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# B&O M-15k 2016 Chicagoland RPM Mini-Kit by George Toman



# 2016 Chicagoland RPM Mini-Kit

This is a special kit made possible by the efforts and generosity of several manufacturers and individuals.

Fox Valley Models donated the basic car, Accurail donated the underframes, Tom Madden designed, cast and donated the resin parts, Mike Skibbe donated the Evergreen styrene strips, and Ted Culotta shared his artwork so that MicroScale could donate the decal printing. Frank Hodina developed the concept model and the instructions to complete the model.



#### History

The first on the M-15k class was rebuilt in 1936 with the remainder being completed in 1937.

A total of 1250 M-15kclass cars were built.

Unlike new M-53 wagon top boxcars the M-15k class had an indentation along the side sill that was typical of rebuilt boxcars of this period. This indentation occurred as the frames of the older cars were narrower than the new steel body.

Various styles of side sill supports were used to connect the salvaged frame to the new car's body ribs. The cars were originally equipped with Andrews trucks which were reused. During shopping some cars did receive newer style "Bettendorf" type trucks.

Doors were the typical B&O flat steel type.



Photo Courtesy of Ted Culotta

# Unique Identifying Features

Some of the features I wanted to capture in this model were the wide body mounted to the original narrower underframe by the use of angle stock and rivets.

The side steps were mounted to the end sill and side sills. They also appeared wider and shorter than most cars.

The Coupler lift bar and mounting brackets.

The Steel Brake Platform

The mounting of the lateral roof walk supports



Photo Courtesy of Ted Culotta

#### **Special Conversion Parts**

Special cast resin parts and an Accurail Fishbelly Underframe were provided as pictured to the right.

Not shown is the Fox Valley B&O M-53 undecorated kit, Decals and Styrene



# Modifying the Frame



The Underframe is about .080 too short and about .055 thick. I glued on .040x.060 styrene strips to each end. Sand back flush as necessary. Also glued on back side of couple mounting pad some .040 styrene to make the floor thicker for later taping for mounting screws.

Also remove mounting blocks and fill holes.

#### View of Underside of Frame



Styrene added to frame back to support coupler screws

#### Draft gear Options



Left Accurail Acumate Scale Draft gear Right Resin casting provided with Mini-Kit Note on right side of side sill the styrene strip that will be glued in upcoming step.

Accurail Accumate Scale Draft gear and cutting the cover plate to fit the underframe and end sill. The cover was shortened by .110 inches.



#### Resin End Sill



You can use these dimensions if making your own end sills Large Nut Bolt Washes are about .35 and Rivets about .015

# Modifying Ends for end sills



Left Unmodified Car End

Right Modified Car End

Resin End Sill Being Test fit into modified car end.

Looks like I need to file a bit more

Also grab iron holes plugged with .020 styrene



#### Prepping Car Body

The car body has tabs that secure the floor. These must be removed to install styrene strips in the next steps.



# Making Scribe Tool and Scribing Between Ribs



Scribe just below rivet line and between vertical posts leaving mounting detail and vertical rivets

#### Making Vertical Cuts and Snapping out side sill pieces

Make vertical Cuts along the slight raised edge along the vertical rivets up to the scribe line. Use a JLC Micro Saw or similar available from UMM-USA or Micro Mark. Use the fine blade. Note: The metal right angle brackets serve no purpose other than to hold car at angle for picture.

Hold on don't sand anything yet.



#### Snapping Out Sill Pieces and Removing rivets

I used some Xuron needle nose pliers to carefully break out the side sill sections.



#### Removing Unnecessary Rivets



Above shows the row of Horizontal rivets above our snapped out sill piece. This row of rivets is to be sanded off. I used a 320 Grit and higher grit sanding stick to carefully sand off.

Note: Don't sand openings at this time.

# Cut Away View for Creating The Underframe and Floor Supports

Pictured to the right is a mockup of the different strips of styrene we will be applying in the next steps to create the floor support and side sill details

Note: The .040x.090 was cut from a sheet to minimize sanding. More details to follow.



#### Gluing in the floor supports and car body parts

In this step we will add .080 x .188 styrene supports for the floor. Cut two to fit between the A end and B End. Glue these at the current marks and stops on the inside of the Carbody Shell. I use a dial caliper to measure from the verticle supports to insure that this is level. Also install .080 x.188 strips at the A & B ends as shown. Next glue a .040 x .100 stryene strip along each side sill on top of the .080x.188 as shown. Note, do not install any on either end.

At this point you can now test fit the floor we modified earlier. Here you can file any ends or sides for a snug fit. Note: As the dimensions of styrene may vary by a couple thousandths you may need to file and adjust length and width Distance from top of vertical support to styrene strip just about .110. Will sand in next step

.040x.100strips

.080x.188 strips

### Glue Rib Supports and Sanding

First we will glue some .040 thick styrene (pictured in black behind gray ribs). These I cut from .040 x .10 and approx .110 inch in length. You should measure the width of you ribs on the car body and make them slightly wider and longer than necessary. After gluing let them dry thoroughly and sand to the final dimension.

I made my own sanding stick from .188x.188 styrene. I used 3M fine grit paper applied to one edge. This gives a nice square corner for the 90degree corners. The spaces between the ribs is sanded to the .040 x .090 final dimension



I applied Micro Mark resin rivet decals to the side sill adjacent to the posts. I created 0.005" thick styrene strips about 0.030" in width. I cut the rivets into rows of three and then dipped in water, removed the decal backing, and blotted on a paper towel. I next dipped the resin rivet strip into a paint bottle filled with Pledge and applied to the styrene strip. I repeated until I filled the 0.005" x .030" strip, leaving a gap between each group. After they dried I used styrene cement to apply the strips next to the ribs, as seen in photo. Once dry, I trimmed the rivet strips flush to the car side sill. An advantages that the styrene cement did not seem to distort the 0.005" stvrene.

# Adding Resin Rivets

Rivet Strip glued to side sill and trimmed with P-B-L trimmer

.005x.030 styrene strip

Micro Mark resin rivets

Decal dipped in water and backing removed, water wicked off on paper towel, dipped into pledge and applied to styrene strip

#### Test Fit Under Frame to Car Body

Now is a good time to test your underframe to the car body one more time and sand/ adjust width and length for a snug fit.

Note: Do Not Glue in Place at this time until underframe detail is added along with weights of your choice



#### Rivet Strips and Defect Card Holder

Defect Card Holder Dimensions cut from .005 Styrene & Micro Mark or Archer Rivets applied with Pledge.





#### Defect Card Holder Jig

The defect card holders from 0.005" styrene were created using a jig to press the shape into the styrene. Two heavier pieces of styrene were used on each side .020x.040 as the press

The dimensions are illustrated in the sketch on the previous page.



## Measuring and Cutting Brass Strips



I often use Evergreen styrene as a method to mark my small sizes. Here I am checking for desired dimension with dial caliper.



Place a straight edge on a brass sheet. Lay the styrene (.0295 colored black)) strip next to straight edge. Lay scrape styrene against brass sheet edge. Push straight edge and .0295 strip against scrap styrene

![](_page_26_Picture_0.jpeg)

![](_page_26_Picture_1.jpeg)

Scribing the Brass with an Xacto #11 Blade

Cutting the Brass to 2inch or less to fit my Bug PE Tool. Just cut to scribe line. See next slide

![](_page_27_Picture_0.jpeg)

The Bug Photo Etch Bending Tool with 2 inch bending area http://www.thesmallshop.com/index.ph p?main\_page=product\_info&products\_i d=9

![](_page_27_Picture_2.jpeg)

Bending the .005 brass sheet at scribe line Bend gently back and forth to break like styrene

![](_page_28_Picture_0.jpeg)

![](_page_28_Picture_1.jpeg)

#### Bending the .0295 strip

#### Finished Strip snapped off

#### Brass Steps

The sills steps were created from 0.005" brass. The strips were created by scribing with a sharp no. 11 blade and bending back and forth in a photo-etch tool until snapping off. Following are the steps I used to make the steps using simple styrene jigs. Holes were drilled out to .009 to pin with .008 brass wire.

![](_page_29_Picture_2.jpeg)

The .005 x .040 brass strip is cut to the .60 length.

Drill both ends as shown on next slide and return to this slide

Next insert .005 brass at bottom of .256 styrene jig with the left end up against fold stop.

This will give equal leg lengths Fold up the left side Fold up the Right side leg

![](_page_30_Figure_4.jpeg)

![](_page_31_Picture_0.jpeg)

Using the styrene jig to hold the brass strip while marking center for drilling .009 hole. Drill holes at this time

![](_page_31_Picture_2.jpeg)

Both end of the .005 x .040 x .60 drilled

![](_page_32_Picture_0.jpeg)

Two Needle Nose Pliers are use to grip both sides of the scribe line and the right side one is twisted 90 degrees counter clockwise

#### Side Sill Steps Mounted and Rivet Detail

![](_page_33_Picture_1.jpeg)

#### **Running Boards**

The running boards were scratch built. Woodgrain was added to 0.020" x 0.060" styrene strips using the teeth of a Zona saw blade and a wire brush. These strips were cut to 42'6" in length. Nail holes were added and individual boards were scribed. The nail holes were placed to match the running board supports. The latitudinal boards were cut from 0.020" x 0.050" strips to obtain the proper number and spacing as seen on the prototype. Brass strips of 0.010" x 0.035" were bent and drilled per prototype photos. The corner hand holds were made from 0.010" brass wire, Yarmouth Model Works eye bolts, and Grandt Line nut-bolt-washers.

![](_page_34_Picture_2.jpeg)