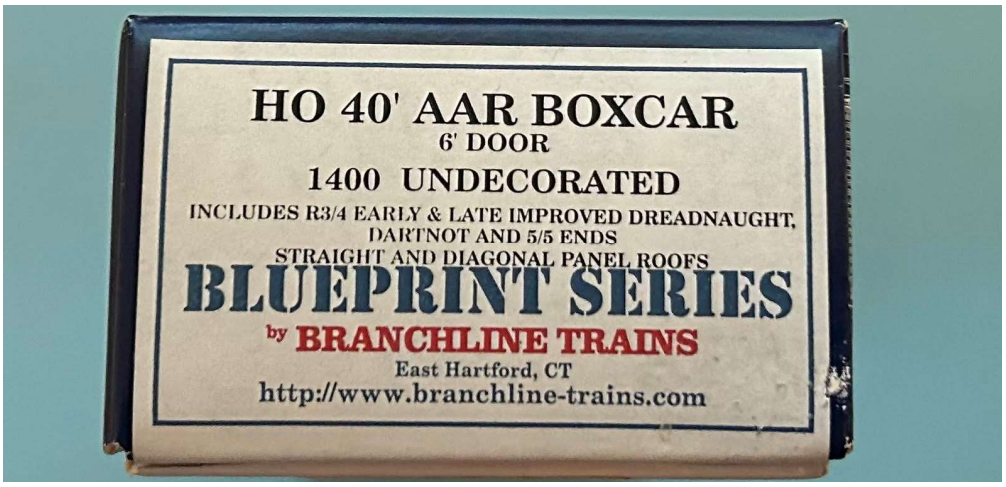
Car 29593 was constructed in 1947. IC builder photo. Centralia.

Taken from an ad for Youngstown Doors in the 1949 Car Builders Cyclopedia, car 31171 provides an example the Improved Youngstown Door used on some of the 1948 builds.

Mini-kit for 29000 series cars

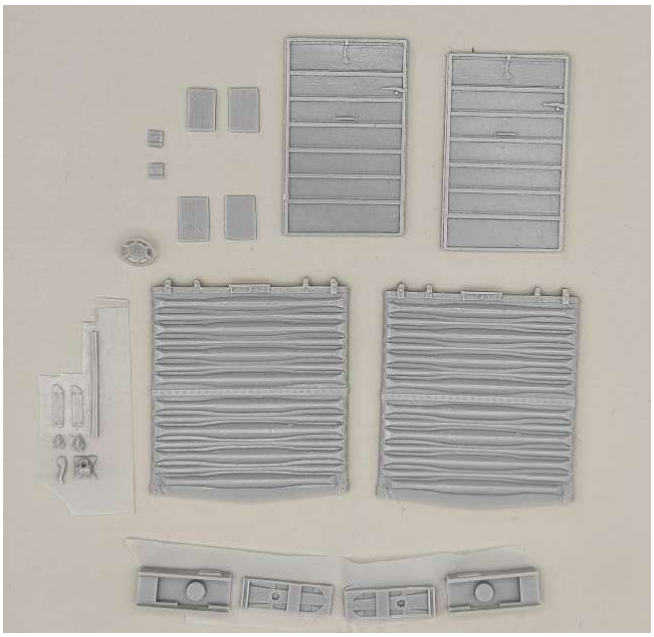
The Resin Car Works mini-kit is comprised of a group of cast resin parts and Plano ladders and running board to convert a standard Branchline kit into a more accurate representation of the 1946 or 1947 version of these cars (a 1948 version could also be built using different ends and roof pieces). Also included is a Tichy AB brake set, turnbuckles, and IC decals. The cast resin parts, and the Plano products are pictured below.

The Plano running board was removed from its packaging when placed into the mini-kit box.



The Branchline kit used is up to the modeler. Either an undecorated one or one with a road name could be used. Additionally, the bodies available from Yarmouth can also be used. The only requirement is that it is a 40’ car with a 6’ door opening and a rectangular raised panel roof for the 1946 and 1947 builds. Multiple kits were built covering the 1946, 1947, and 1948 cars. The majority of the description below covers a mini-kit built for a 1947 prototype. Multiple steps are shown to assist the modeler, but the ultimate choice of the parts to use rests with each individual modeler.

The first step in building the kit was to deflash the resin parts. Some of them are very small, so a handy container for their storage is helpful. The parts from the Branchline kit can be used for detailing the car, so the build notes mention that, and the modeler can decide which available parts to use.



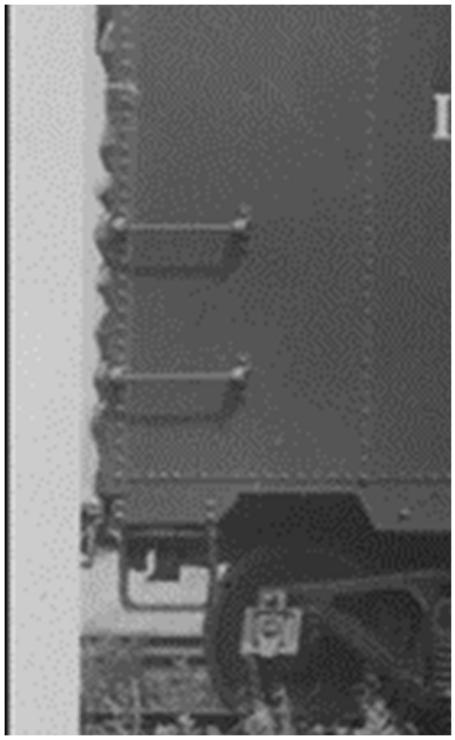
Resin parts include the 7-panel Superior doors, the larger placard boards (four) and smaller route card boards (two), a brake wheel, the car ends, and coupler pockets. The smaller parts are noted below.

These small parts include: the new sill tabs at the sill step attachment (four supplied – one for each corner); two retainer valves (one needed); power brake housing and brake handle; and brake component support bracket.

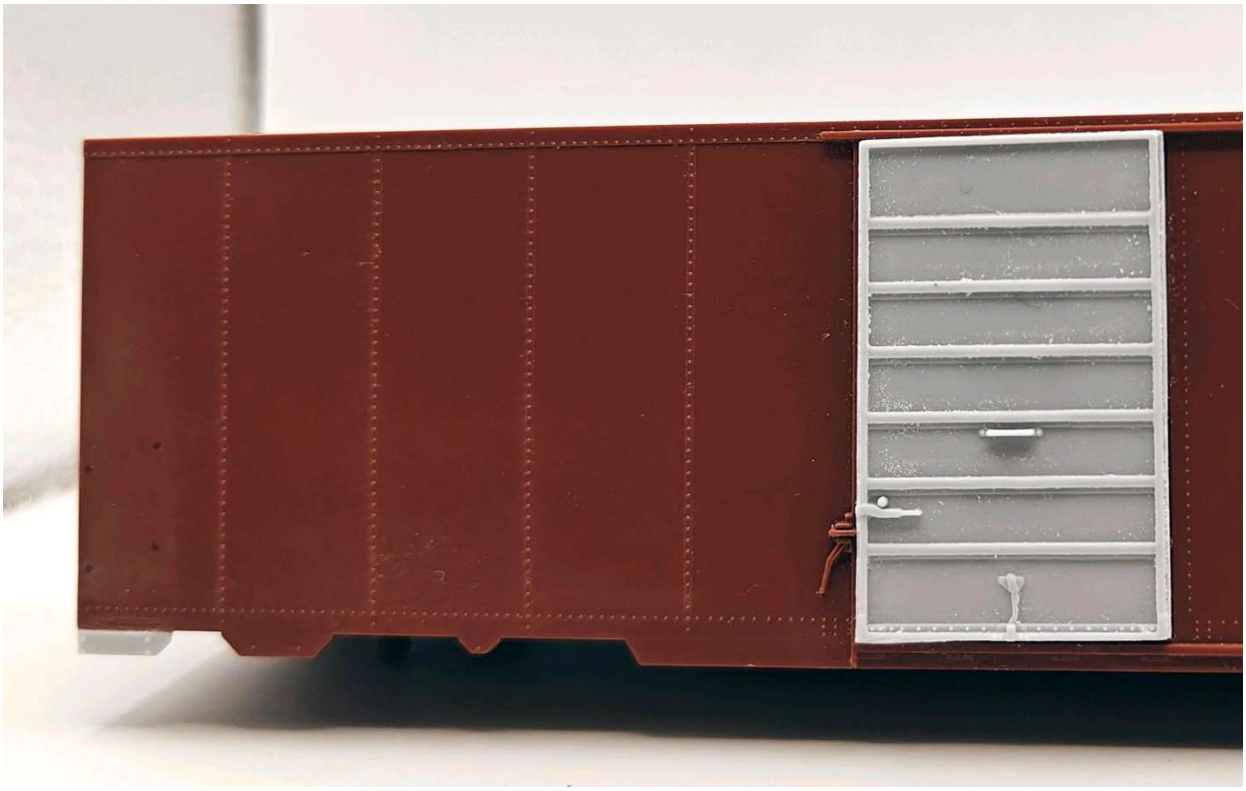
If using the supplied coupler boxes (highly recommended) rather than the Branchline kit ones, you will need a pair of Kadee #158 whisker couplers. Also, the center sill extensions on the car floor and the underframe will need to be cut back to the bolster.

After removing that material, the underframe can be glued to the floor – note that there is a right and wrong way to do so. Match the brake cylinder pad to the support molded on the floor. This will also create a B end to the car which should be noted.

If using the resin sill tabs, they should be added next. Throughout the build, ACC is used to glue resin to plastic and plastic liquid cement is used for the plastic-to-plastic joints. Occasionally, canopy glue is also used to provide an initial bond and to join dissimilar materials.



Remove the cast on tabs and replace with the resin tabs. Note that the tabs are shaped for a right end or left end placement. The prototype photo here shows the proper shape of the tab. Also note the placement of the prototype grab irons with the left bracket attachment resting on the rivet line.

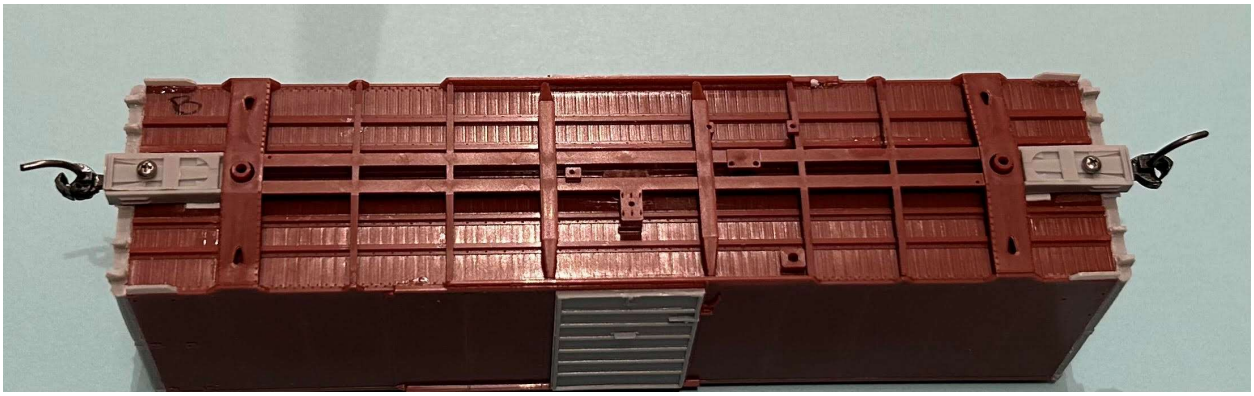


The doors can also be added at this time – glue them from the inside of the car with ACC.

The resin ends were attached to the car body next. To properly align the ends, the roof was placed onto the car body. Do not glue it in place. The ends should fit snug up against the roof and align with the sides of the car body. Also, the bottom of the ends should be flush with the car body ends. When aligning the ends, a small amount of *Formula 560* canopy glue was used to tack the resin ends to the car body. Once satisfied with the fit, the roof was removed and the holes in the ends of the Branchline car body were used to apply ACC from the inside of the body.

Returning to the bottom of the car body, the resin coupler pockets were attached. The lids and boxes were joined together, and a starter hole drilled through both. This hole was then enlarged with a #54 drill bit. This ensures a continued match when they are cemented to the car body.

A small .005” scrap piece of styrene was used as a shim to level the coupler assembly. Once the coupler box was glued in place, another starter hole was drilled into the body itself and then also enlarged with a #54 drill bit. The lids were removed, the Kadee #158 whisker couplers inserted, the lids replaced, and quarter inch long 0/80 screws used to attach the assembly together and to the car body. The pockets extend approximately 3 inches beyond the car end. ACC was used at the side edges of the pockets to complete the attachment.



Note that the B end has been identified on the car floor. If constructing a 1947 IC build (#29500-30500) use Barber S-2 50-ton trucks as per the prototype cars. These are available from Tahoe Model Works (TMW-113/213). If a 1946 production car, then the correct trucks would be ASF A-3. The truck mounting holes were enlarged with a #50 drill bit to accept 2/56 screws. Drill through the car body as well for secure mounting. The trucks were added, and coupler heights checked. They were found to be of the correct NMRA height.

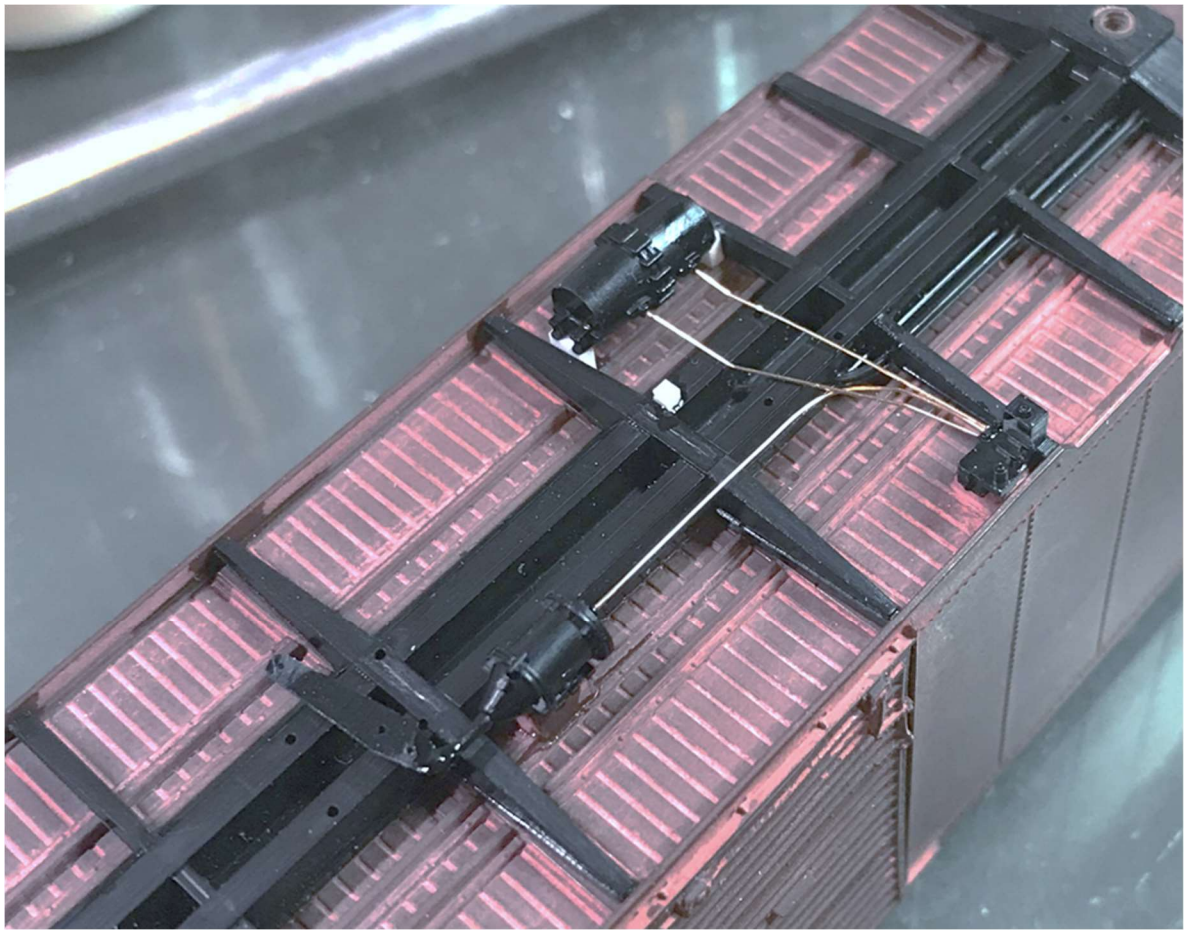
Weight was then added to the car. The weight used for this build was two ½” hex nuts that fit around the circular protrusions on the inside car floor. They were first secured with canopy glue and then ACC was also added. Once this was completely cured, the roof was permanently added.

Returning to the underside of the car, the trucks were removed, the sill steps and the AB brake system added. The Branchline kit parts can be used by following the directions from that kit. However, sill steps from A-Line (Stye A #29000) were used because of their greater durability. Also, there are aftermarket AB systems of greater fidelity, and the steps for the addition of one of them are shown.

The mini-kit comes with the Tichy AB set. Another available set is produced by CalScale (Bowser). The process to add the CalScale set is noted here. The Tichy set follows similar steps.

The A Line sill steps were mounted behind the newly added tabs. The legs should be lined up just to the inside of the cast on rivets on the tab.

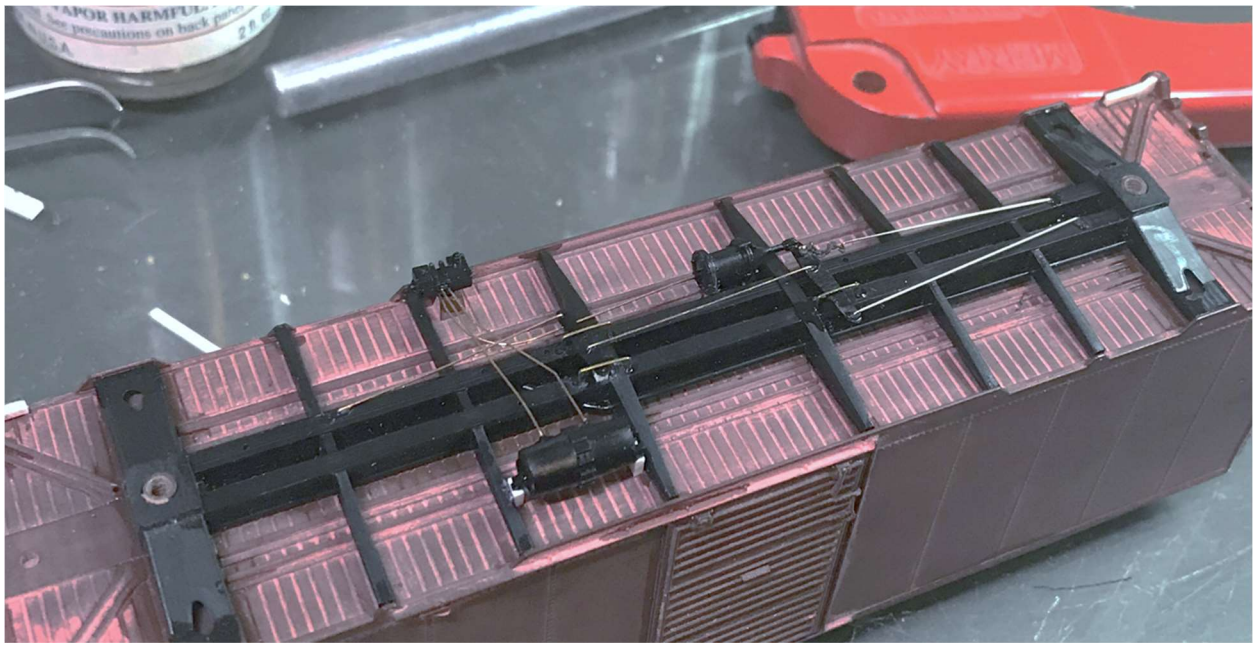
The Branchline “mounts” for the brake system were carved and sanded off as they hinder the placement of the new parts. Then, the parts from the CalScale set (air brake reservoir, AB valve, and brake cylinder) were prepared by drilling the holes in them (#79) for the piping to be attached. The brake levers were also used. The photo below shows another of the builds with the brake parts set in place and the brake piping (.010” phosphor bronze from Tichy #1101) attached. All mounts for these parts are from scrap styrene. The supports for the reservoir were formed from scrap 3” x 9” styrene strip material. The 9” was used for the vertical height. The reservoir mounts should be glued just outside the outermost cast on longitudinal stringer.



The photo shows the B end lever already in place with another #78 hole drilled next to the cylinder for the eventual anchoring of the brake chain. If following this process, drill the hole

before attaching it to the cylinder. The photo also shows the pivot for the A end brake lever (a scrap piece of 4" x 4" styrene) fastened to the center sill.

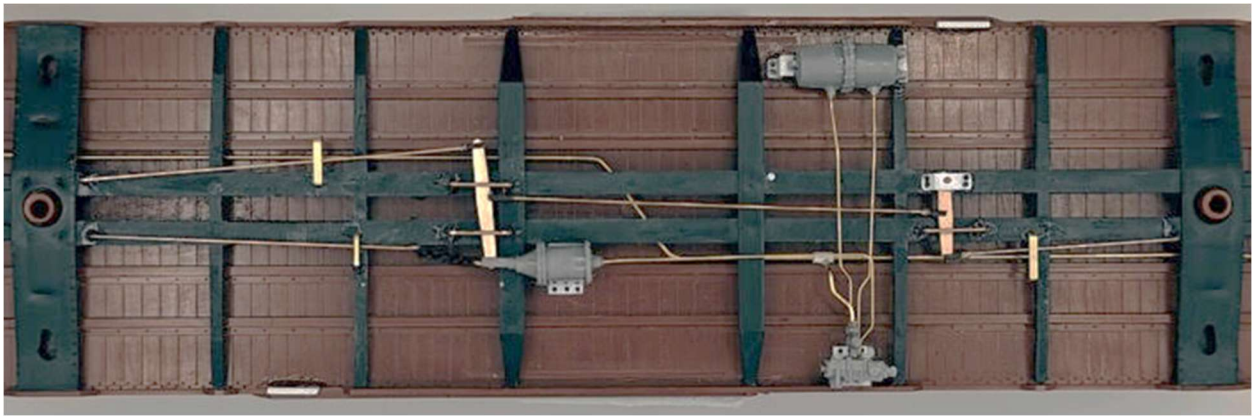
The photos above show the building of the short length of brake chain to be attached to the B end brake lever. The chain is 40 links per inch from Campbell Products and the wire is .010" from Tichy. About 12 links were cut from the original length of the chain, the .010" wire was inserted into one end link, and then glued with a small amount of length left to insert into the brake lever. Using another length of .010" wire, a small hook was created on its end, and it was inserted into the end link on the other end of the chain and glued in place. The length of the wire should be trimmed to proper length and can be attached to the center sill after the chain end is attached to the brake lever. Trim the length of wire inserted into the brake lever as necessary.



The brake system has been completed with the addition of the second brake lever, the brake rodding (including the brake chain), and the underbody brackets. All brass wire parts are Tichy .010" and the brackets are Tichy 18" straight grab irons.

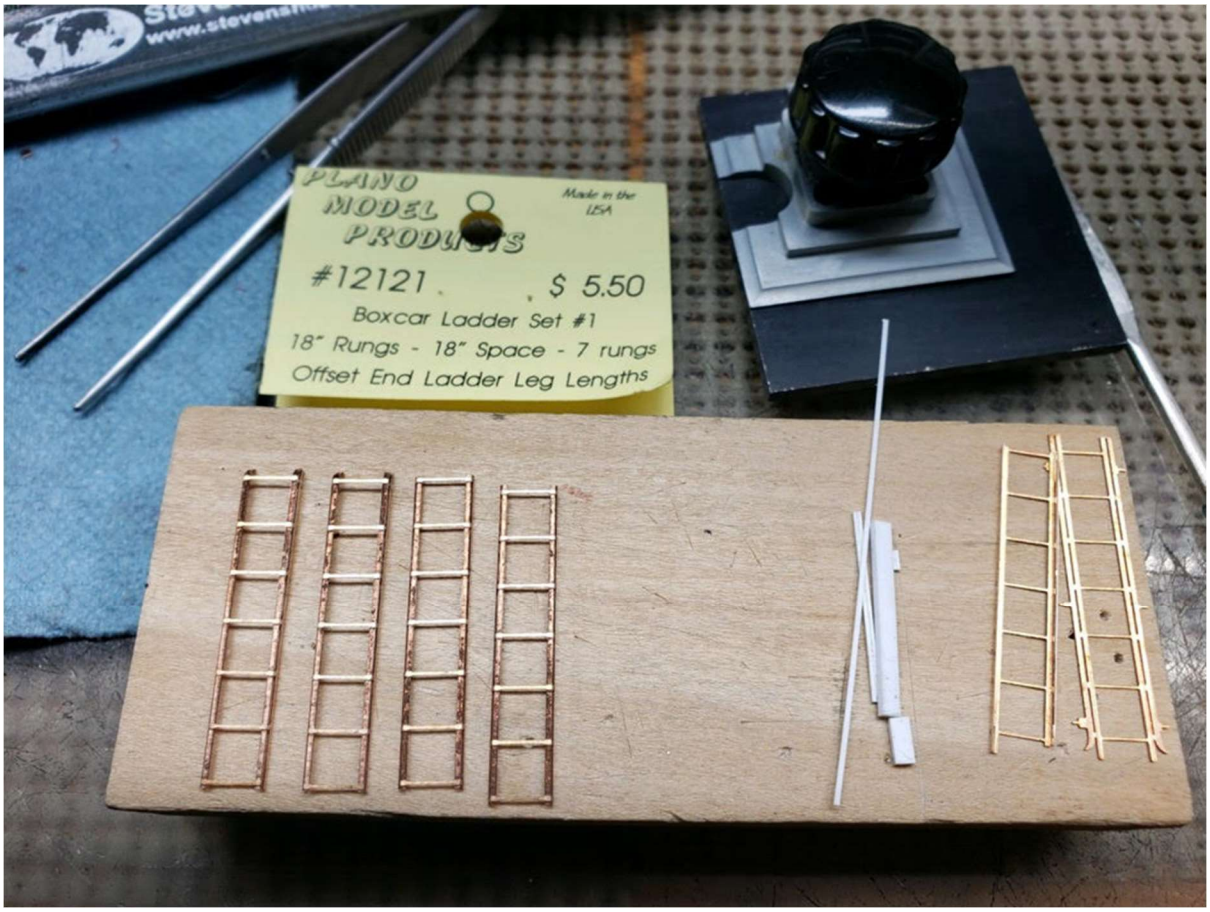
Another car kit was built using the Tichy AB brake set components and a somewhat more enhanced brake system was created. The photo below shows this completed underframe. The train line is .019" brass wire, the brake rods are .010" phosphor bronze wire, and the brake pipes are .010" brass wire. Yarmouth brake levers (#503) were substituted for the Tichy parts, the turnbuckles supplied in the mini-kit were cut in half and used as the brake piping connectors,

strip brass was used and formed into the brake rod guides, and harvested Athearn rivets were used with scrap pieces of styrene to form the component mounts.



Moving back to the car body for the side detail, the Branchline parts can be used, or the mini-kit supplied Plano ladders can be mounted instead. As shown in the photo below, the bracket grabs were also moved so that the left-hand bracket attaches to the car end's rivet line as per the prototype. For the car shown below, the ladders were also moved so their right-hand mounting was on the car end's rivet line as well. The cast on anchors for the ladders were carefully sanded off the car sides. After bending the Plano ladders, small bits of styrene were used as mounting "lugs". These were marked and then added to the ladder stock. Finally, the combined structure was glued to the car side.

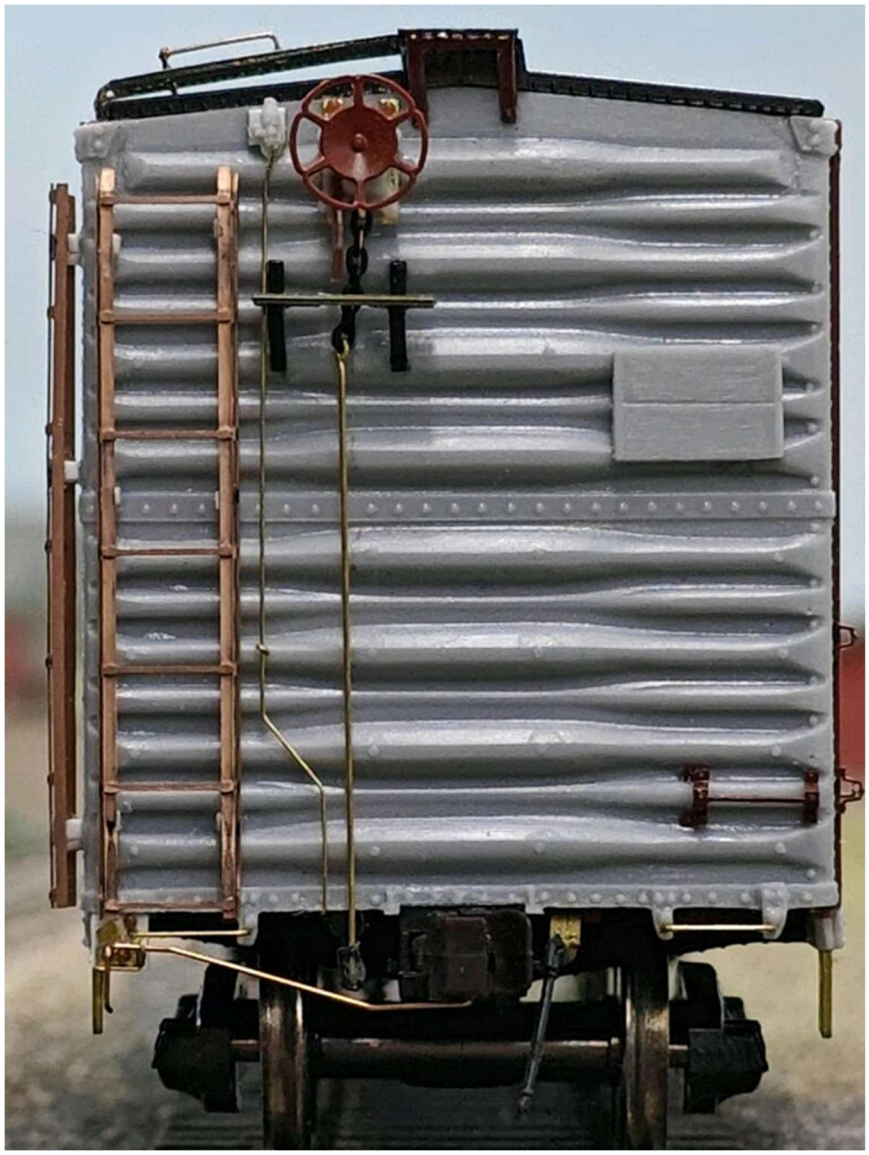
The bender used for the brass ladders was the one from UMM-USA. It can be used for multiple jobs.



Once the ladders were trimmed (the excess stile length above and below the first and last rungs and the brass mounting tabs were removed), the ladders were bent to shape. Bits of 2x4 styrene strip were glued at the attachment points and then trimmed so only .020" extend beyond the stiles.

The attachment points were determined from prototype photos. The small anchor tab details were added with .005" styrene and harvested rivets. The car shown was built to be a 31000 series 1948 built car and Branchline ends (R-3/4) were used on this particular car.

The placard and route boards provided in the mini-kit were added to the doors. That finished off the sides.



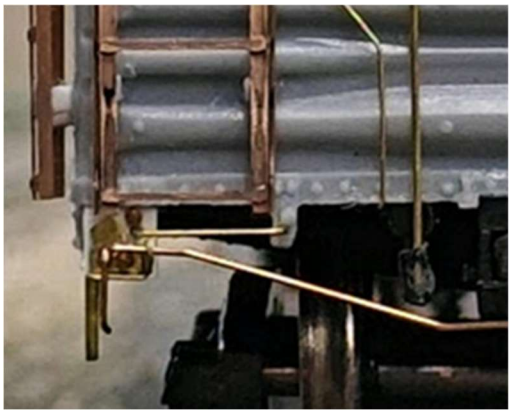
Detailing the ends was the next step. This photo of the B end shows all of the items added. For the A end, only the ladder, three grabs, placard board, cut lever and mount, and the air hose and its bracket are needed. The process of adding those items there are the same as described for the B end below.

Firstly, the same Plano ladders were applied to the car ends with styrene bits as supports. The edge supports will need to be slightly longer than the inner ones as the end surface is rounded. Another bracket grab was used for the upper end grab. The lower ones shown here are fashioned out of .008" brass wire, however Westerfield 18" straight grabs (#1198) can be used. See below discussion of pin lifter attachment. The tack board is from the mini-kit parts.

On the B end, the retainer valve from the resin kit parts was added next. After it was glued in place, a hole (#78) was drilled immediately below it for the insertion of .008" Phosphor Bronze wire (Tichy #1100) to serve as the retainer line. The top edge of the wire was bent 90 degrees and set into the hole and the necessary length of wire was determined. It was then bent to follow the shape of the prototype. An eyebolt was used as a midpoint anchor and glued in placed. The bent end of the wire was threaded through the eyebolt from the bottom and glued into the previously drilled hole at the base of the retainer valve. This retainer line was then also glued to the eyebolt and the bottom of the car.

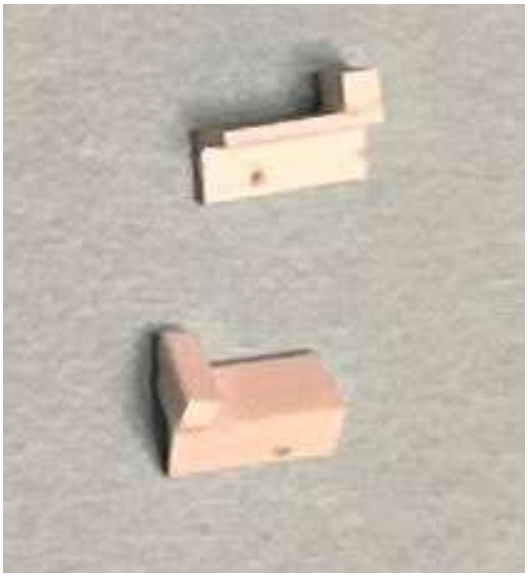
The bell crank from the CalScale AB set was used and glued to the bottom of the car's end to serve as the alignment for the brake housing and the brake step. The brake housing is from the resin kit parts, and the brake wheel is from Kadee. Based on the series of car being built (1946, 1947 or 1948), the type of brake wheel would change – see the prototype information above. The chain is Clover House, the brake platform is included in the Branchline parts, and the brake step brackets are from the parts box (Intermountain).

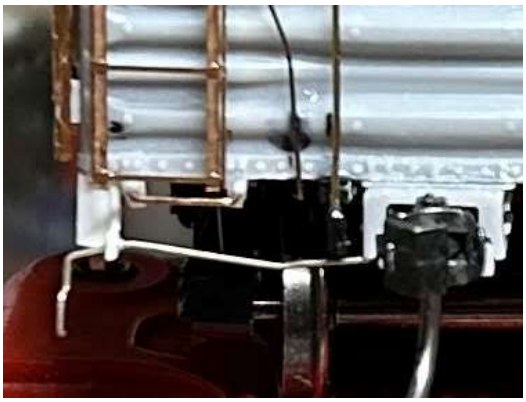
The air hose bracket is from Yarmouth (#506) and the air hose itself is a Moloco (#0307) product. The pin lifter bracket in the photo is from Yarmouth (#507) and is attached to an extension resting below the car end at the corner. For this car, the left-hand attachment to the grab was removed and replaced with a .015 x .080 piece of styrene. After it was glued to the bottom of the car, a hole was drilled for the outer leg of the grab. The Yarmouth bracket was formed and glued to the face of the styrene extension. Tichy rivets were also used to replicate the prototype.



The photo excerpt on the right above shows a prototype car (not this series of IC cars) with this approach to the mounting of the grab leg and the pin lifter on one surface.

On one of the builds, a different approach to the pin lifter attachment was used. The attachment for the both legs of the grab was not altered, rather a new surface was created next to the cast on extension.

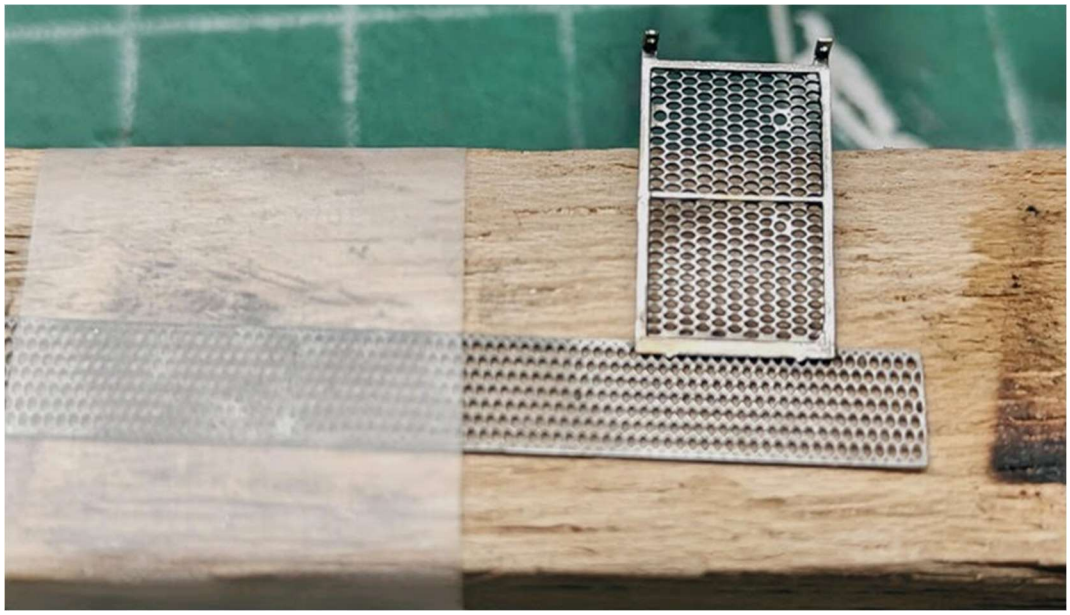




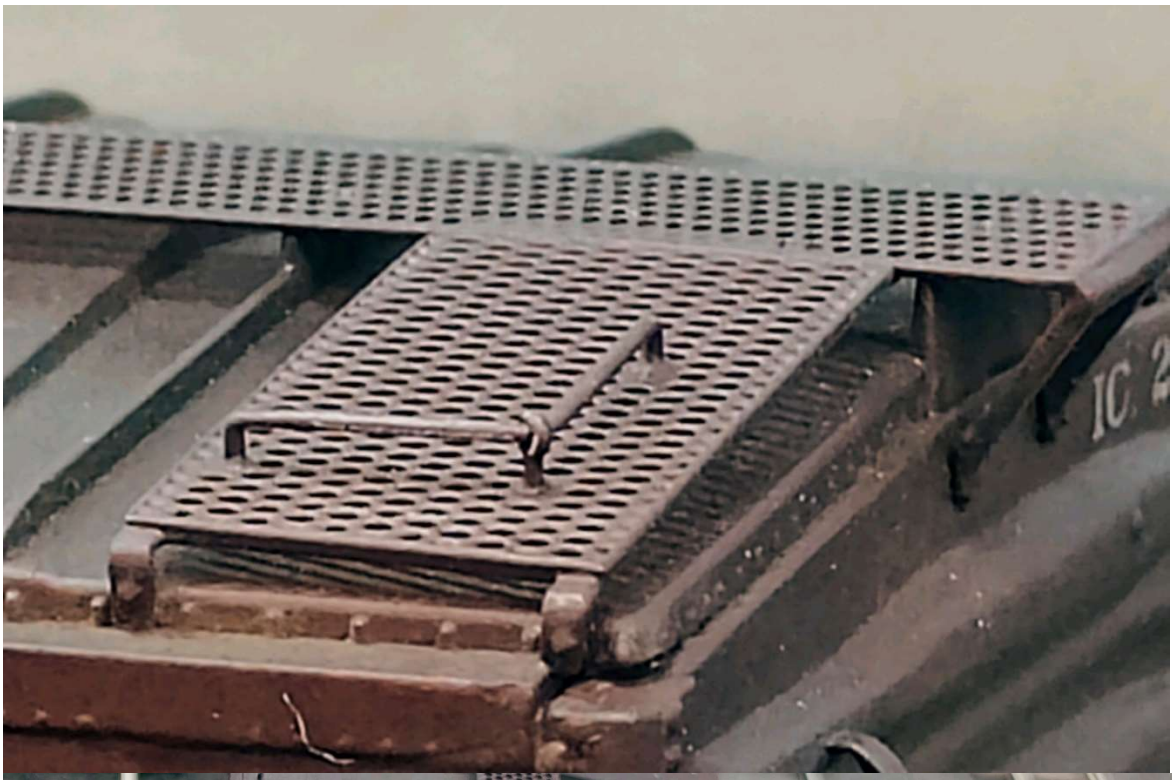
The new surface was made out of a section of .060 x .060 styrene angle stock from Evergreen. Two approximately 1/8" long sections are needed (one scale foot). They were cut longer and trimmed before being glued to the car. A short section of 4 x 4 stock was glued at the "top" of one section of the angle. This serves as the surface needed to glue to the bottom of the car end. A #78 hole was drilled in the other "protruding" section of the angle approximately 10 inches from the top. The protruding section of the angle was removed to just above this hole and the angle itself was the trimmed to the 12" length by removing material below the hole. The remaining structure was then glue to the car.

.010" brass wire was used for the pin lifter itself and was bent to the shape of the prototype.

The running board was attached last. Following the instructions for the supplied Plano product, the laterals need to be either soldered or glued to the main running board.



The running board is then glued to the roof. Canopy glue works well in this application because it dries clear and stays slightly flexible.



For the 1946 build, a Kadee Morton Running Board (#2008) could also be used instead of the Plano Morton style board provided. Kadee also makes Ajax and US Gypsum running boards.

Painting and decaling would be the final steps in completing the builds. The decals supplied in the mini-kit will work for any of the years but are specifically designed for the 1946 builds. Multiple paints are available for the car, but these cars were painted with TruColor (TCP #205). Weathering done with oils and Pan Pastels. The subtle color variation in the final outcome is based on the level of weathering applied.

1946 build

1947 build

late 1948 build

Models shown above were built by Ed Rethwisch and Jerry Hamsmith.