

RESIN CAR WORKS RCW P.O. BOX 42 BYRON, IL 61010



Santa Fe Fe-26

Brief History

The Santa Fe Class Fe-26 consisted of 500 forty-foot double door cars numbered 64200-64699 and were delivered by Pullman Standard in the spring of 1945.

Getting Started

It is recommend that before you start that you familiarize yourself with additional information and photos that pertain to your model. Also please review the instructions and kit contents carefully. Identify the parts that pertain to your model as there are options on the resin parts sheets for different variations.

- First, give the resin parts a good cleaning with Dawn and a toothbrush to remove any mold releasing agents. A light sanding of joints also helps bond parts. Dawn Powerwash Spray works very well also.
- The car parts are best attached with ACC. When the term “cement” is used in these instructions, it refers to ACC.

- GOO or other similar products are not recommended for construction except in small quantiles, as they will soften the casting material.
- When a measurement is given, it’s in prototype feet and inches.
- When the word “scrap” is used, it refers to an item that the modeler is to supply

Construction Notes
and Model by
George Toman
Nov2024

Following are my assembly notes for building the Santa Fe Fe-26 Double Door Boxcar. This mini-kit was offered at the Prototype Rails meet in Cocoa Beach in 2024 as a Shake-N-Take project but without decals. The builder was to keep the lettering in tack and add the resin detail parts and touch up the paint. Some additional information on this Santa Fe Fe-26 may be found on groups.io and the shake-n-take group.

For my construction of this mini-kit I show how I built it and made some corrections and detail upgrades. I have not included prototype photos or general arrangement drawings as I do not have the rights to publish.

Besides groups.io you may find more information on these in the Santa Fe Railway Rolling Stock and Reference Series – Volume Three Furniture and Automobile Box Cars by Richard H Hendrickson and available from the Santa Fe Railway Historical and Modeling Society

A couple of thoughts about Car Numbers and Running boards before you build your car.


Note in the list below from the Sake N Take project, the range of car numbers and slogans

These were the last cars to have the early style slogans and maps. In fact, the maps had to be compressed due to the limits imposed by the large 14' door opening, so instead of the usual "*Ship Santa Fe all the way*", these maps only read "*Santa Fe all the way*".

On the sides of the cars opposite from the maps, specific car series were given specific slogans:

- 64200-64299 were assigned "Grand Canyon Line"
- 64300-64399 were marked for the "Scout"
- 64400-64499 were assigned "El Capitan"
- 64500-64599 were given to the "Super Chief", and
- 64600-64699 were assigned to "The Chief"

Now look at the list below from the Mech Eng Drawing showing car numbers & running boards and number ranges. These are not in line with the slogan list. Your choice of running board will determine the slogan and number range.

SERIES 64200-64324 MORTON	RUNNING BOARD & BRAKE STEP 2-26-A-3450	TRUCK BOLSTER: 2-20-A-1824 CS-2719
" 64325-64449 APEX	" " " " " 2-26-B-3677	TRUCK ARRGT: ASF 2-20-B-1828
" 64450-64574 GYPSUM	" " " " " 2-26-B-3680	DRG. LIST 213/1935
" 64575-64699 BLAW-KNOX	" " " " " 2-26-B-3682	
" 64200-64449 MINER A-22-XB DRAFT GEAR		
" 64450-64699 NATIONAL M-17-A		
A-3 RIDE CONTROL, 3 1/8" SPRING TRAVEL		
	*NOTE 5900-6099 JOB F-437 LETTER 1/14/59	
	6100-6109 JOB F-564 LETTER 9/7/60	
	6110-6359 JOB F-591 LETTER 4/18/61	
	6360-6366 JOB F-632 LET. 11/8/61, 6372-6385 JOB F-757 2/11/63, 12/12/63	
	TOPEKA, KANSAS. MAR-3-45	
DIMENSIONS TAKEN FROM TOP OF RAIL.		211  4

The construction of the Fe-26 starts with a C&BT Shops kit of an AAR 40ft double-door boxcar and a resin parts sheet from RCW as shown below but missing the decals now included.



Parts List for Fe-26

Tichy AB Brakes #3013

Tichy Wire .0080, 010, .0125, .015

Detail Associates wire .019

Detail Associates .010 x .018 flat wire for stirrups

Yarmouth PE 18 inch ladder stiles YMW-304

Yarmouth PE Cut Lever Brackets YMW-507

Yarmouth PE Air Hose Brackets YMW-506

Kadee Side Grab Irons #2251

Draft Gear Kit supplied or your choice

A3 Ride Control Trucks Tangent TSM=2012

Tangent Ajax Brake Wheel #1050

Ngineering Micro Tubing ([Model Railroad Products & Services](#))

Evergreen Styrene various sizes

Archer or Microscale Rivets

National Scale Cars Door Stops part# P2

Precision Scale Retainer Valve #31796

Moloco Running Board Supports RB 08-04

Moloco Rubber Air Hoses RH 0307

Running Board Various by Car Number Range (This also determines Car Slogan applied to side) (See page 3)

Morton 64200-64324

Apex 64325-64449

Gypsum 64450-64574

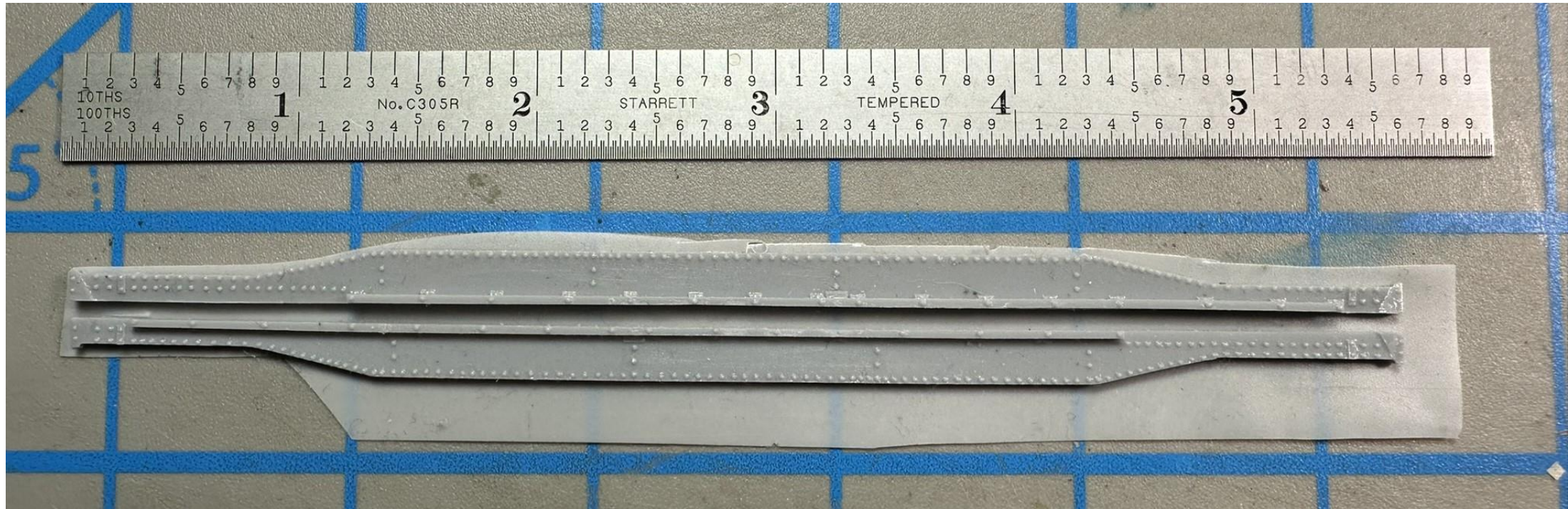
Slaw-Knox 64575-64699

The modifications to the body are to cut the lower side sill and door track and fit the new resin sill in its place. In my case I had a C&BT kit that had molded-on grabs, ladders and brake housing on the B-end of the car. Some early C&BT kits had separate grabs and ladders making the conversion easier. I choose on my body to cut and shave the molded-on parts. On the other version you only need to fill any holes if not using the kit included ladders and grabs. I choose to carve my molded on detatils off as pictured

Below on left is a photo of the end with molded on very oversized details and right the details cut off.



Once the ladders, grabs and other unwanted details were removed, I started on the lower side sills. I first sanded the backs of the resin parts and measured them for a snug fit to the plastic car body. They are identical, but I did mark mine as L and R to make sure they fit properly. I also used a Dial Caliper not shown to measure and mark the body side sill.

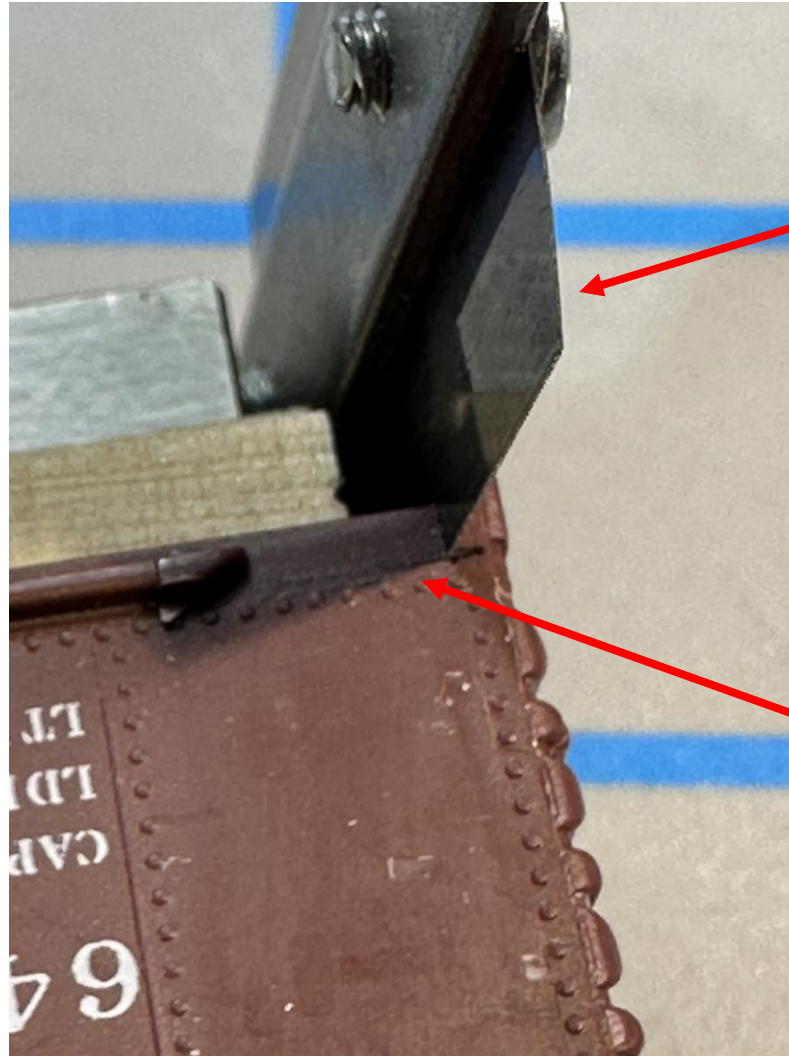


Pictured below is the C&BT shell where I inserted two machinist 123 blocks and some thin wood to support the shell while cutting. The Single Edge Razor blade is cutting the top of the right hand lower door track in prep to cut the sill off



The lower door stops need to be cut off

In this photo I had marked the cut point for the left end of the new resin side sill and am using a Micro Saw to cut at 90 degrees up to the line just below the rivets. This was done on each side making sure I did not cut too much.



Micro Razor Saw from Umm-USA used to make cuts

Note the seam created by the bottom of the side sheet below the rivets.

As shown below I am using my Micro Saw to cut along the top of the lower door guide and straight across just below the line of rivets. You can see that I still have my 123 blocks and wood support in place while cutting. On the Shake-N-Take group someone used a cut block of wood sized for a snug fit for this operation





Here I am test fitting the resin side sills in place. Don't forget to mark them. A word of caution here. Once the lower sill is cut away, the shell can bow and you don't want to remove any more material or you may change the length even by a couple of thousands. That is why I made the vertical cuts and marked my sills first. Once the floor is glued in the original length will be obtained.

Here some scrap styrene is cut to fit and extend the small piece of side sill that was left after making the 90 degree cut. This is necessary for the new resin side sill increased height



The next step was to tackle the underframe. There are many corrections that can be made to improve accuracy. It is up to you how far you want to go. I will show what I did on my build that improves the accuracy and detail level without scratch building a completely new underframe

I had access to a Fe-26 General Arrangement drawing and after reviewing, found that the following needed to be corrected

- 1) Carve off corner braces at each corner and C&BT Lettering as seen on next page
- 2) Add 3 inch Z stringers on each side of center channel
- 3) Carve off brake piping if adding wire for pipe
- 4) Correct Cross Bearers and Cross Ties. It appears that the C&BT kit has 6 Cross Bearers. There should be 4 cross bearers and 3 cross ties
- 5) Carve off all cast-on brake parts
- 6) Correct center channel height. C&BT is about 2 inches too short in height.
- 7) Rather than carve off cast on floor detail, I decided to make a new floor from .020 scribed styrene
This in effect lowered the floor .010 and allowed me to increase the center channel by .010

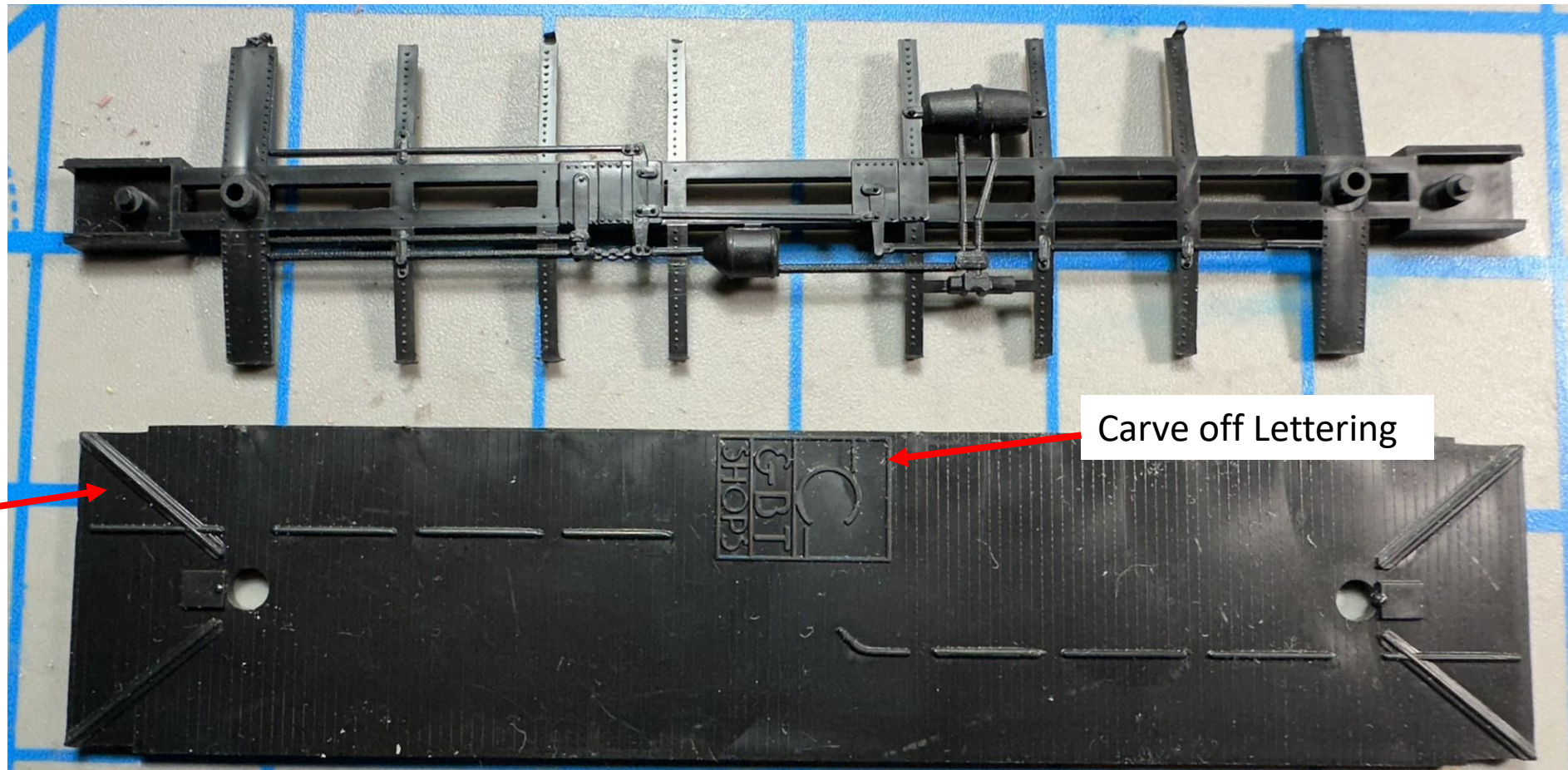


Blue .040 thick styrene
Gray .020 scribed styrene
Green .010 thick styrene
Black C&BT underframe/center channel/ bolster
and cross bearers are not shown

Here is the stock C&BT underframe. Here we can make some improvement and correct some issues.

Of course the cast on brake detail will be carved and filed off. We are also missing a cross tie that these cars had and will be added to the center

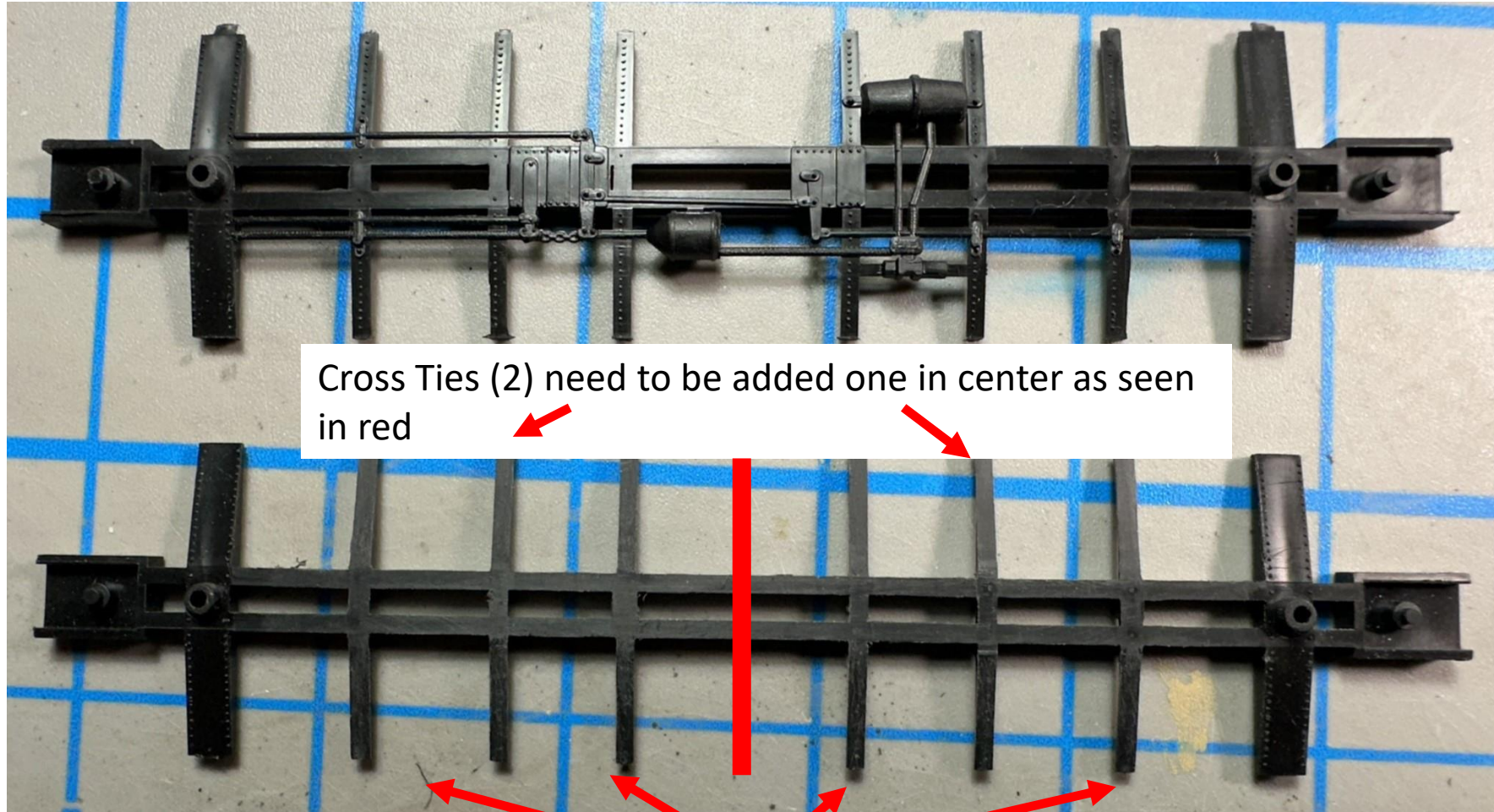
C&BT appears to have made this with all cross bearers and no cross ties. We will also correct this



4 Corner
Braces
Incorrect

Carve off Lettering

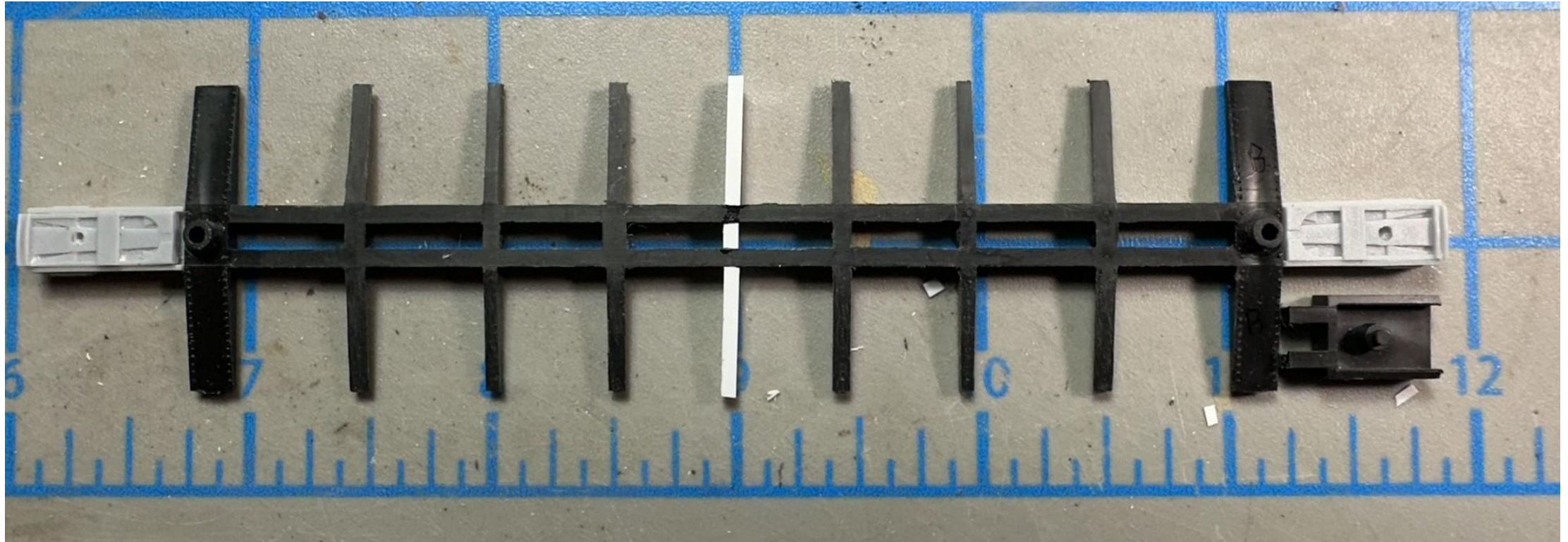
Original underframe top and modified bottom



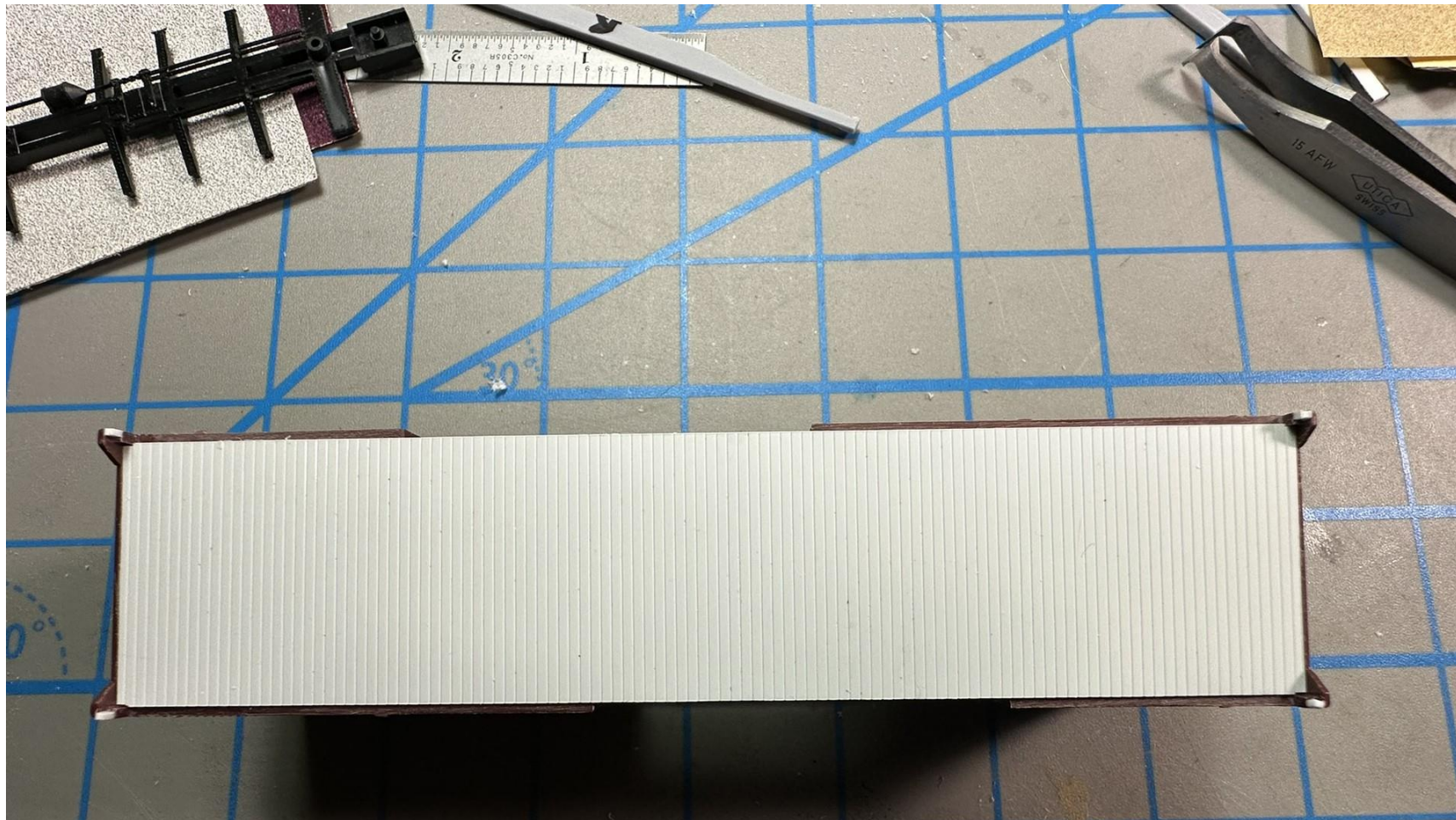
Cross Ties (2) need to be added one in center as seen in red

Cross Bearers (4)

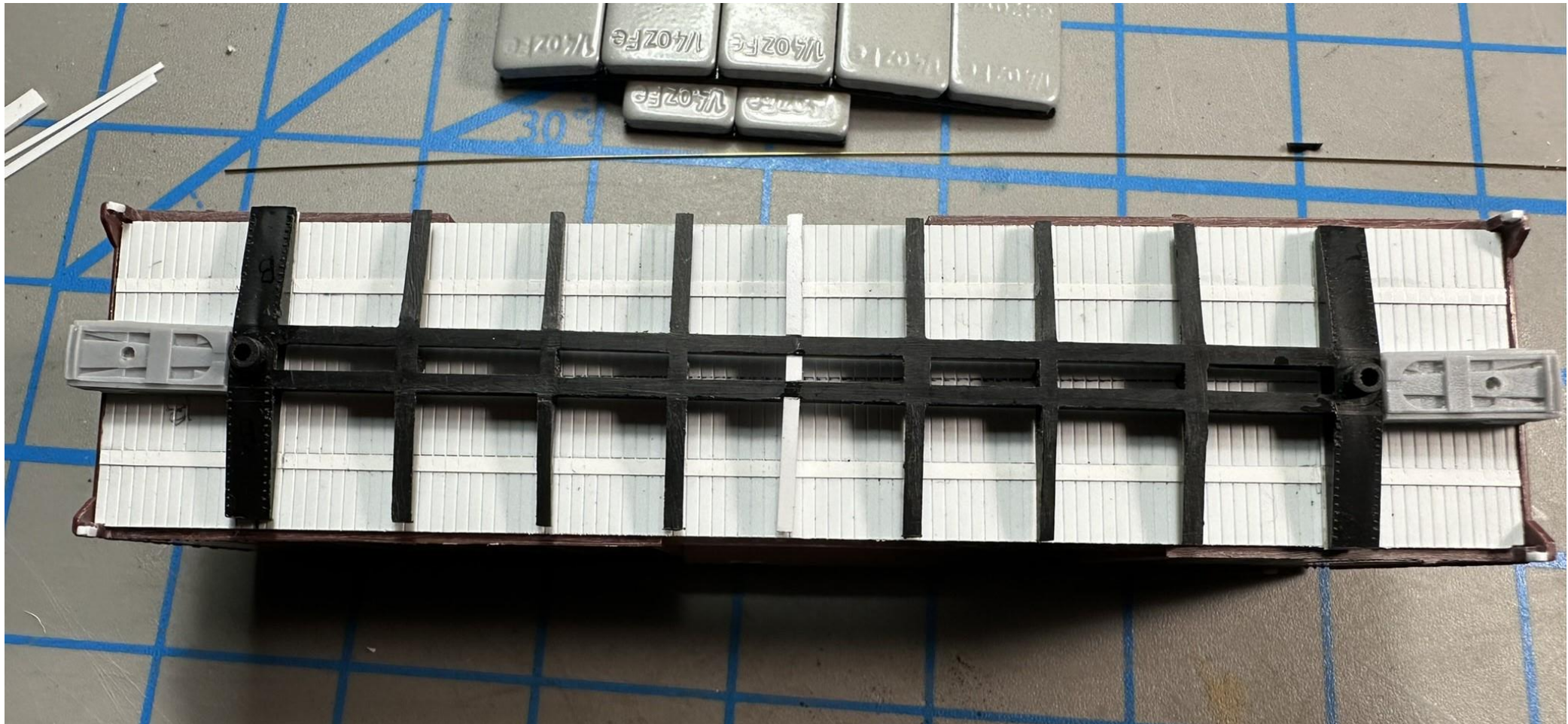
Evergreen styrene was used to make the new cross tie. Note that the cross bearers have rivets and the cross ties have been narrowed a bit by sanding one side of them down. Cross ties have no rivets. There are 4 cross bearers and 3 cross ties. Rivets on cross bearers and cross ties will be sanded off and replaced
I also cut the oversized draft gear box off and am trying the resin one in its place. I did decide to use Kadee Scale boxes for this build and they will be shown in a later slide



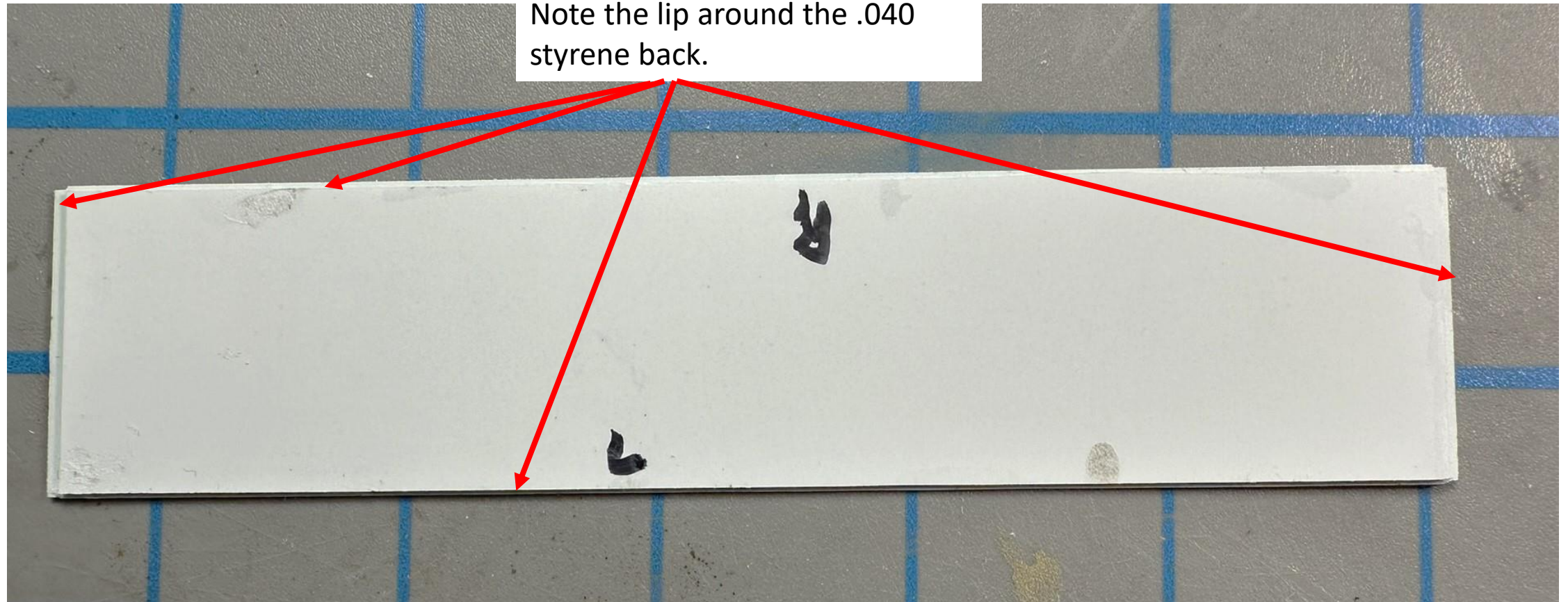
Measuring the C&BT floor I cut some .020 thick scribed styrene to the exact size as pictured below and tested the fit.



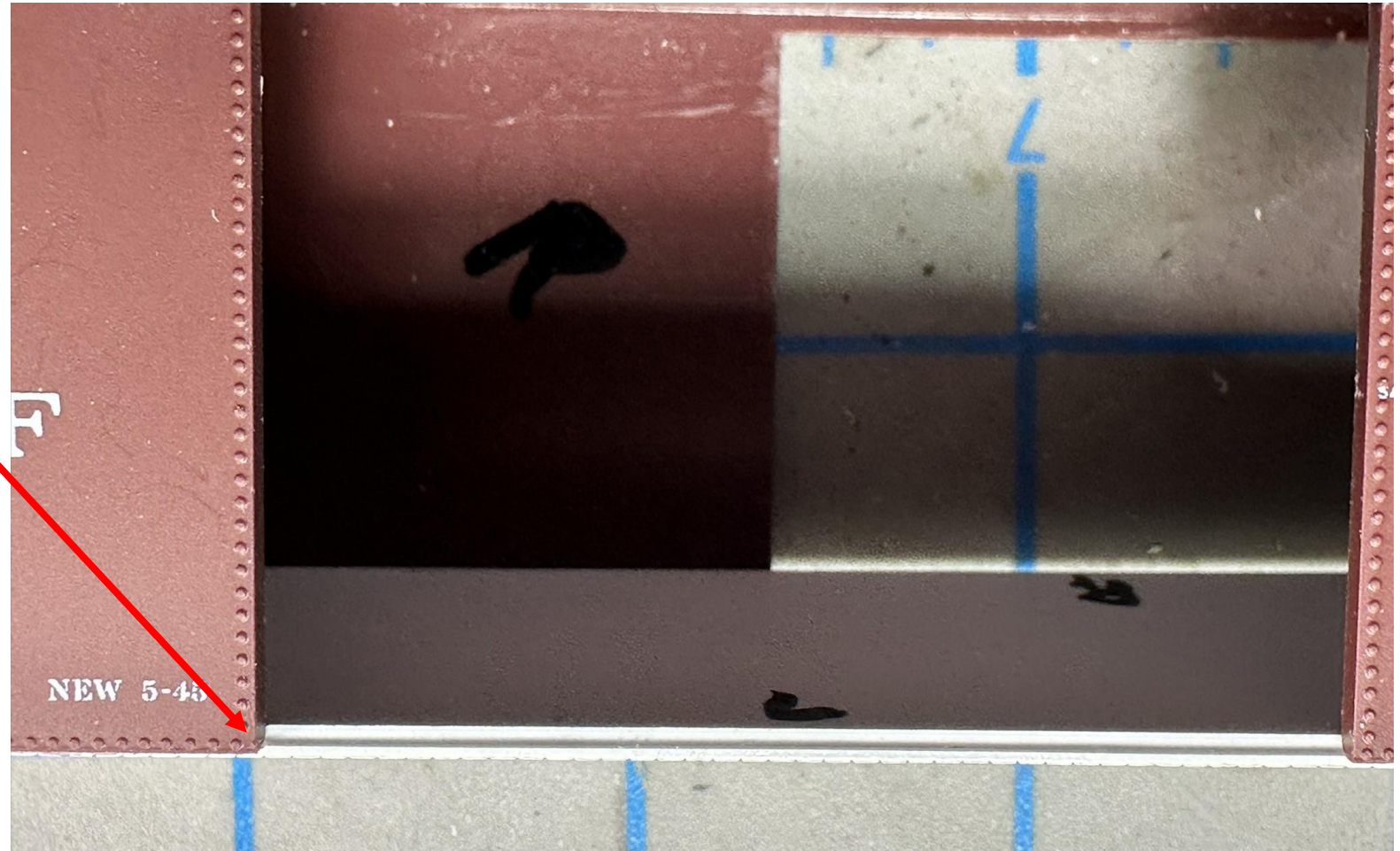
Below is the underframe being test fitted in the underbody. The new resin side sills are not yet glued in place. Also seen are the automobile wheel weights that will be installed on inside floor



Pictured here is the inside view of the floor. A .040 thick reinforcement was cut to the size of the C&BT floor and glued to the .020 scribed styrene. Note that there is a small recess of about .015 along the sides and a bit more at the ends. This allows the floor to nest in the car body and keep body sides parallel



View from door showing how the floor is nested into the car shell



End view showing new scribed floor being test fit.
3 inch Z stringers were made using a method that Ted Culotta uses as seen below

Making the Z stringers end view

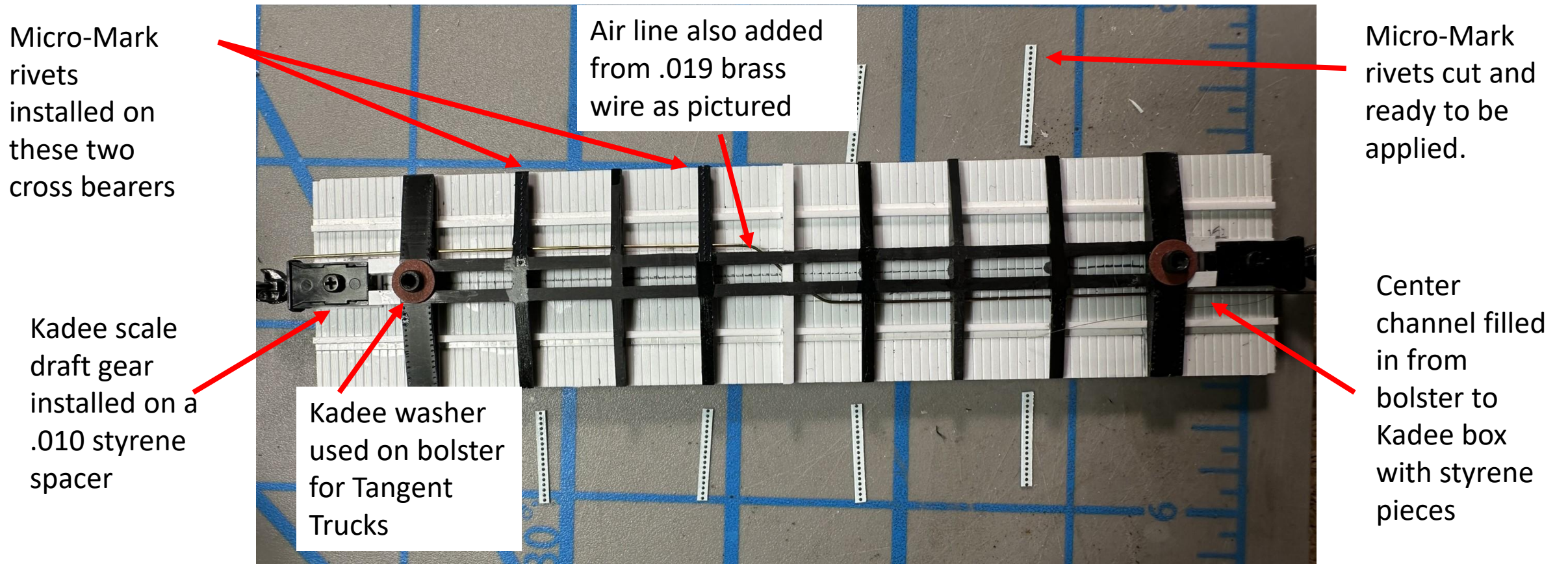


Red 1 x 3 styrene
Blue .020 x .020
Black .005 x .053



I forgot to make a slide of the Z stringer construction but I laid out two lines, one on each side of the center channel. The .005 x .053 strip were glued the length of the car. The .020x.020 and 1x3 pieces were added between the bolster, cross bearers and cross ties after the C&BT underframe is glued in place as this photo shows.

I used Micro-Mark decal resin rivets to replace the sanded off ones but only on the cross bearers

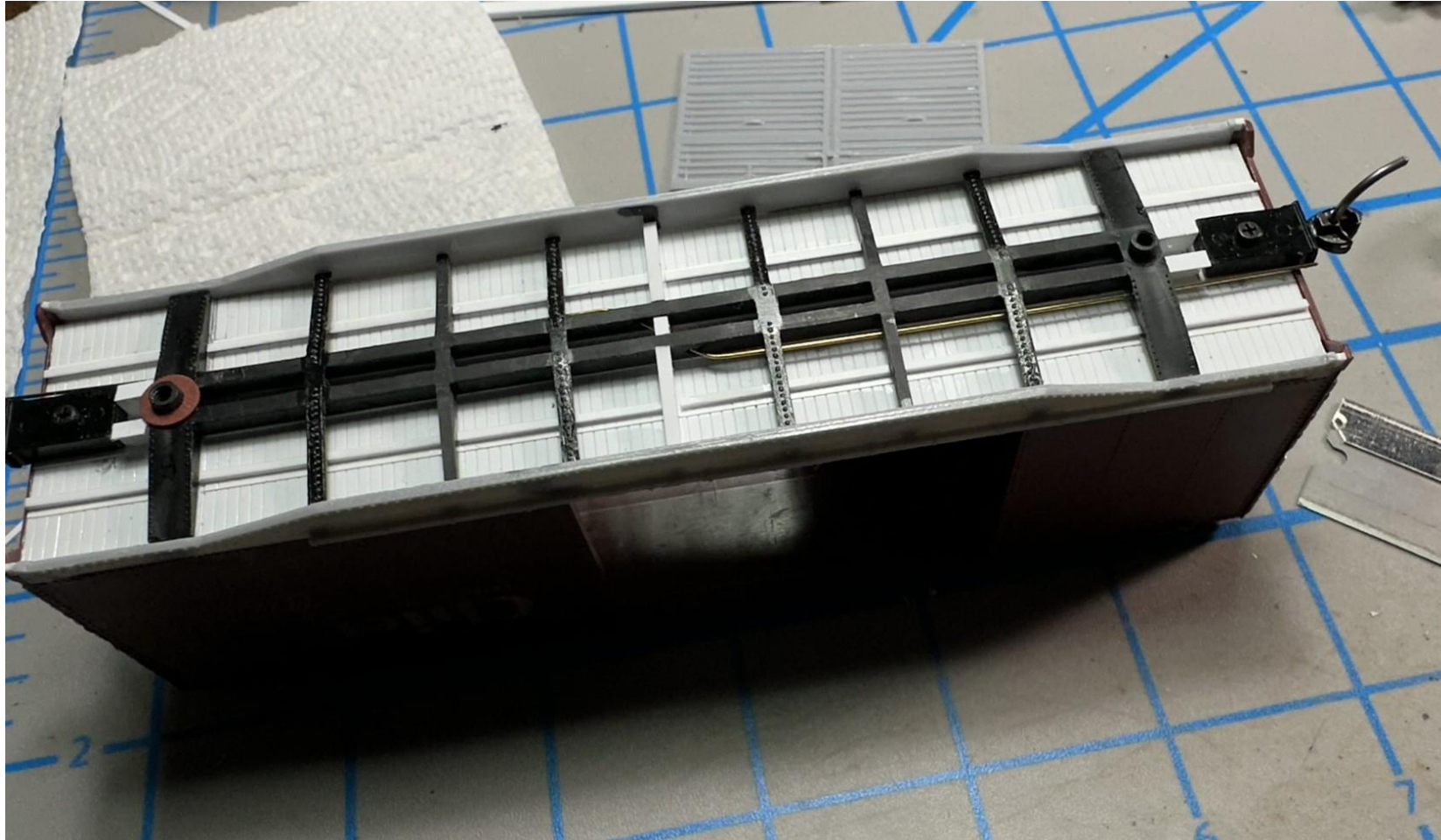




Floor ready for installation.

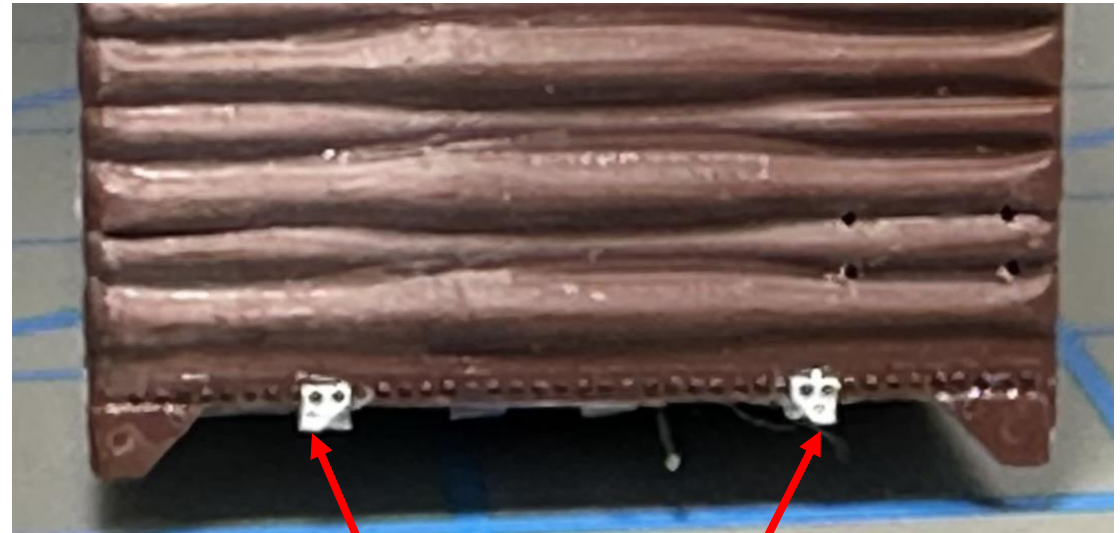
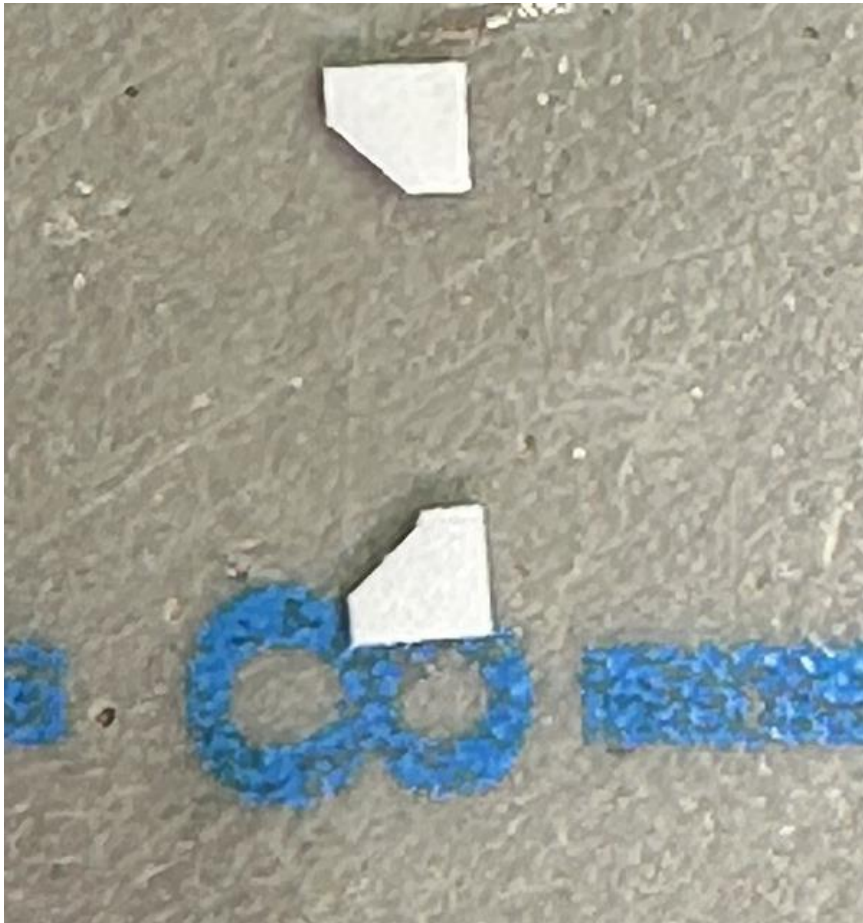
Note that .040 x .125 styrene strips were added to the length of the inside floor with some scrap reinforcement pieces for the bolsters and draft gear
Note that I had marked the sides L and R.

Micro Mark rivets added to cross bearers
Floor glued in place
Resin side sills also put in place and glued with CA glue



Small brackets were cut from .010 thick styrene strip to .1x.1 and trimmed and mounted on the ends of the car for the end grabs.

Note that the poling pockets have also been sanded off as the Fe-26 did not have any
Note Micro-Mark resin rivets were used to replace the ones that had been sanded off in the removal of the cast on details

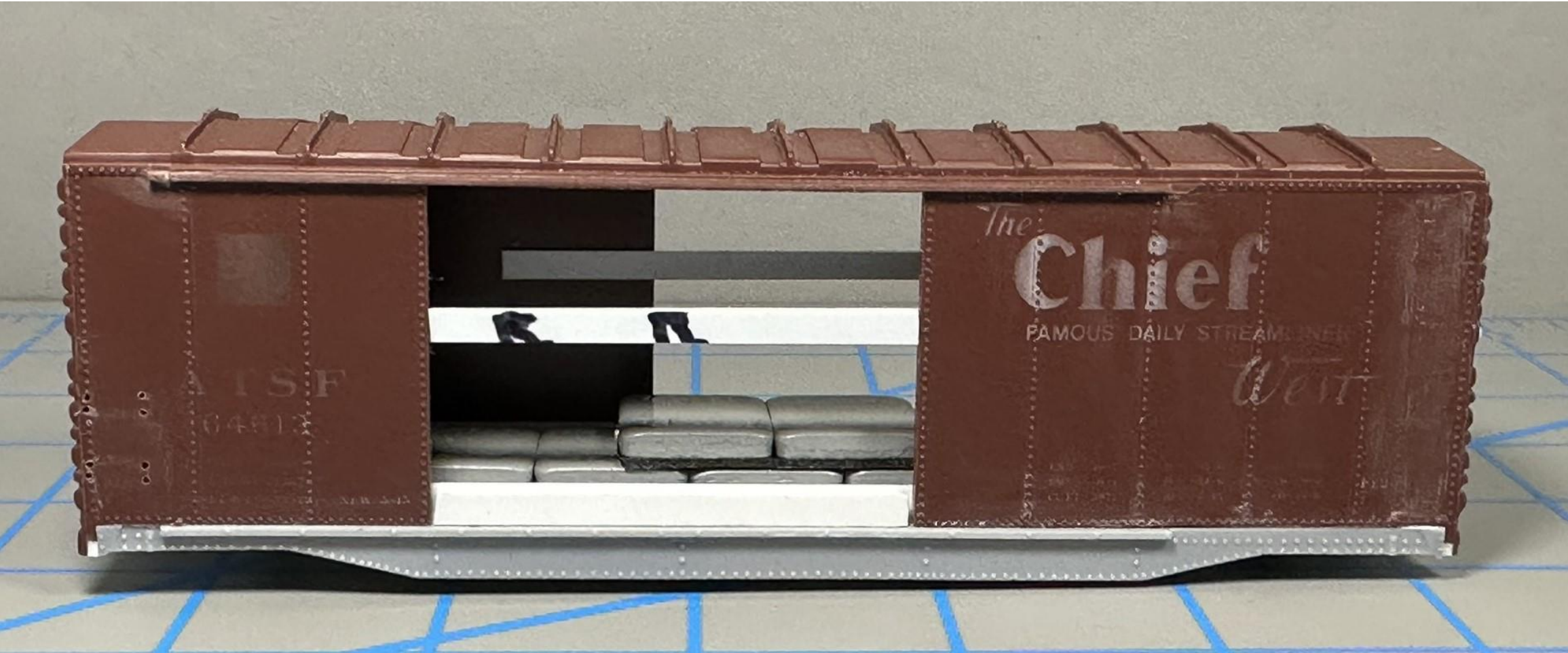


A .040 x .040 styrene support is installed behind where the grab iron hole is drilled.

Kadee side grabs were marked and drilled using a Yarmouth drilling template



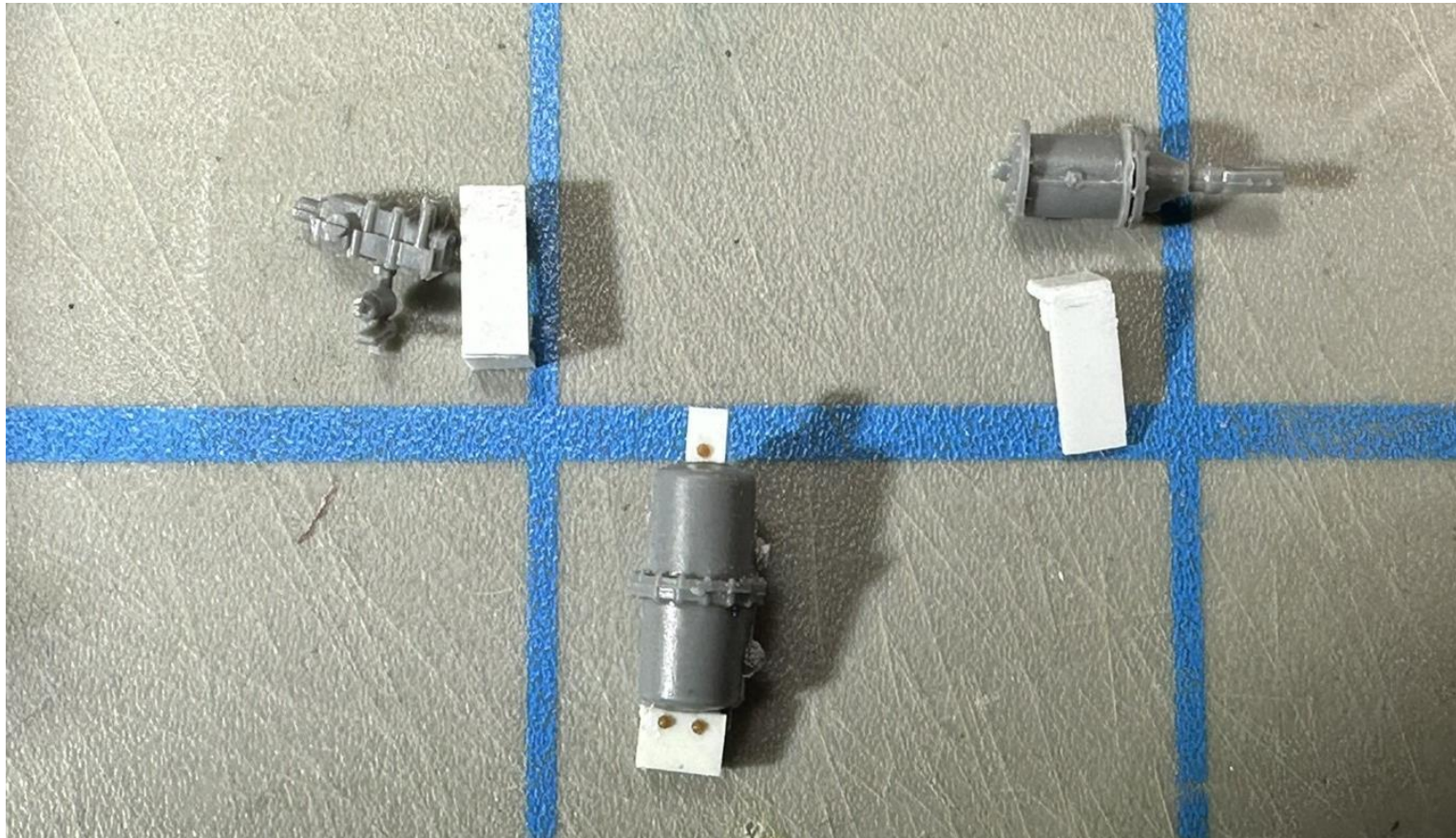
The inside of the doors had some styrene strips added for support and gluing of the resin doors flush to the car sides. This was done in the middle and the bottom as pictured below



Tichy AB brake parts were assembled and #80 holes were drilled for the piping.

I made mounting brackets as pictured below.

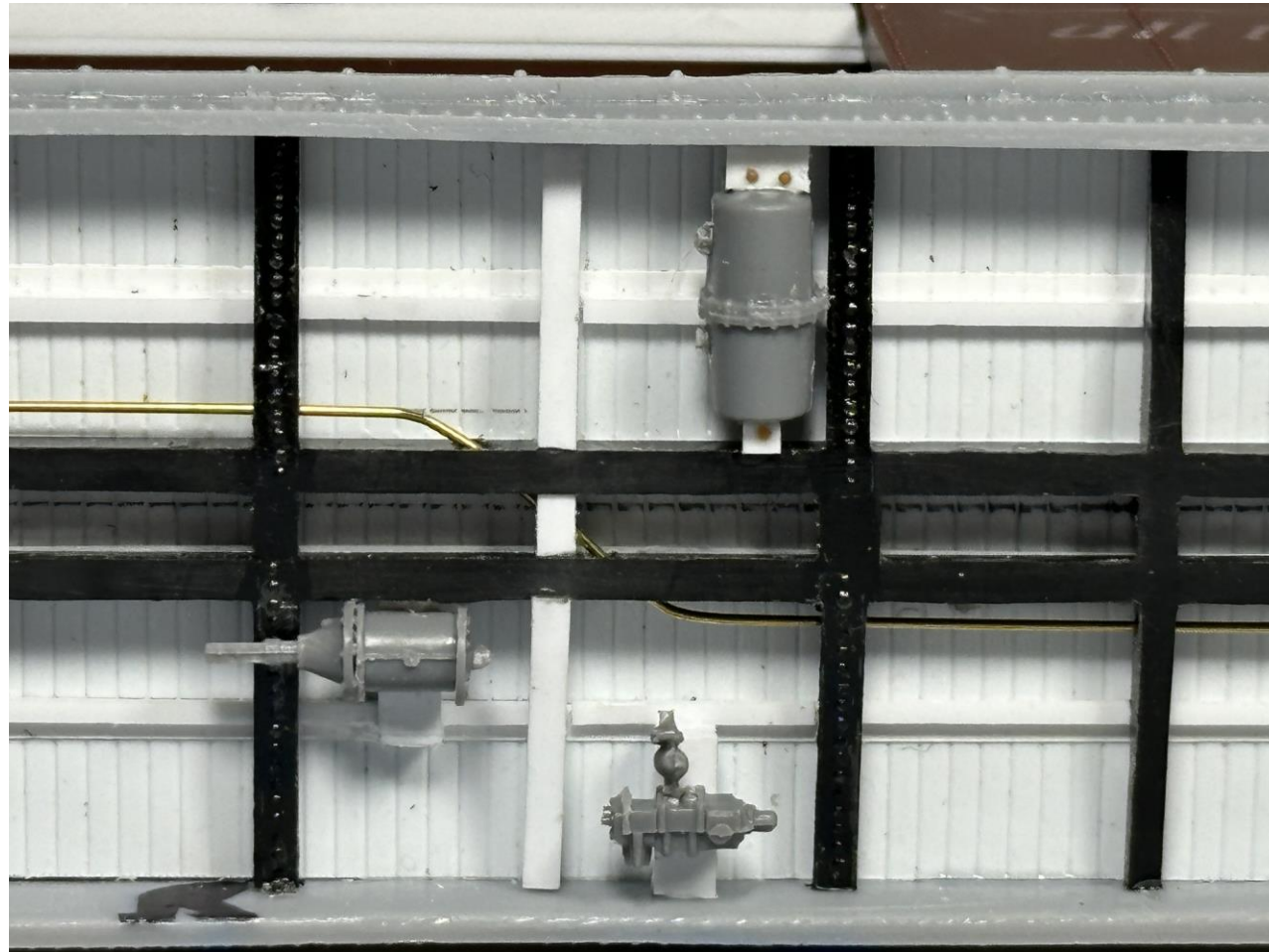
Tichy .020 rivet heads were used for the Reservoir mounting hardware



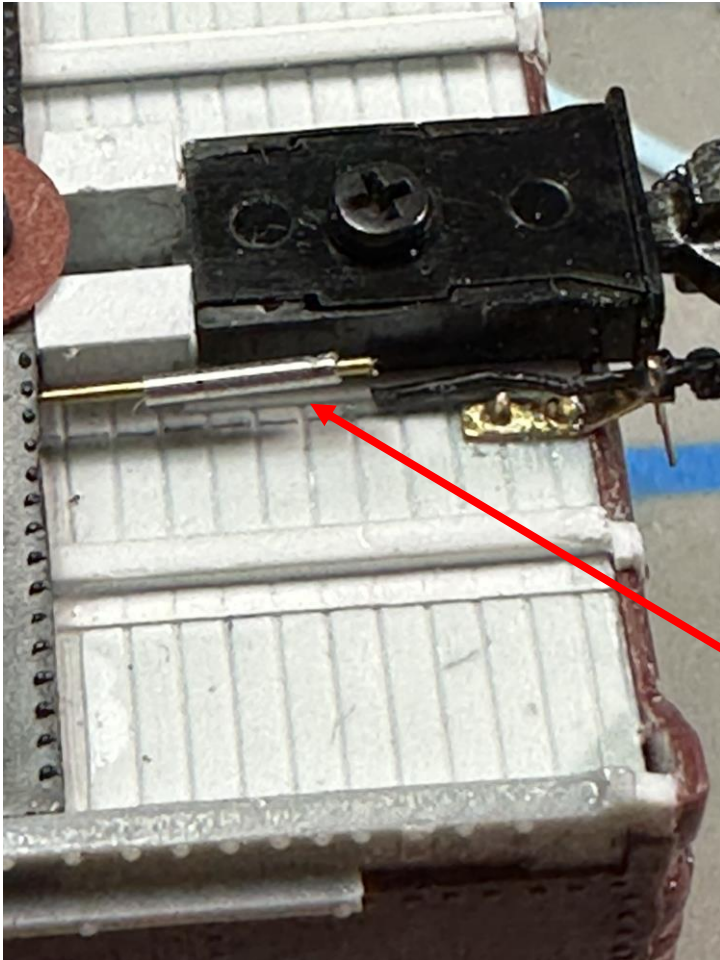
Below you can see the mounting of the AB components as seen on the previous slide.

Note the location of the Control valve and the air line

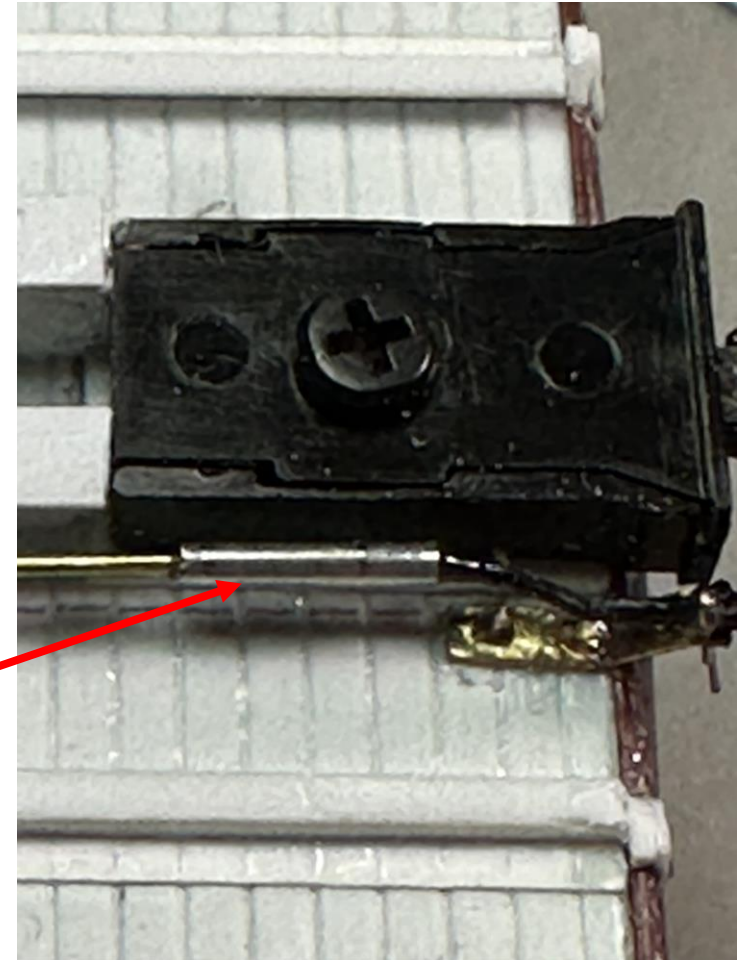
Note that the reservoir is mounted very close to the cross bearer



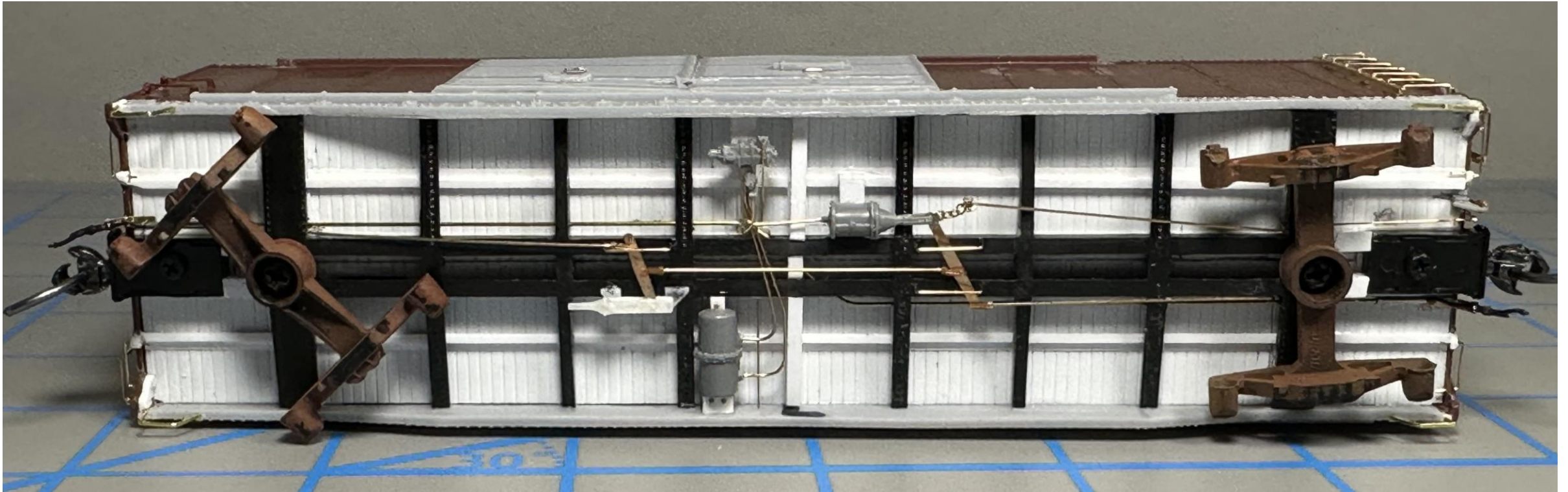
Yarmouth air line mounting brackets were assembled and installed as shown with Moloco rubber air hoses.



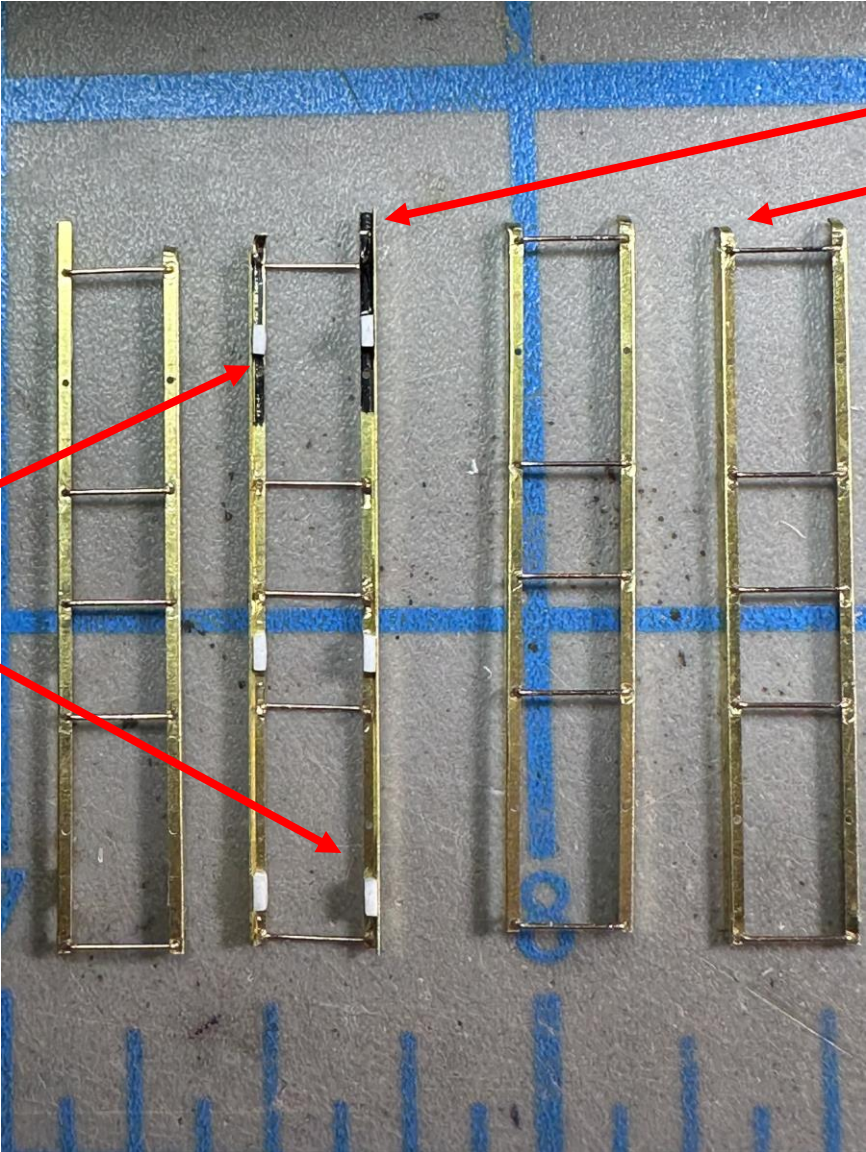
.032 Stainless Steel Micro Tubing from Ngeineering Co. can be seen on the left over the airline and on the right side over the Moloco rubber air hose and glued with CA glue. giving a connected look.



Tichy .0125 wire was used for the air lines and brake rods,
I followed a Brake Arrangement Drawing that was posted on the shake n take
groups.io
The Fe-26 used a Royal Slack adjuster. My slack adjuster is a 3D printed one
that was obtained from now out of business Shapeways



Yarmouth 18-inch rung spacing stiles were bent to shape and assembled with .010 Tichy wire



Tops of *stiles* were rounded except for the long one on the left stile on the side ladder.

.020x.030 styrene ladder standoffs were cut and glued to the inside of the stiles

Note 2 missing rungs on each ladder. I will use long ones and drill sides and ends for attachment

A Kadee Running Board was glued to the roof using Mig Ammo Ultra Glue for Photo Etch. This is much like Canopy glue but made for PE. Full cure is 6 hours and holds very well. After it dried, I applied a bit of CA glue as well



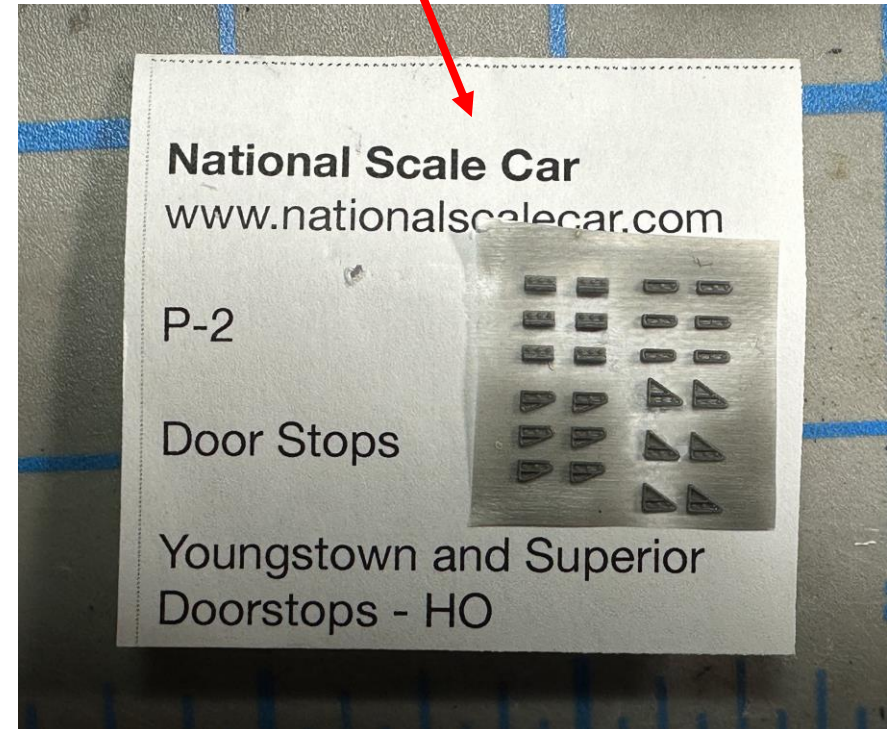
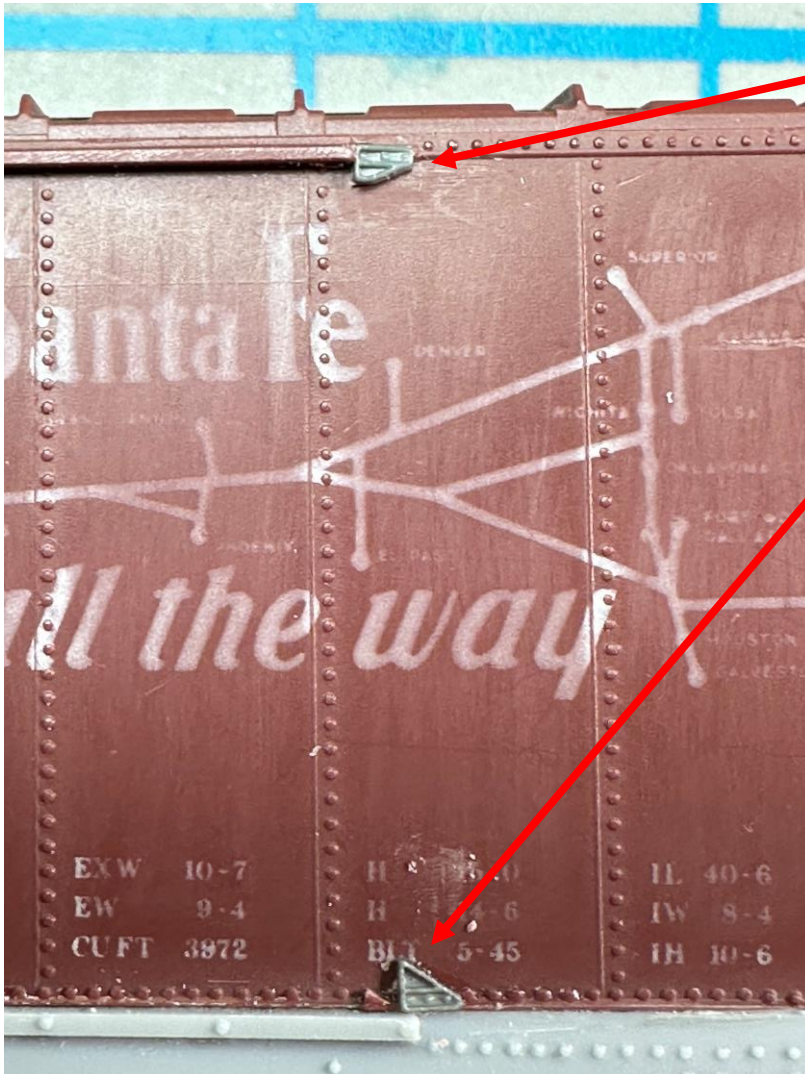
Kadee side
grabs were
installed at
this time

The defect card holder
was made from bits of
styrene

Doors were attached
Route and tack boards were added
Resin door handles were cut off and
replaced with .010 wire

Side ladders were installed
Also pictured are side steps formed
from DA .010x.018 brass strips as
from the General Arrangement
Drawing

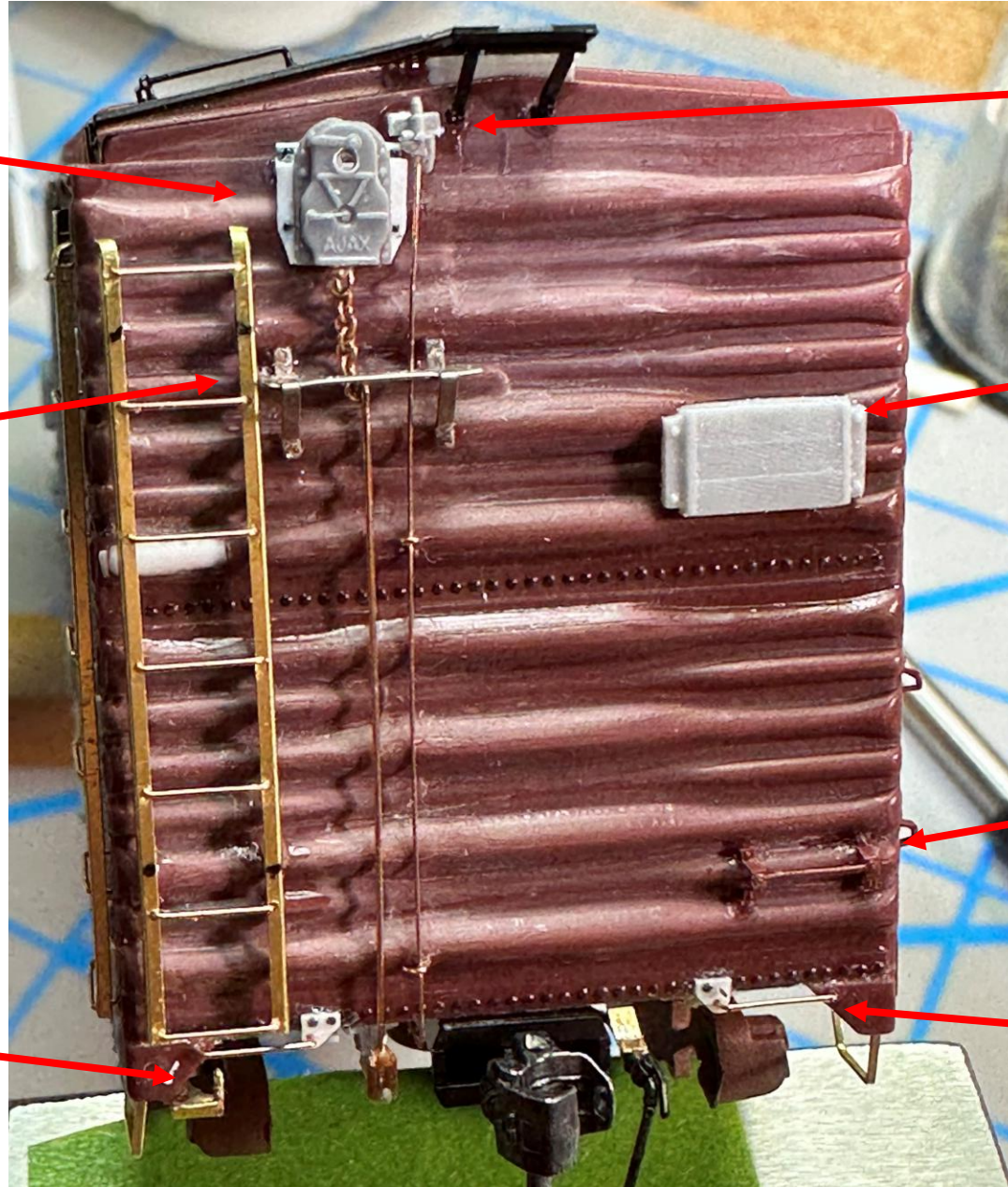
The right side upper and lower door stops were replaced with new one from National Scale Car as pictured below



A Tichy Ajax brake housing was mounted on styrene mounting brackets and Athearn harvested rivets.

A Yarmouth Photo Etch Brake Step from my scrap box.

Yarmouth Photo Etch cut lever bracket



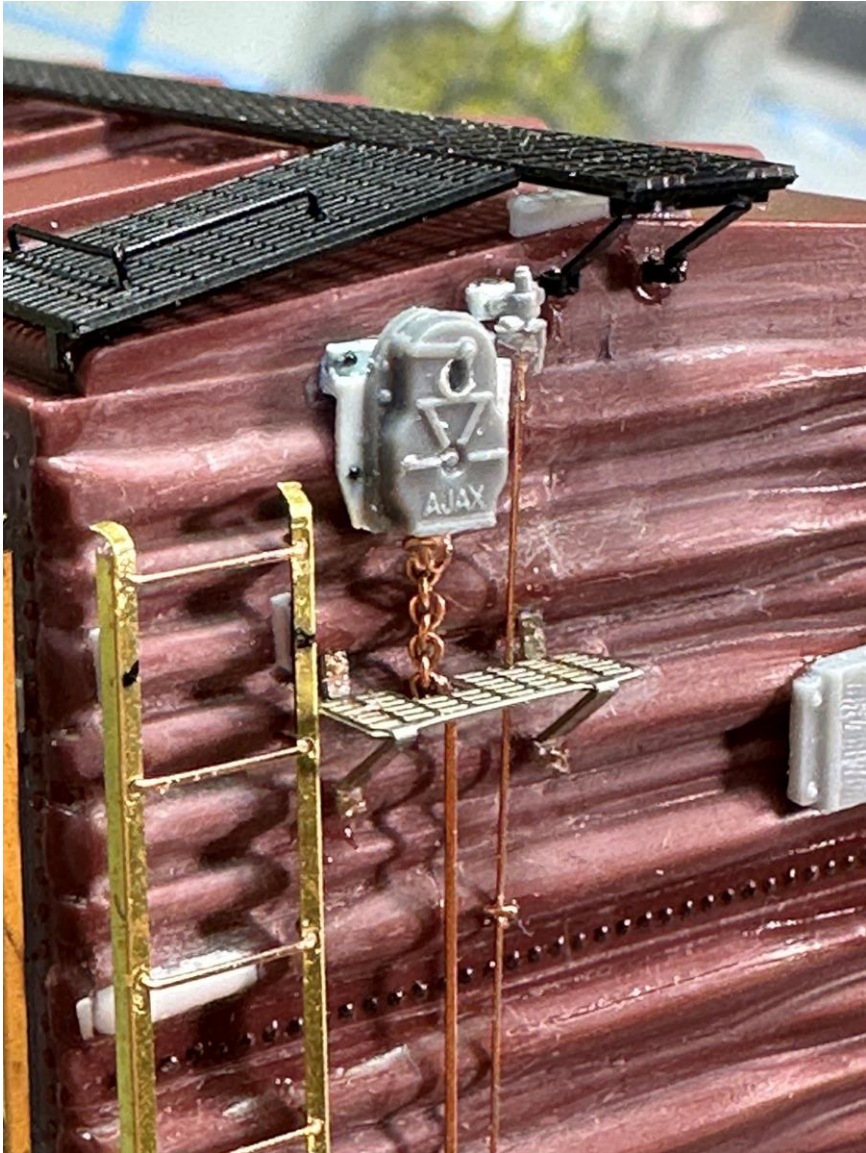
Precision Scale Retainer Valve

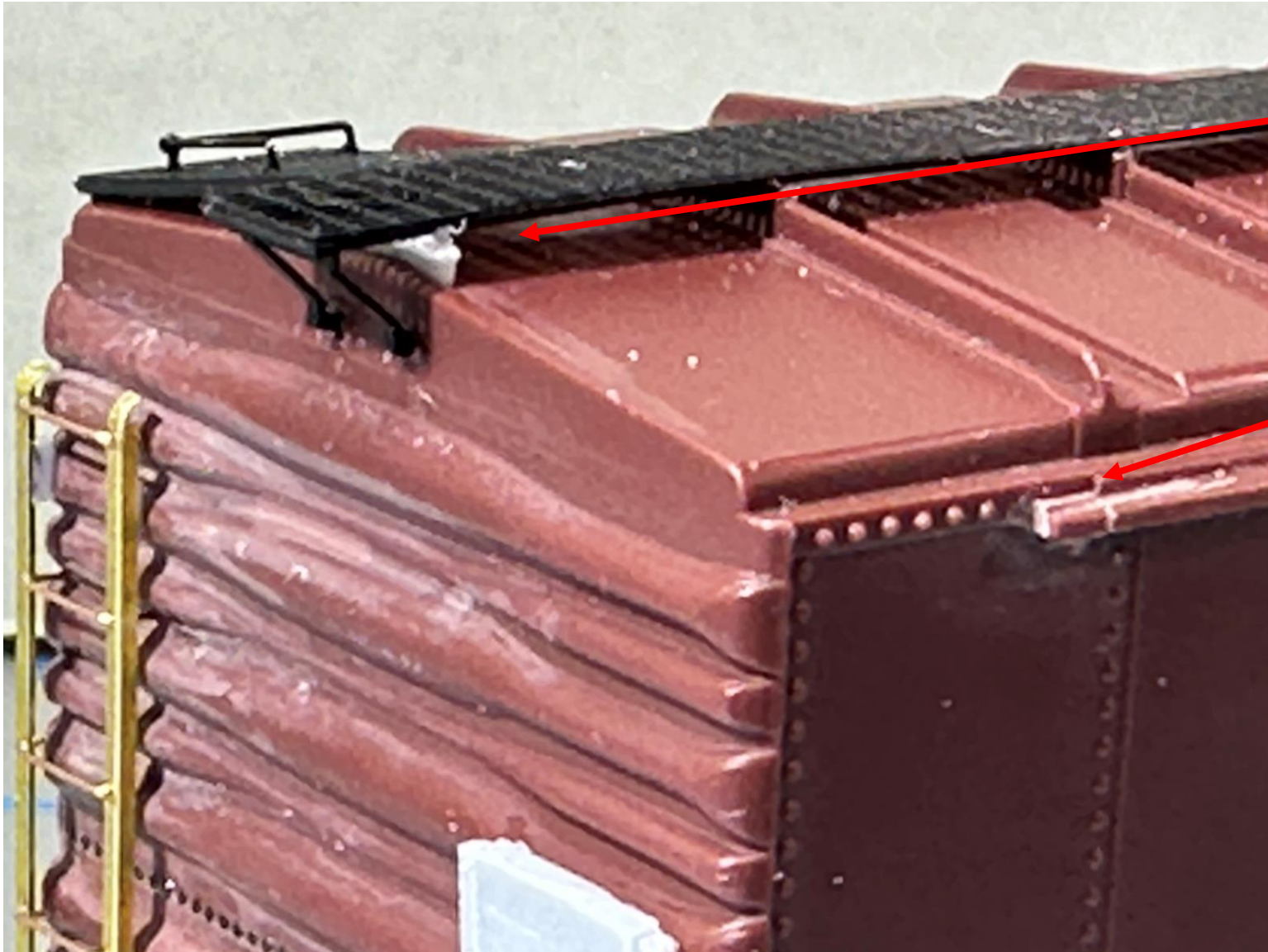
Resin Tack Board

Kadee side hand grab

.010 Tichy Wire

Detail views of the B End. Note the Micro Mark rivets that can be seen in the center and bottom





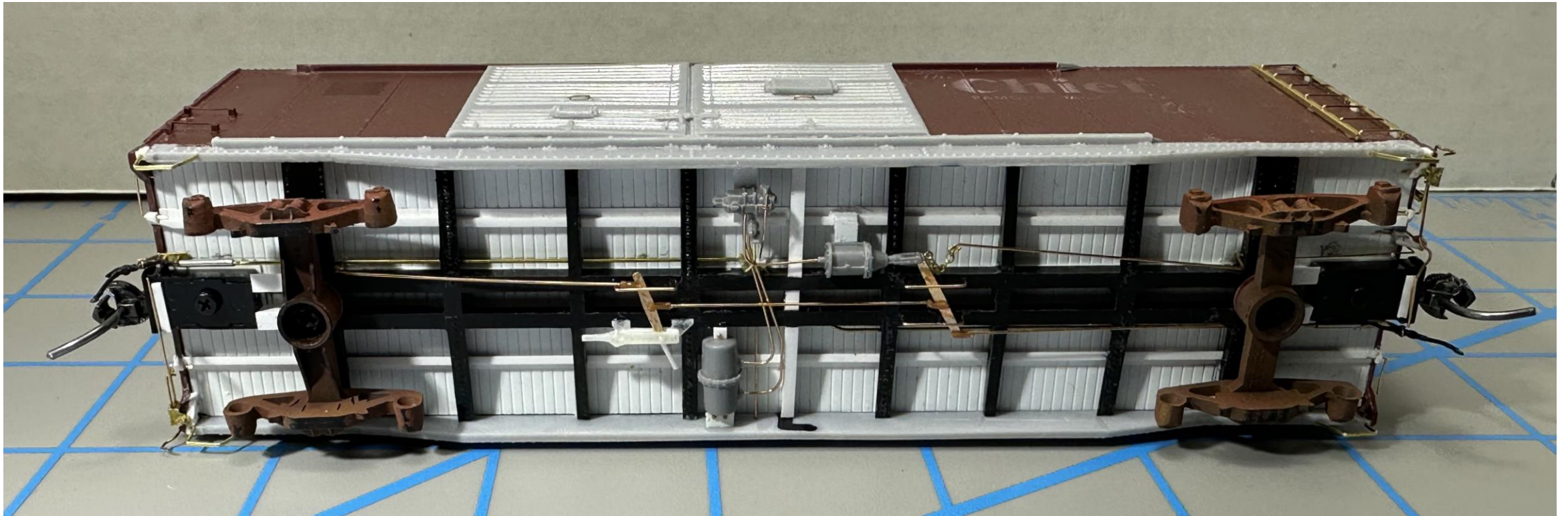
Moloco running board supports were added at both ends

The left end door stops were removed as seen in photos. It's unclear what kind were installed on these cars.

The finished B end with
Tangent Ajax brake wheel and
Tichy .0125 wire cut lever



Car ready for primer and paint

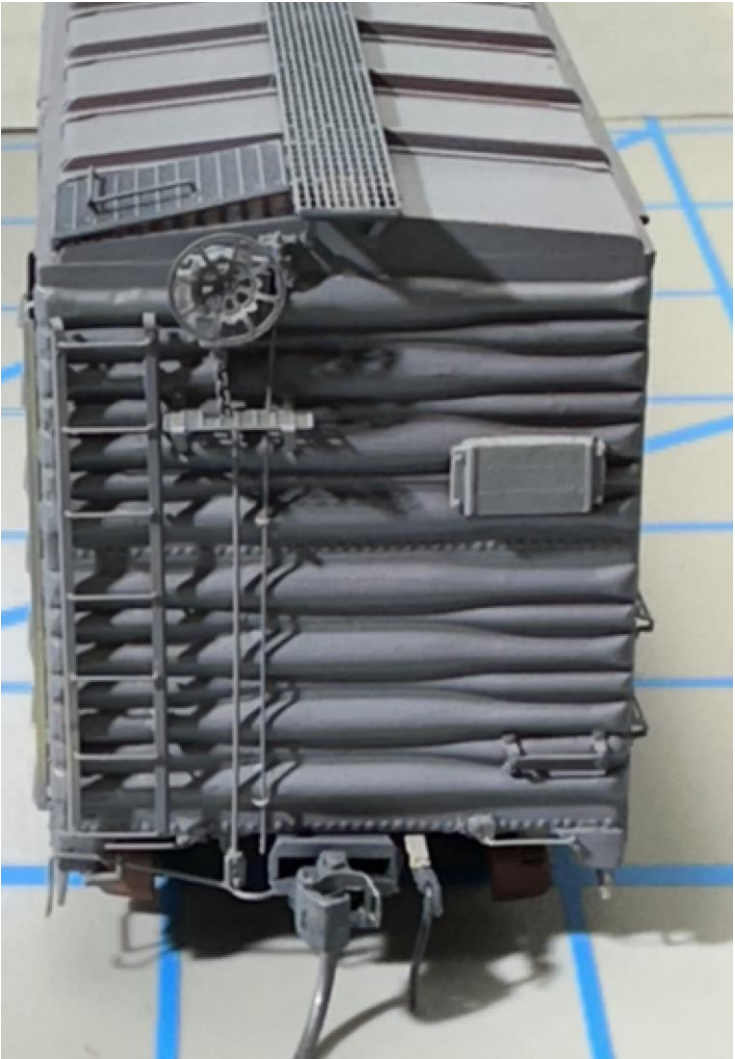
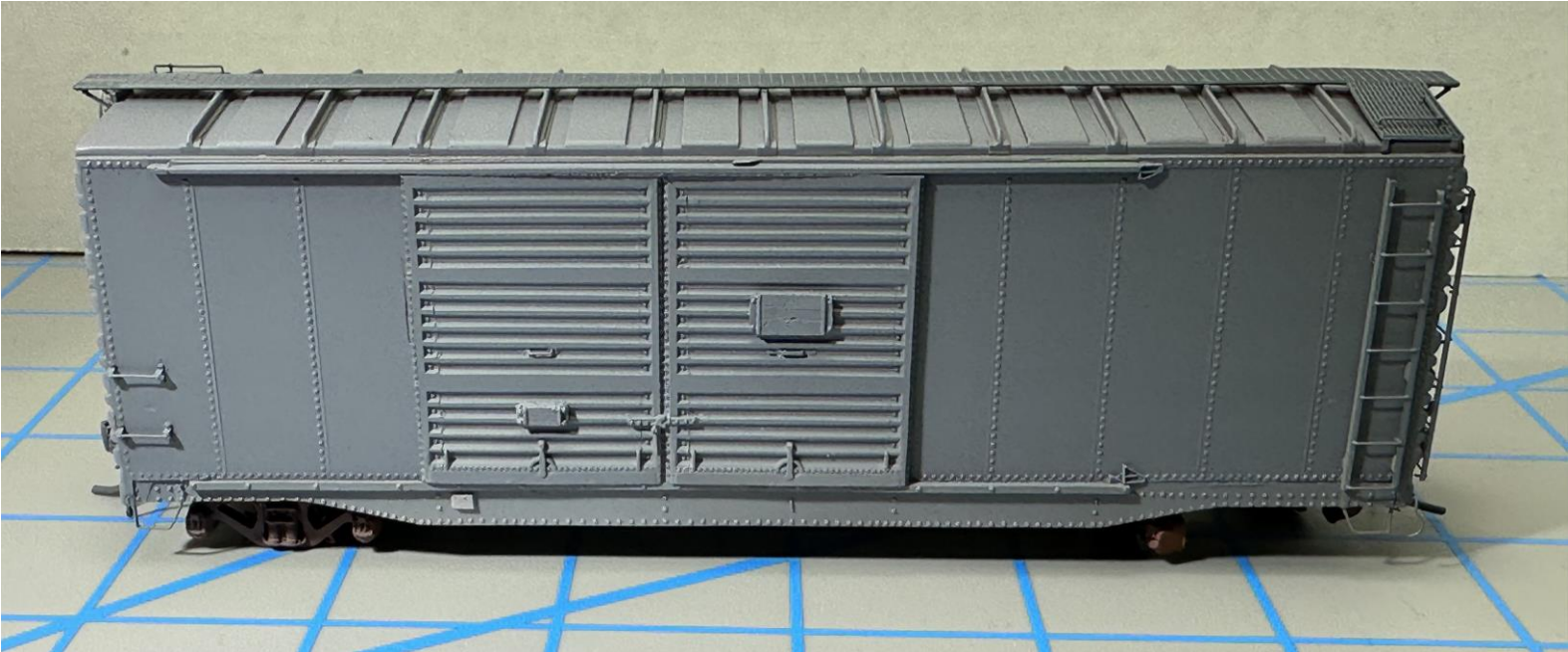




Before and After



Car primed with Badger Stynylrez gray primer



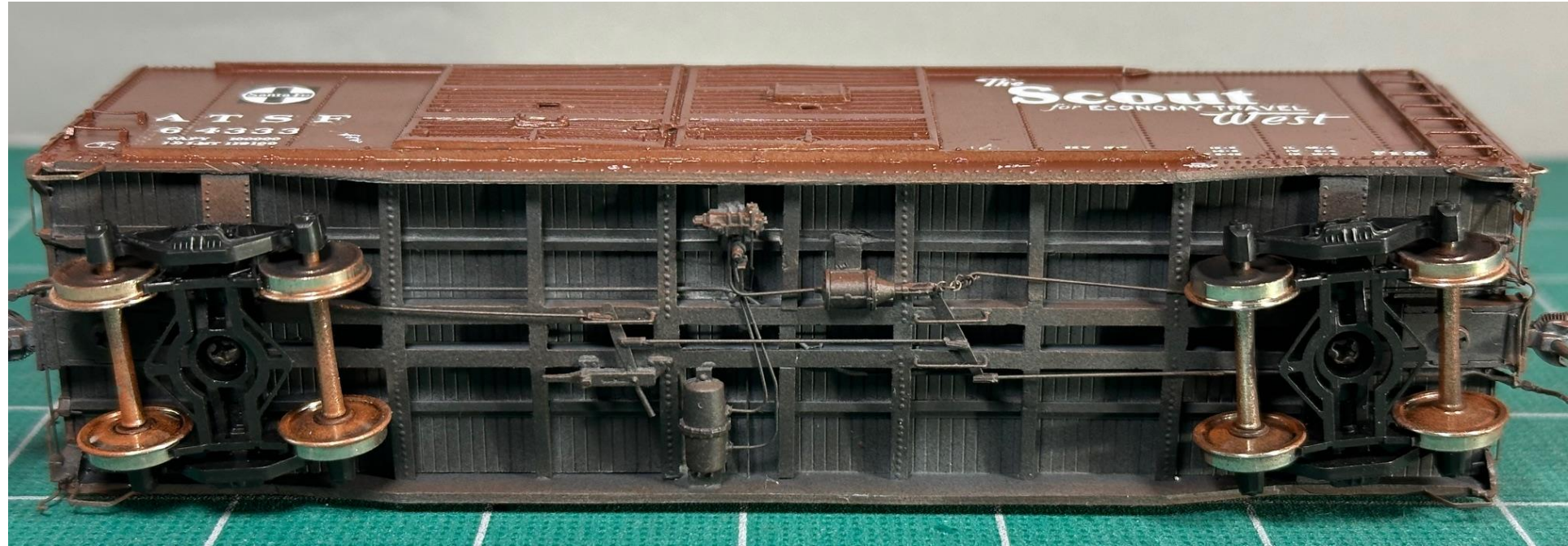
The car was painted with a custom mix of Vallejo Acrylic paint
Black Red(70.859) and 10% Saddle Brown (70.940 and a couple drops of yellow
(70.953)

The car was gloss coated with Holloway Quick Shine Multi-Surface Floor Finish



The Fe-26 was decaled and given another coat of Quick Shine Multi-Surface Floor Finish







Prototype information indicated that this car would have most likely still had a Black Roof. Here it is with Black Roof added and weathering



The Left Side

