Documentation Package

For

HO-Scale Car PRR 128265

Submitted as part of the NMRA AP

Car Certificate Requirements

By

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NMRA 101103

PRR 128265 Stock Car

I am pleased to present my Merit Award double deck 50-ton PRR Stock Car #128265 for evaluation. This car is a PRR Class K8 car and an AAR class SC car.

History: I spent several months searching the Internet for diagrams with as detailed set of dimensioned photos as I used in the construction of my first car SVL 65410. The search was largely fruitless. However, in my searching I garnered an interest in cars built by the Mather Stock Car Company, particularly those which appeared to be of wood construction. I received several very helpful comments from members of the Groups.IO Proto-Layout forum to my inquiries about the construction of Mather cars. One member attached a fairly detailed photo of a Proto 2000 Mather Stock Car which he had built. The detail clarified several questions I had particularly with respect to the shape of the vertical and diagonal side braces. Another member commented that "Mathers their cars were built with construction materials. Not railroad preferred" which help explain why I saw different shapes in the diagonal braces on the various Mather Stock Car photos I studied on line. I bought the Proto 2000 Mather Stock Car kit in September 2019 from which I began to make a series of detailed measurements to establish a "plan" base for my construction efforts. Subsequent to that a member of the Railroad-Lines / Car Certificate forum pointed me to a drawing in Train Shed Cyclopedia #17 (TS-17) of a PRR stock car which had 2 pages of extensive and detailed drawings with a large number of critical dimensions. With the detail on those pages I dropped all other measurement efforts and began working strictly from those two pages. Page 161 of TS-17 had a half-page photo of a PRR 12809 stockcar. I subsequently found on-line a great full-page photo of a PRR 128079 stock car from the Bill Lane hi-resolution collection which became my photo reference for conformity purposes. It is noted that there is no Circle Keystone logo on this car.

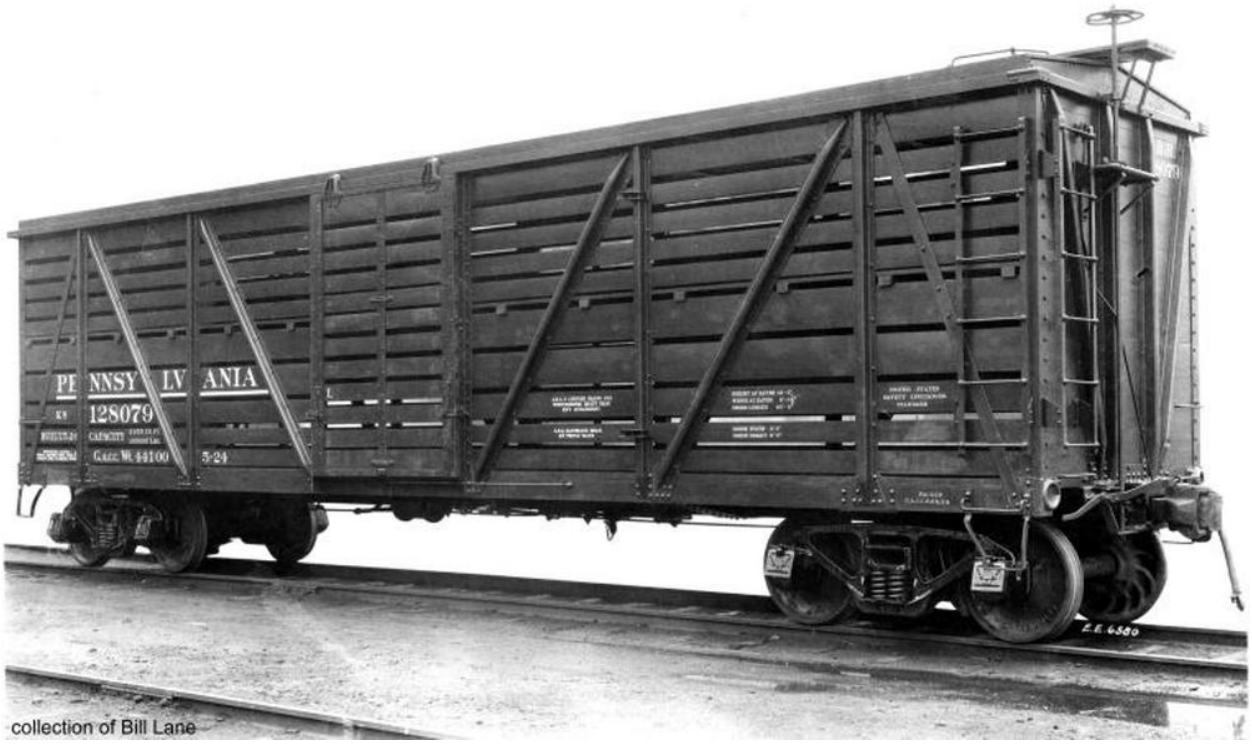


Photo 1 PRR Stock Car 128079 from the Bill Lane hi-resolution collection

Plans: The plans for my stock car include:

- Photo from the Bill Lane collection of a PRR 128079 Stock Car. See Photo 1 above. I could not find any photos of a PRR 128265 Stock Car for which I had decals.
- Detailed drawings from Train Shed Cyclopedia #17 Pages 160 and 161. See Appendix pages 1 and 2.
- Excel spreadsheet where I converted stated and measured dimensions from TS-17 pages into their HO-scale equivalents and then specifically what piece of Evergreen Strip Styrene or Northeastern Scale Lumber I would use to fulfill that dimension. Also included on some of the Excel pages was the delta between the HO-scale equivalent dimension and the dimension of the Evergreen Strip Styrene or Northeastern Scale Lumber I chose to use. See Appendix pages 3 to 7 for these spread sheets.
- Cadrail drawings of most of the detailed parts for this car. Included in the drawing are construction directions, part sizes, and material to be used. See Appendix pages 8 to 15

Notes:

1. Pages 160 and 161 of TS-17 contain a plethora of excellent dimensions which I used extensively. However, there were numerous places where there were no dimensions at all, thus creating a quandary. My solution to this quandary was to measure with a dial caliper the width of a collection of dimensioned parts and then to create a "Scale Factor" and use this "Scale Factor" to determine the dimension of a non-dimensioned part. i.e.

   "Scale Factor" = measured dimension / stated dimension (actually this creates an inverse scale factor).

   To my surprise the "Scale Factor" on pages 160 and 161 were not the same. The inverse "Scale Factor" for dimensions from page 160 was 0.0172, and from page 161 0.021.

2. There is an annotation on the side view on TS-17 page 160 that states that carriage bolts were used to secure the wooden side boards to the metal braces on the car. It is quite logical to presume that the rounded head of the carriage bolts were on the inside of the car so as to not provide any perturbances that could snag the skin / hide of the animals. As such what is on the outside of the stock car is the working end of the carriage bolt, a washer, and a nut. My best detailed representation of these three items was to use Tichy Train Group 0.025" rivets, part number 8081. Using individual Tichy rivets, as painful as it was, allowed me to control the location of the rivets in a very detailed manner thus highly conforming to the carriage bolt pattern on the TS-17 drawings. I felt the time and effort to install these 900+ individual Tichy rivets (whose counting) was superior to using some specified / fixed pattern as dictated by the round head rivets on a decal sheet.

3. While making measurements from TS-17 pages 160 and 161, and expanded / close-up views from these pages, for the ladder dimensions it was brought to my attention that high level professional technical drafting such as for Model Railroader magazine etc. does allow for "shadows" in the drawing. These shadows on TS-17 page 161 caused some uncertainty

in the exactness of the measurements I was taking. To alleviate this uncertainty, I averaged the dimensions I made from several original and expanded views of the ladders. See Appendix page 7 of the Excel spreadsheets for these calculations.

Conformity:

I used a combination of the Excel spreadsheets and my Cadrail drawings to construct a stock car that very highly confirms to the dimensions on TS-17 pages 160 and 161. On the Excel spreadsheets for the car side, end, and cattle door data there is a column which indicates the delta between the HO-scale size of a board and gap and the size of the Evergreen Strip styrene or Northeastern Scale lumber piece I used to implement each board or gap. I also measured with a dial caliper the width of the Northeastern Scale lumber 1"x 6", 1"x 8" and 1"x 10" boards before I used them in the construction of the sides, ends and cattle doors.

The carriage bolt ends, i.e. rivets, were installed in a conforming pattern to what is shown on the vertical braces, the diagonal braces, the cattle doors and the corners of the detailed diagrams on TS-17 pages 160 and 161.

Appendix page 16 shows a page from http://prr.railfan.net/freight/classpage.html?class=K8 which states what trucks were used on the PRR K8 cars. Photo 2 below shows the package of trucks that I used on my PRR stock car.

Photo 2 Trucks used on my PRR stock car

Construction:

My main construction materials were Evergreen Strip Styrene, Northeastern Scale Lumber (NSL), Plastruct Angle, and Evergreen Sheet Styrene. My main glues were Aleen's Tacky Glue, Methyl Ethel Ketone, Gorilla brand CA, and Elmer's Glue Stick. I began by building the sides of the stock

car. The Cadrail drawings, on Appendix pages 8 and 9, and Appendix pages 3 to 5 of my Excel spread sheet were my guides in developing the sides, ends and cattle doors of this stock car. Photo 3 shows how I constructed my initially over-length car side #1. The blue painters tape has the sicky side up to secure the NSL side boards. The pieces on-edge are strips of Evergreen Strip Styrene that are used as spacers, i.e. they represent the gaps in the side and will be removed later in the construction process. A similar process was used to create side #2 of the stock car.

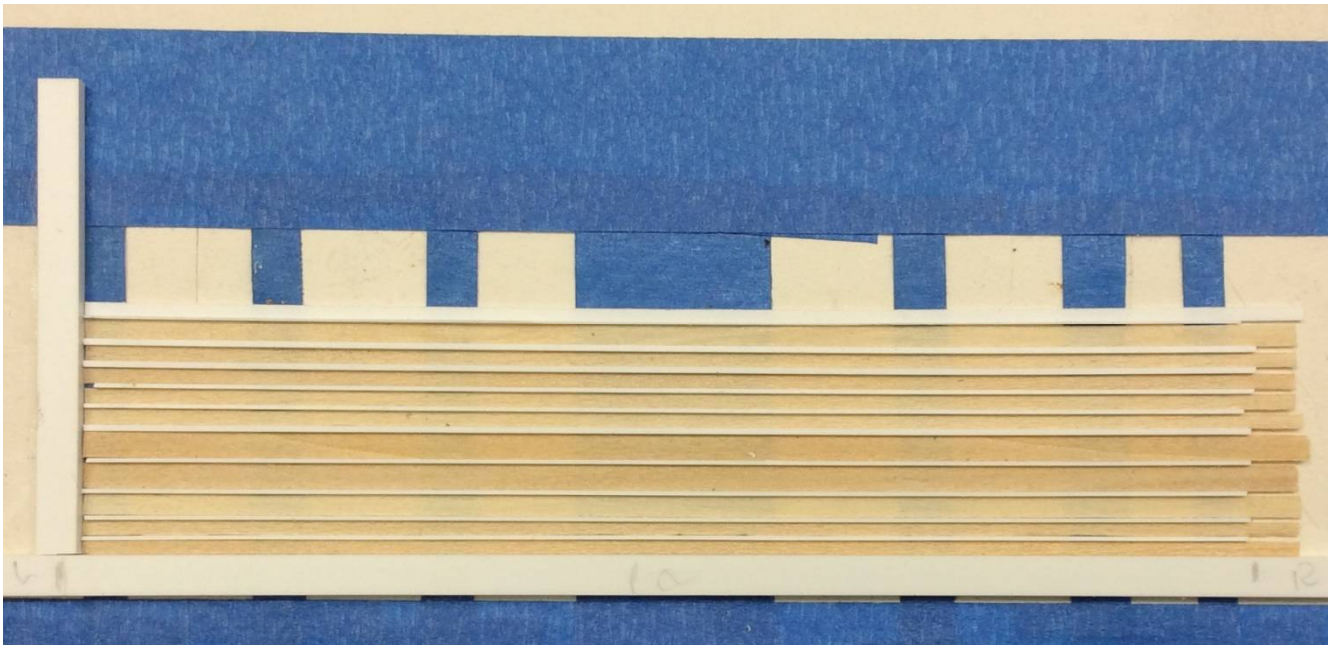


Photo 3 Car side in-process construction

The construction of the ends of my stock car were a little different. The drawing on TS-17 page 161, Appendix page 2, shows that the width of the end boards was 5.25”, kinda weird dimension, almost as if this car was built by the Mather Car Company. In order to maintain conformity with the stated dimension I created a tool/jig, shown in Photo 4, which allowed me to cut a piece of 1”x 6” NSL down to 1”x 5.25”.

Photo 4 Tool/jig used to cut a piece of NSL 1”x 6” lumber down to 1”x 5.25”. The sliver that was cut off can be seen in the photo.

Photo 5 shows the means by which I aligned these over-length 1”x 5.25” NSL boards, without gaps, to create the two car ends.

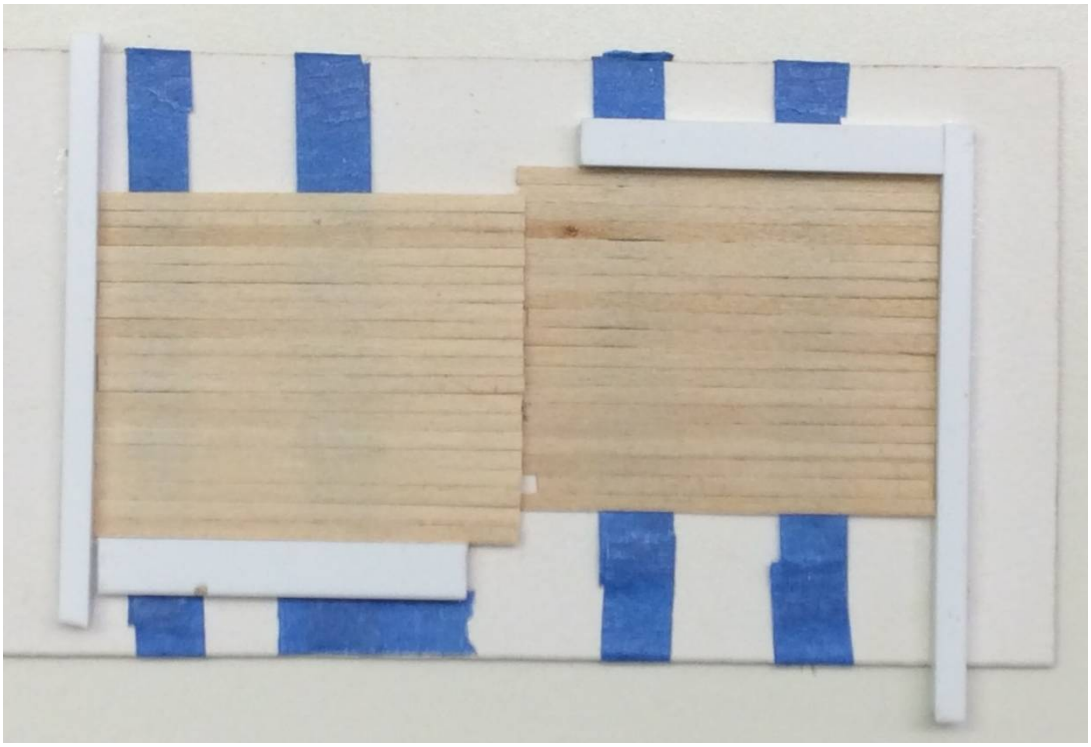


Photo 5 Stock car ends in construction

The construction of the two cattle doors was similar to the construction of the two sides as shown in Photo 6. Note the Evergreen Styrene Strips used to create the gaps between the cattle door boards. See the Cadrail drawing on Appendix page 8.

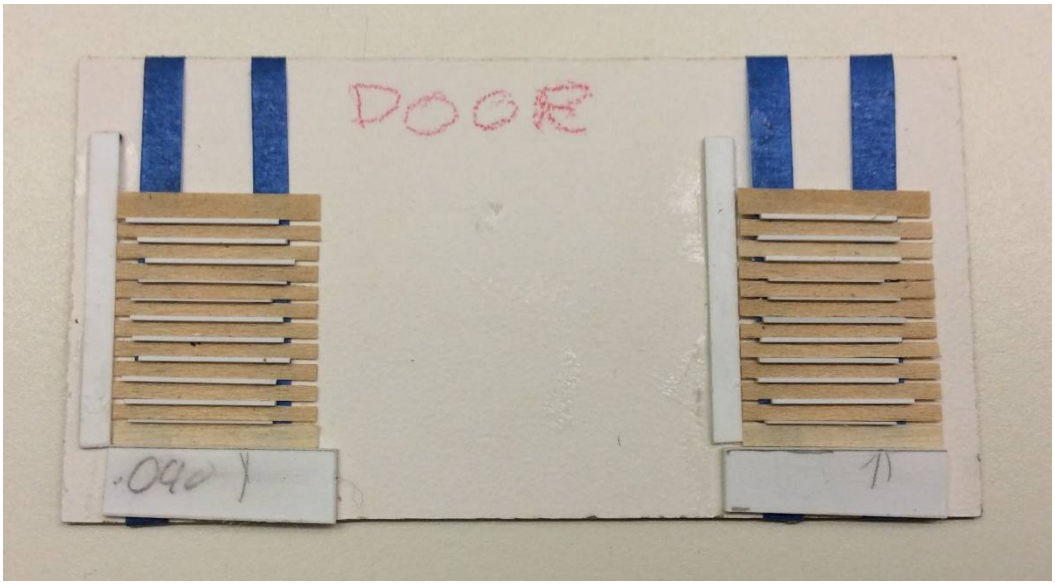


Photo 6 Stock car cattle doors in construction

I then trimmed the above items to the specific length shown in the Cadrail drawings.

The next hurdle was the vertical and diagonal braces. I constructed all 24 braces by MEK-ing two pieces of Plastruct 3/64" angle back to back and appropriately tapering the ends. The 3/64" width was the smallest I could find and still allow room for the Tichy rivets which represented the working end of the carriage bolt, a washer and bolt. In the end even this narrow width provided some problems later on in the construction effort. Photo 7 shows a boring image of a brace before any tapering was done on it.

Photo 7 Back to back pieces of Plastruct 3/64" angle glued together to create one of twenty four braces

Photo 8 shows an in-process view of the brace installation process and Photo 9 shows a completed side with all braces installed and C-channel side sill installed.

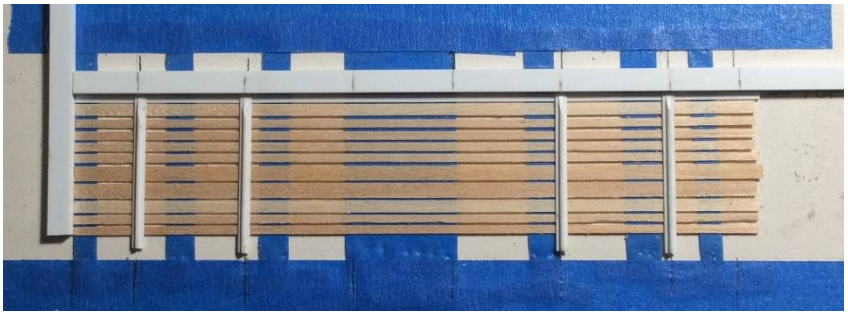


Photo 8 Brace installation process

Photo 9 Side 1 with all vertical and diagonal braces installed

I then installed the cattle doors and the 0.060" Angle Evergreen Styrene corner braces.

While the sides and ends were still unassembled, I began the "xyzwt" task of inserting the 900 + rivets on the braces and corner angles. I used Methyl Ethel Ketone as the solvent to secure the rivets to the braces. Photo 10 is a view of the sides and ends with all rivets installed and ready for assembly into the real car.

Note the two door handles on cattle door boards #1 and #8. These were made by bending a piece of Detail Associates 0.012" brass wire over a scrap piece of 2"x10" Evergreen Strip Styrene. I used

scrap pieces of Evergreen Strip Styrene on the inside of boards #1 and #8 as the means to secure the U-shaped brass pieces to the car. Two pieces of 2”x2” Evergreen Strip Styrene were placed under the U-shaped brass pieces on the outside of the door as standoffs while the CA dried. Also note on the first vertical brace to the right of the cattle door I installed two door stops, with rivets, per TS-17 page 160, and Cadrail drawing on Appendix page 12.

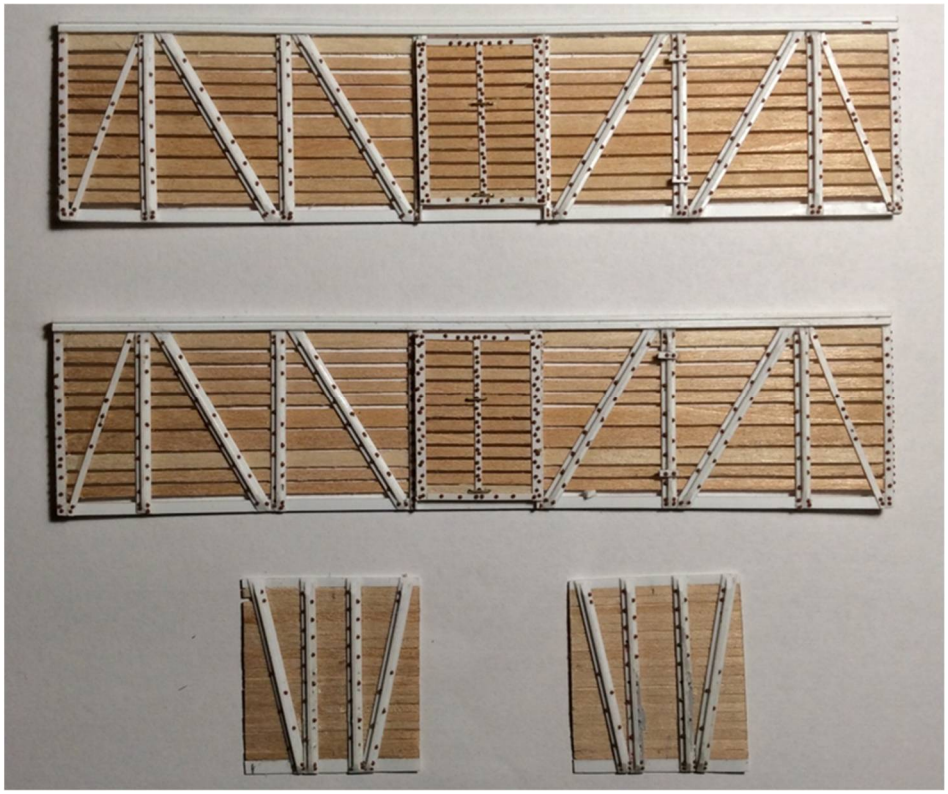


Photo 10 Car sides and ends ready for assembly into a stock car

I then assembled the cattle door support rail header per the Cadrail drawing on Appendix page 12. I initially built a prototype of this door rail header, but I was not satisfied with the spacing for the wheels in the slot and changed one of dimension to allow for more clearance.

Photo 11 shows the first view of the assembled sides and ends of my stock car. Note the pieces of scrap strip styrene on the inside of the door to which I CA-ed the U-shaped door handles.

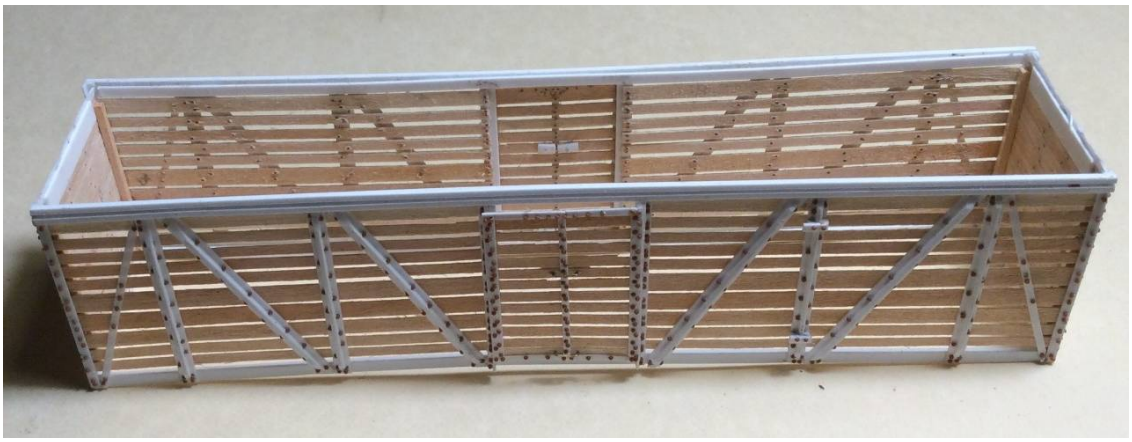


Photo 11 First view of assembled sides and ends

The cattle door hangers were built according to Cadrail drawing on page 12 of the Appendix and installed on both cattle doors.

I then painted the car first with Mr. Hobby McFinishing Surfacer 1500 Gray, which is a super fine primer, and then Scalecoat Boxcar Red #3 paint. I cannot find the source reference for the Boxcar Red color. But being of Irish descent (i.e. frugal) it would not be my MO to spend money on both a spray can and a bottle of Scalecoat paint without a good reference.

The next item on the construction list was the 4 ladders. Per Note #3 above this is the only place where I had trouble determining the exact dimensions as this is the only place where it seems that the original draftsman used shadows in his drawings. See the ladder Cadrail drawing on page 13 of the Appendix. The ladder stiles are pieces of 2”x2” Evergreen Strip Styrene. The ladder rungs are made from 0.008” Tichy phosphorus bronze wire. Photo 12 shows the 4 completed ladders.

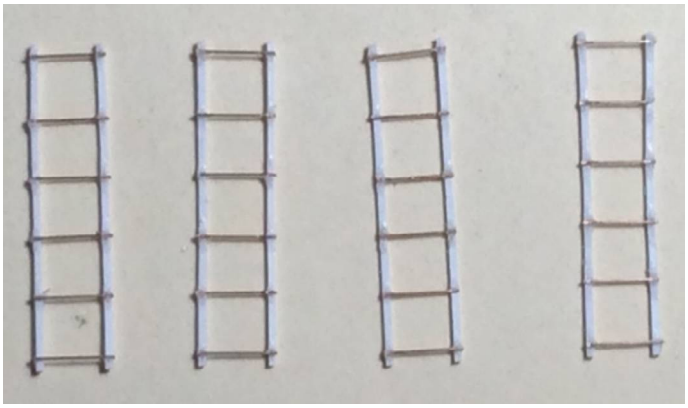


Photo 12 Stock car ladders

Per TS-17 drawings the ladders are mounted on angle shaped brackets. I represented these brackets with pieces of Plastruct 3/64” angle. Not all of the angle pieces face in the same direction. Because of the height of the vertical and diagonal braces I had to add a thin pad under each angle bracket such that the ladders cleared the braces. I them primed, painted and installed the ladders on the sides and ends of my stock car.

Polling pockets and brake platform were the next two items constructed, primed, painted and installed on my stock car.

One of the goals I had as I started construction of this car was to make sure that the ends of the floor boards, which extend to the outer edge of the side sills, show that the ends were stained / worn wood and not painted Boxcar Red. That is why I painted the car sides and ends before I installed the wooden floor. Per TS-17 page 160, Appendix page 1, the floor boards are of that weird 5.25" width. I used the tool/jig shown in Photo 4 above to cut 81 floor board pieces down to 2"x 5.25" from 2"x 6" NSL pieces. The floor board pieces were individually stained with a mixture of alcohol, 40 drop of India brown ink and 8 drops of India black ink. The floor board pieces were then tediously installed in small groups of from 1 to 3 boards at a time. I made sure that the ends of the boards were clearly visible on the outside of the car.

TS-17 page 160, Appendix page 1, clearly shows what I interpreted as the ends of cross-car supports for the upper deck floor. However, I could not find any evidence of what held up the upper deck across the span of the cattle door. I concluded that the boards of the upper deck ran length-wise in the car.

My stock car has been in service for about 5 years or so and has carried many loads of cattle and as such the inside of the car-side boards has seen a lot of service shall we say politely. The sides were made out of Northeastern Scale Lumber which has a very light tan color. I felt this color did not appropriately represent the impact of 5 years of service so I painted the insides with Folk Art Barn Wood acrylic paint and then I applied Bragdon Weathered Brown and Soot powders to create a well-used appearance. See Photo 13.

Photo 13 Interior wall of stock car

Underside construction proved to be a little challenging, but also interesting. First as noted on TS-17 page 161, Appendix page 2, the two center beams are actually I-beams with the inner flange of each removed. See Photo 14. See Appendix page 11 for the Cadrail drawing of the Center Sill.

Photo 14 Center Sill I-beams with inner top flange of I-beam removed

These I-beams are mounted on a piece of 0.25” x 20” steel plate which is attached to the underside of the nicely stained floor boards. I used my standard Tichy Train Group #8018 rivets to simulate the working end of the carriage bolts which were used to secure the steel plate and two center sills to the car floor. I simulated this steel plate with a piece of 0.010” Evergreen Sheet Styrene. The design and construction notes for the truck bolsters and the cross bearers (i.e. cross member) are shown in the Appendix on page 10. The ends of the bolsters and cross bearers are designed and constructed to fit inside the c-channel side sills. The diagonal slope on the cross bearers was hand sanded in order to get the correct slope. I made a template as shown in Photo 15 to allow me to easily cut the identical slopes on the cross bearers.

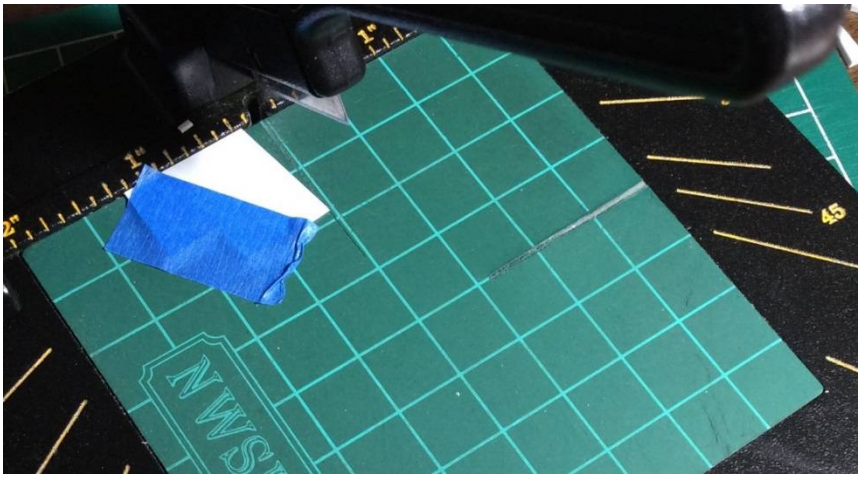


Photo 15 Template used on my NSWL Chopper II to cut the diagonal slopes on the cross bearers

The bolsters and cross members each had a piece of Plastruct 3/64” angle attached to each side as a means to secure the cross bearers and bolsters to the car floor. Four pieces of Evergreen Strip Styrene 0.100” H channel were installed as the center sill internal cross members.

As mentioned at the top of this tome I had purchased a Proto 2000 kit for a Mather stock car. In the end I used very little if anything from this kit. What I did notice was that the arrangement of the cross bearers on that kit seemed to be in a standard freight car configuration. What I learned and implemented in my PRR 128265 Stock Car was that the cross bearers were located under the

vertical braces which from a load bearing standpoint seems very appropriate. I still think that there should be one or two cross bearers under the cattle door. But I could not find any compelling photos to support my misconception. A photo of the completed underframe before it was primed, painted and attached to my stock car is shown in Photo 16. The AB brake system components needed to have support pieces installed and these are shown in Photo 16 also

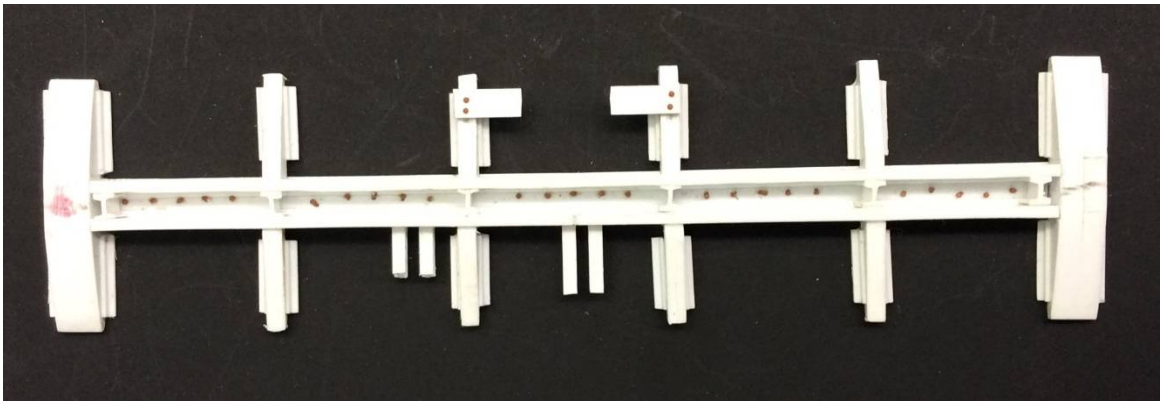


Photo 16 Underframe and AB brake system support pieces, note rivets on steel plate and on the air reservoir mounting supports

The brake system is a Cal-Scale AB Brake System. I used Detail Associated 0.019" brass wire for the main air line which extends from one end of the car to the other. All other lines or metal rods, i.e. the brake shaft connections, are Detail Associates 0.012" brass wire. Couplings were installed where the main air line bends.

On my prior cars I was not satisfied how the main air lines, the line up to the air retained valve, brake lines etc. crossed the cross members and bolsters. It came to my attention that the bolsters and cross bearers of my stock car did not, by design, come even with the top of the side sills when viewed from the bottom of the car. To correct both of these items I cut V-shaped notches in the bolsters and cross bearers where the air lines and brake lines etc. crossed. (I missed doing the notch for the brake shaft line). After I had installed all the air lines and brake lines in their respective notches, I covered each cross bearer with a piece of 0.01" x 0.08" Evergreen Strip Styrene, which left a very credible appearance. A square piece of 0.02" Evergreen Sheet Styrene was secured to the top of the two bolsters, and a piece of 0.02" x 0.08" Evergreen Strip Styrene was glued to the sloped surfaces of each bolster. The completed and painted underframe and AB Brake System prior to installation is shown in Photo 17. After installation pieces of Evergreen Strip Styrene 0.060" H-column were installed diagonally from the corners of the underside of the car to the nearest bolster to complete all the structural parts of the underframe.

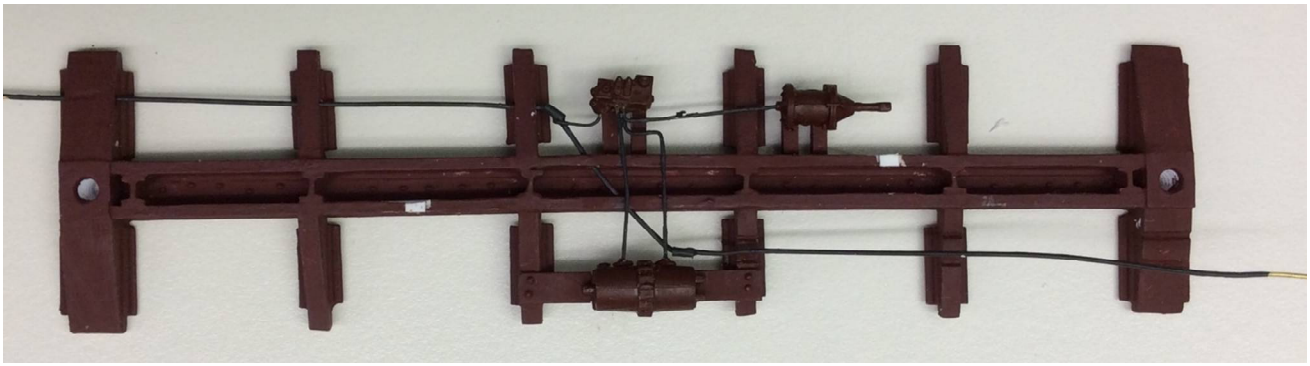


Photo 17 Completed underframe and AB Brake System

The last major piece of construction was the roof. TS-17 page 160, Appendix page 1, shows what looked to me as strange ends of roof trusses. I later learned that what I was looking at where the ends of hat channels, or carlines. These are frequently made from metal pressed in various shapes. After studying options, I made my 20 carlines by MEK-ing two pieces of 0.060” angle together each 0.624” long. The best photo I took of the carlines mounted on one of the two roof panel is the close-up view shown in Photo 18.

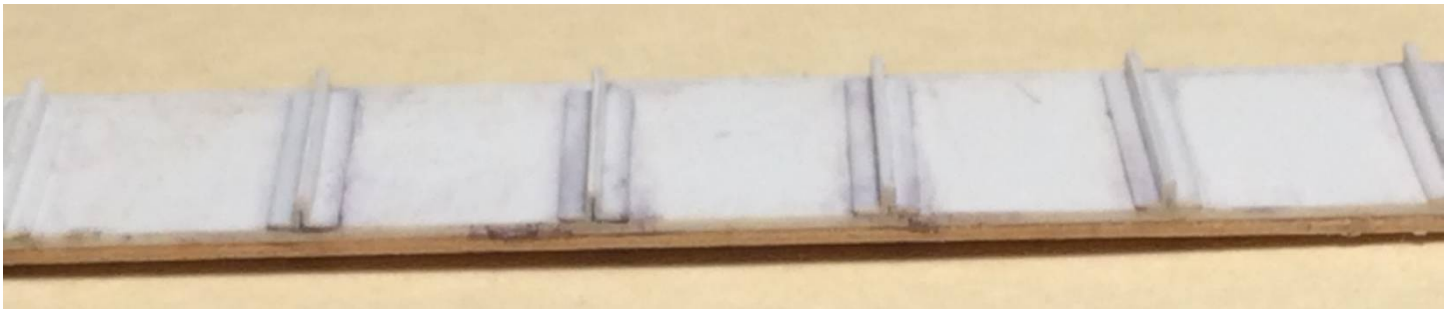


Photo 18 Close up view of carlines

TS-17 page 160 shows that the roof is not of the raised panel style; but rather boards that run the length of the roof. I confirmed the lengthwise configuration of boards from two photos I found on-line. As shown on Appendix page 14 the location of the first and last carline is slightly less than the spacing of the other carlines across the roof. Elmer’s Glue Stick was used to secure the NSL 2” x 4” roof boards to a piece of 0.030” sheet styrene and then the roof boards were stained and weathered.

Time Out! We gotta take care of our future “loads”. My stock car has just had a full interior cleaning to remove you know what and the associated odor. Both decks of this stock car now have a bed of fresh straw spread over the them. In addition, one bale of salt-free hay and one bale of sugar-free hay have been placed on the lower deck (see Photo 19) and 2 bales of gluten-free hay have been placed on the upper deck for the snobbier future “loads” (see Photo 20).

Photo 19 Hay bales and straw on the lower deck

Photo 20 Hay bales and straw on the upper deck

Information for the construction of the hay bales came from an entry I found on the Railroad Line Forums / car certificate forum. The strands of hay were cut from a ball of twine, see Photo 21, that I had in my garage and were about 1/8” long. The prototype bales were 16” x 21” x 39”.

Photo 21 Ball of twine used to make hay and straw

Okay back to the roof stuff. I used a piece of 0.030” sheet styrene to make the roof end panels which sit just above the car ends and were shaped with a jig similar to what I used for the cross bearers.

The two roof hand grips and support legs were formed from 0.012” brass wire as shown in Photo 22.

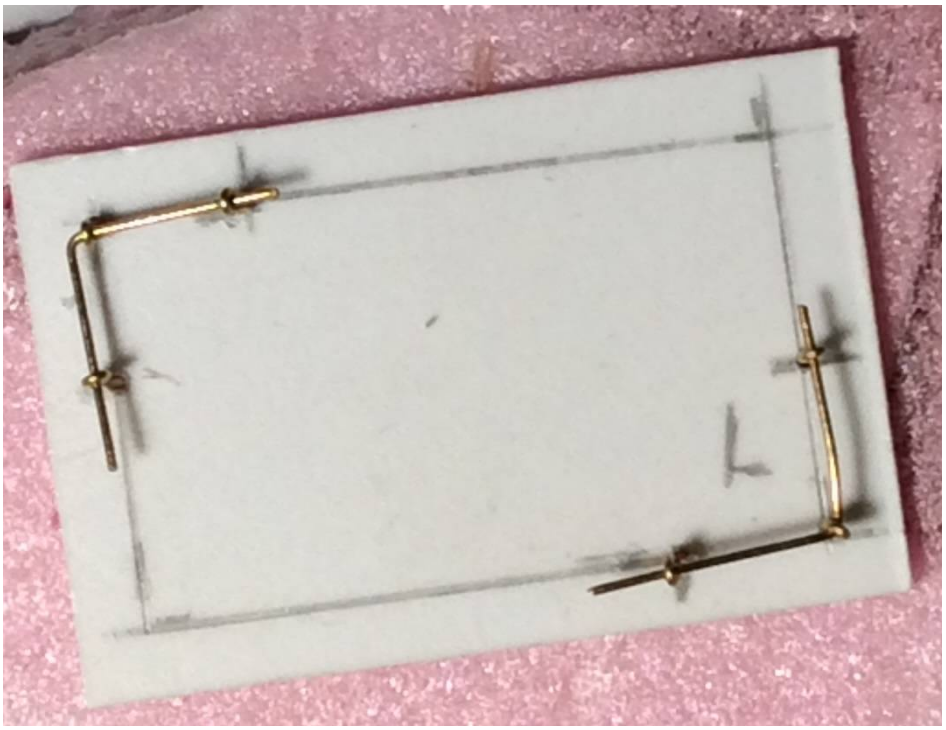


Photo 22 Roof hand grips and support legs / stanchions

The measured length of the two segments of the hand grips, as shown on TS-17 page 160 (Appendix page 1), is 20-inches by 17-inches, which I implemented in HO-scale as 7/32” by 3/16”.

The standoff distance of the hand grips above the roof surface was not specified. I soldered the hand grips to the legs / stanchions and then CA-ed the hand grip legs to the piece of 0.030” sheet styrene under the roof boards. I used scrap pieces of 0.040” strip styrene to implement the standoff distance which equates to about 3.5”. The over-length legs were bent and CA-ed to the underside of the roof 0.030” sheet styrene base.

The two roof panels were then CA-ed in place. Thus, finally closing in all sides of the stock car. Representational bolt heads were placed on the unstained roof boards using a fine tip black pen. See Lesson Learned #3 below. Twenty walkway supports were then made from NSL 2” x 4” lumber each 1/8” long. After staining and installing the roof boards these stained support blocks were sanded flat before the running boards were installed. The running boards on the peak of the roof were made from pieces of NSL 1” x 6” lumber with gaps. The a piece of Evergreen Strip Styrene 2” x 8” was CA-ed on the top of each car side just under the roof edge as the fascia to close off the opening created by the carlines. Finishing touches on the ends of the running boards which extend beyond the car end panels include 1) a crosswise board on the underside of the running boards to stiffen the ends, and 2) diagonal structural pieces to support the overhanging part of the running boards.

Details

This is a short list of the many details incorporated in my PRR 128265 Stock Car, it is not meant to be a scavenger's hunt for the AP judges.

1. Gunk / dirt etc. on both faces of all eight wheels
2. Full AB Brake System installed including the dust collector on the main brake line in front of the AB Valve.
3. Brake system air retaining valve located adjacent to brake platform.
4. Underframe painted with Floquil ATSF Mineral Brown.
5. Underside and body of the stock car weathered with Bragdon Dust Bowl Brown, Dark Rust, Grimmy Black and Soot weathering powders.
6. 45-degree elbow connectors installed on main brake line.
7. Grandt Line nut and bolt castings used to secure the brake levers to the brake lever mounting blocks.
8. COTS stencil located on the brake system air reservoir denoting the date and the railroad name where the last brake system Cleaning, Oiling, Testing and Stenciling (COTS) was performed.
9. Poling pocket on each corner
10. Mounting angle pieces attached to each side of both bolsters and all of the cross members
11. Hand rails on corner of roof
12. Air hose at ends of car painted with Grimmy Black paint and the tip Pewter Gray
13. Grab irons and stirrups made from 0.012" brass wire

Finish and Lettering

The wheels were painted with Model Flex Shipyard Rust twice. While the paint was still wet on the second pass the same paint brush that was used to apply the Shipyard Rust paint was used to dab on Bragdon Soot weathering powder to create the textured appearance of dirt buildup on both sides the wheels.

The trucks were painted with Americana Raw Umber.

The brake system components, brakestaff and brake wheel were painted with Grimmy Black

Bradgon Weathering Powders were used for highlighting and weathering all parts of the PRR 128265 Stock Car. The powders used were Soot, Weathered Brown, Grimmy Black, Dust Bowl Brown and Dark Rust.

Testors Dullcote was used to seal the decals, and after various applications of the paints and/or weathering powders.

I could not find decals which contained the number128079 as shown in Photo 1 above, but I did find a set of Champ Decals for PRR Stock Car 128265. Staying consistent with the Bill Lane photo shown above on page 1 I did not apply any logo on the upper right side of the car. My January 1953 issue of the *Official Railway Equipment Register* page 82, Line Item #22 spans PRR Stock Car numbers 128079 to 129078. Since 128265 is in the midst of this range I felt confident that

what was stenciled on stock car 128079 was similarly stenciled on all the cars in the stated range. Some decals were very slightly off position because of the dimensions of the braces.

Various mixtures of Black and Brown ink mixed with one ounce of alcohol were used as stains on the floor boards and the roof.

Scratch built

A detailed EXCEL spreadsheet, see Appendix pages 17-19, lists all of the 1636 scratch built and 4 non-scratch-built parts used in the construction of my PRR 128265 Stock Car. By broad category the part counts are as follows:

Category		Scratch built part count		Commercial part count
Northeastern Scale Lumber		311		
Evergreen Strip Styrene		250		
Detail Associates Brass Wire		27		
Evergreen Sheet Styrene		5		
Tichy Train Group		936		
Plastruct		103		
Miscellaneous		4		
Non-excluded				4
Totals		1636		4

The end result shows that my PRR 128265 Stock Car contains 99.76% scratch-built parts, which slightly exceeds the minimum acceptable percentage. It is understood that the following commercial pieces / components are exempt from the scratch-built parts count.

1. Trucks and wheels with axels
2. Couplers
3. Screws to attach the above two items
4. AB Brake System
5. Paint
6. Decals

Lessons Learned:

1. Cross members / cross bearers under a stock car are placed differently than under a freight car
2. Do not rely on kit cars as a final authority on stock car details
3. When using a pen tip to create representational dots of a rivet head on a to be stained wooden surface such as a car roof, apply the rivet dots after all staining efforts are completed. Doing it prior to applying the stain tends to cause the dot to bleed and enlarge slightly.
4. Never, never build a stock car again!!

Appendix

Page #	Contents
1,2	Train Shed Cyclopedia Pages 160 and 161
3-7	Excel spreadsheets
8-15	Cadrail drawings • Side, Door, End • Underframe • Cattle Door Stuff • Ladders • Roof Stuff • Upper Deck Supports
16	PRR Class K8 stock car trucks
17-19	Part count Excel spreadsheet

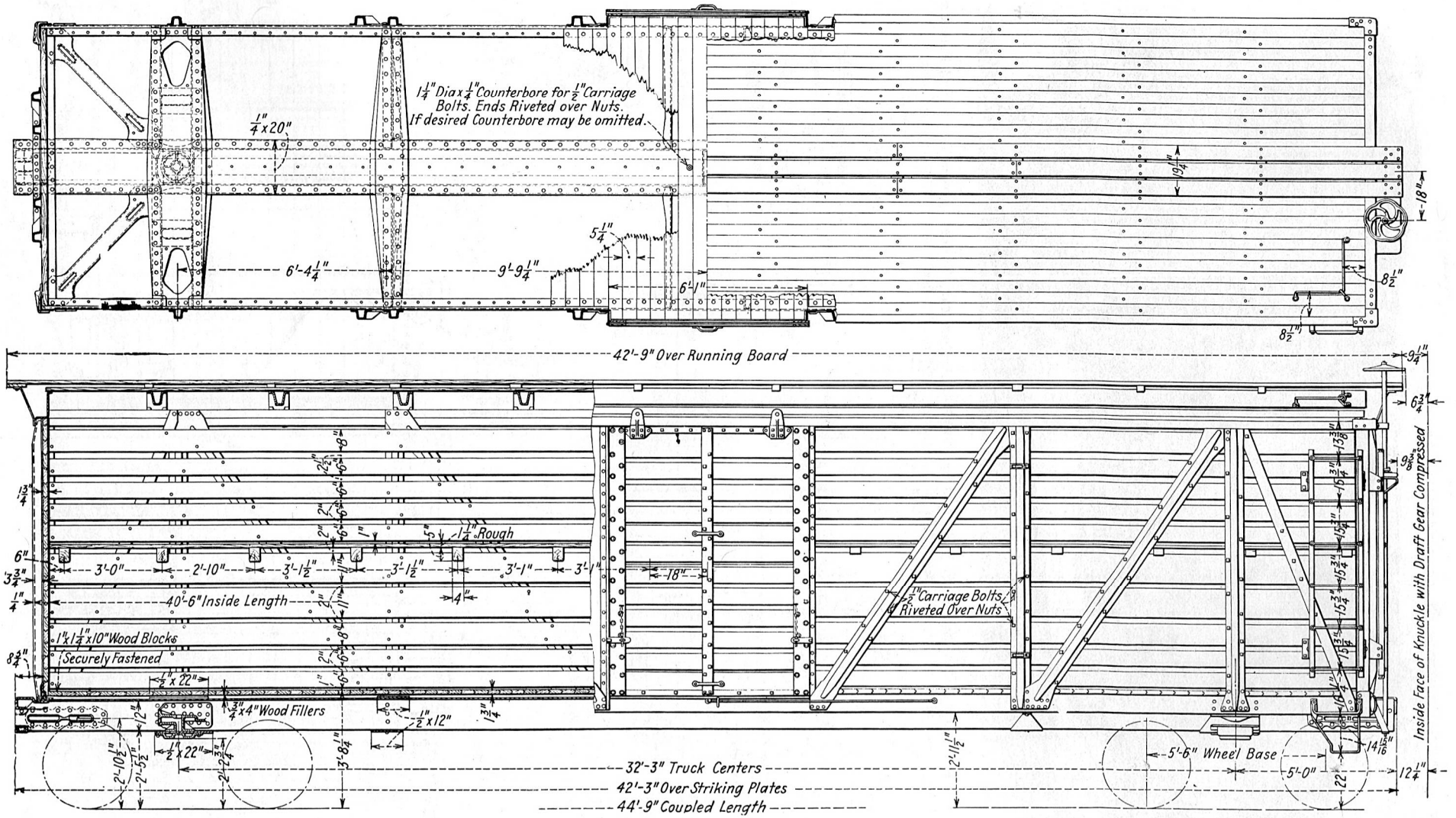


Fig. 2.211—Plan and elevation of The Pennsylvania Railroad convertible single or double-deck stock car, Road Class K8, 50-ton capacity.

(*See also page* 161)

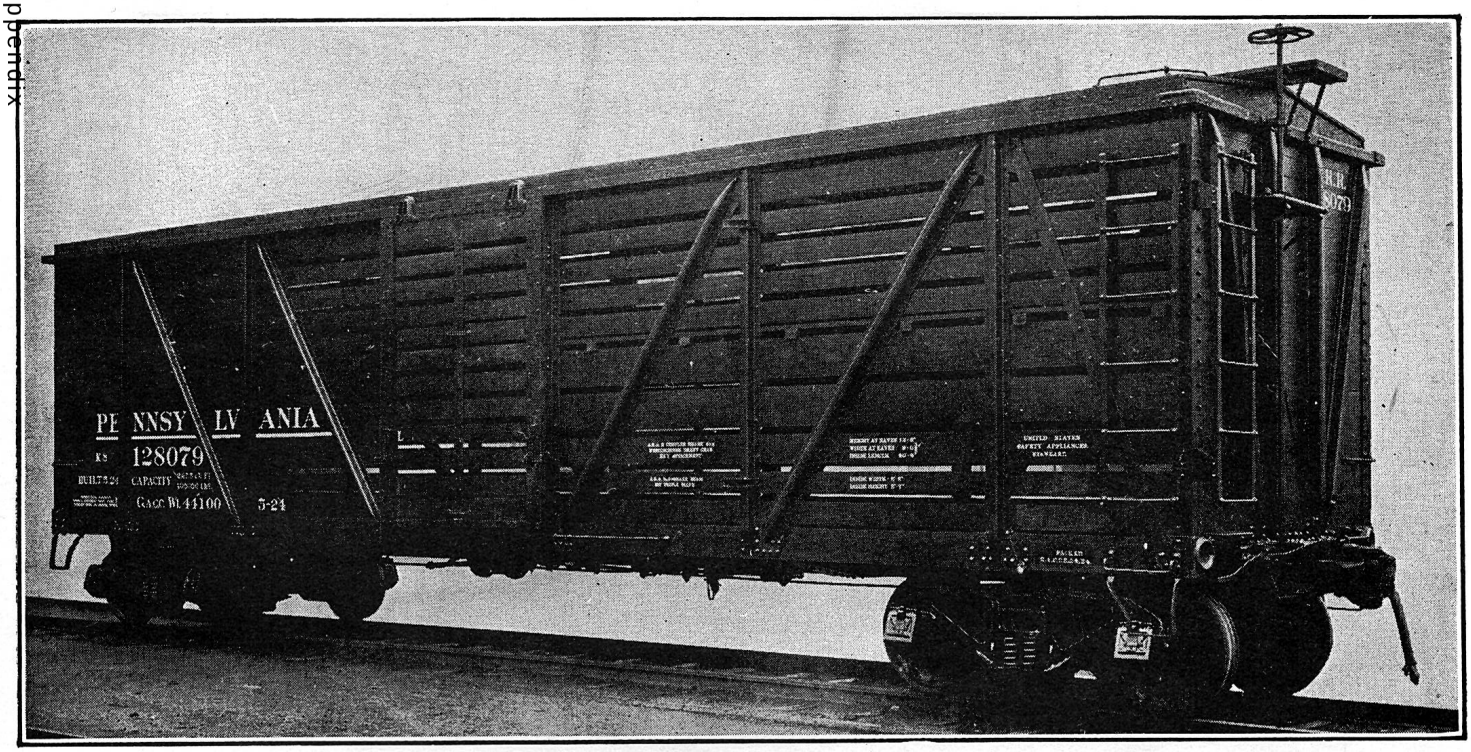


Fig. 2.212—The Pennsylvania Railroad convertible single or double-deck 50-ton stock car, Road Class K8. Single board roof.

Capacity	100,000 lb.—2,955 cu. ft.	Axle journals	5½ in. x 10 in.
Load limit	124,900 lb.	Truck centers	32 ft. 3 in.
Light weight	44,100 lb.	Length over striking faces	42 ft. 3 in.
Length inside	40 ft. 6 in.	Width at eaves	9 ft. 5⅝ in.
Width inside	8 ft. 6½ in.	Height at eaves	12 ft. 6 in.
Height inside	8 ft. 7 in.	Height to top of floor	3 ft. 8¼ in.

(*See also Figs.* 2.211 *and* 2.213)

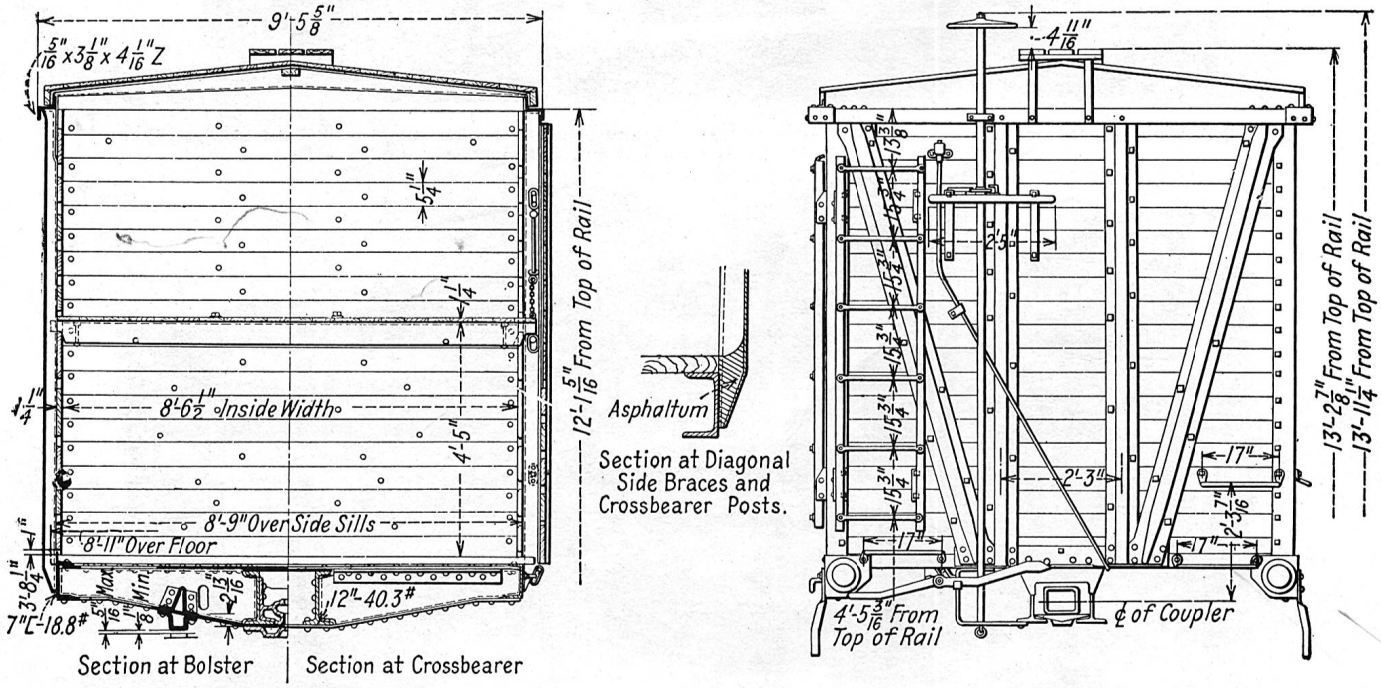


Fig. 2.213—Cross sections and end elevation of The Pennsylvania Railroad convertible single- or double-deck stock car shown in **Figs.** 2.211 and 2.212.

PRR 128079 Measurements

HO-scale factor	87	11/05/21
Page 160 scale factor (sf)	0.0172	
Page 161 scale factor (sf)	0.021	

Data from drawing in TrainShed Cyclopedia #17 page 160 and 161

Top of rail to bottom of side sill		35.5	inches			
Use measurements to the right of the cattle door (2' 11.5")						
Width of door	6'	1"	73	inches	0.839	**Approx 27/32=.843, use this as width**
Height of door	8'	4"	100	inches	1.149	Measured

PRR 128079 Side

	Width (in)	HO size (in)	Width of Materials used (in)	Materials	Delta (in)
Sill	7	0.080	0.080	Ever. .08 channel	0.000
Floor	1.75	0.020	0.026	NSL 2x8	0.006
Gap 1	1	0.011	0.010	Ever. 0.010x0.080 Strip styrene	-0.001
Board 1	6	0.069	0.072	NSL 1x6	0.003
Gap 2	2	0.023	0.020	Ever. 0.020x0.040 Strip styrene	-0.003
Board 2	6	0.069	0.072	NSL 1x6	0.003
Gap 3	2	0.023	0.020	Ever. 0.020x0.040 Strip styrene	-0.003
Board 3	8	0.092	0.096	NSL 1x8	0.004
Gap 4	2	0.023	0.020	Ever. 0.020x0.040 Strip styrene	-0.003
Board 4	11	0.126	0.120	NSL 1x10	-0.006
Gap 5	2	0.023	0.020	Ever. 0.020x0.040 Strip styrene	-0.003
Board 5	11	0.126	0.120	NSL 1x10	-0.006
Gap 6	2	0.023	0.020	Ever. 0.020x0.040 Strip styrene	-0.003
Floor	1.25	0.014	0.012	NSL 1x8	-0.002
Board 6	6	0.069	0.072	NSL 1x6	0.003
Gap 7	2	0.023	0.020	Ever. 0.020x0.040 Strip styrene	-0.003
Board 7	6	0.069	0.072	NSL 1x6	0.003
Gap 8	2	0.023	0.020	Ever. 0.020x0.040 Strip styrene	-0.003

PRR 128079 Side (cont.)

	Width (in)	HO size (in)	Width of Materials used (in)	Materials	Delta (in)
Board 8	6	0.069	0.072	NSL 1x6	0.003
Gap 9	2.5	0.029	0.030	Ever. 0.030x0.040 Strip styrene	0.001
Board 9	6	0.069	0.072	NSL 1x6	0.003
Gap 10	2.5	0.029	0.030	Ever. 0.030x0.040 Strip styrene	0.001
Board 10	8	0.092	0.096	NSL 1x8	0.004
Gap 11	1	0.011	0.010	Ever. 0.010x0.080 Strip styrene	-0.001
Support piece for metal braces	6	0.069	0.066	Ever 2x6 strip styrene	-0.003
	---	---	---		---
	111	1.276	1.268		-0.008
Top of rail to bottom of side sill	35.5	0.408	0.408		
	---	---	---		
	146.5	1.684	1.676		

Other good data points from diagram on page 161

Side wall thickness	1.25	inches	
Side sill	7	inches	C-channel
Center sills	12	inches	

NSL 1x6 measures 0.013 x 0.072 inches
NSL 1x8 measures 0.012 x 0.096 inches
NSL 2x12 measures 0.026 x 0.145 inches
NSL 4x6 measures 0.050 x 0.072 inches
NSL 2x10 measures 0.026 x .119 inches
Evergreen strip styrene .030 -x is exactly 0.030” thick
Evergreen strip styrene .040 -x is exactly 0.040” thick

PRR 128079 Door	Width (in)	HO size (in)	Width of Materials used (in)	Materials	Delta (in)
Board 1	8	0.092	0.096	NSL 1x8	0.004
Gap 1	1	0.011	0.010	Ever. 0.010x0.080 Strip styrene	-0.001
Board 2	6	0.069	0.072	NSL 1x6	0.003
Gap 2	2	0.023	0.020	Ever. 0.020x0.040 Strip styrene	-0.003
Board 3	6	0.069	0.072	NSL 1x6	0.003
Gap 3	2	0.023	0.020	Ever. 0.020x0.040 Strip styrene	-0.003
Board 4	6	0.069	0.072	NSL 1x6	0.003
Gap 4	2	0.023	0.020	Ever. 0.020x0.040 Strip styrene	-0.003
Board 5	6	0.069	0.072	NSL 1x6	0.003
Gap 5	2	0.023	0.020	Ever. 0.020x0.040 Strip styrene	-0.003
Board 6	6	0.069	0.072	NSL 1x6	0.003
Gap 6	2	0.023	0.020	Ever. 0.020x0.040 Strip styrene	-0.003
Board 7	6	0.069	0.072	NSL 1x6	0.003
Gap 7	1	0.011	0.010	Ever. 0.010x0.080 Strip styrene	-0.001
Board 8	6	0.069	0.072	NSL 1x6	0.003
Gap 8	1	0.011	0.010	Ever. 0.020x0.040 Strip styrene	-0.001
Board 9	6	0.069	0.072	NSL 1x6	0.003
Gap 9	2	0.023	0.020	Ever. 0.020x0.040 Strip styrene	-0.003
Board 10	6	0.069	0.072	NSL 1x6	0.003
Gap 10	2	0.023	0.020	Ever. 0.020x0.040 Strip styrene	-0.003
Board 11	6	0.069	0.072	NSL 1x6	0.003
Gap 11	2	0.023	0.020	Ever. 0.020x0.040 Strip styrene	-0.003
Board 12	11	0.126	0.119	NSL 1x10	-0.007
	---	---	---		---
	98	1.126	1.125		-0.001

PRR 128079 End (Use diagram on the right bottom of page 161)

	Width (in)	HO size (in)	Width of Materials used (in)	Materials	Delta (in)
Sill	7.00	0.080	0.080	Ever. .08 channel	0.000
Board 19	5.25	0.060	0.060	NSL 1x6 cut to 5.25”	0.000
Board 18	5.25	0.060	0.060	NSL 1x6 cut to 5.25”	0.000
Board 17	5.25	0.060	0.060	NSL 1x6 cut to 5.25”	0.000
Board 16	5.25	0.060	0.060	NSL 1x6 cut to 5.25”	0.000
Board 15	5.25	0.060	0.060	NSL 1x6 cut to 5.25”	0.000
Board 14	5.25	0.060	0.060	NSL 1x6 cut to 5.25”	0.000
Board 13	5.25	0.060	0.060	NSL 1x6 cut to 5.25”	0.000
Board 12	5.25	0.060	0.060	NSL 1x6 cut to 5.25”	0.000
Board 11	5.25	0.060	0.060	NSL 1x6 cut to 5.25”	0.000
Board 10	5.25	0.060	0.060	NSL 1x6 cut to 5.25”	0.000
Board 9	5.25	0.060	0.060	NSL 1x6 cut to 5.25”	0.000
Board 8	5.25	0.060	0.060	NSL 1x6 cut to 5.25”	0.000
Board 7	5.25	0.060	0.060	NSL 1x6 cut to 5.25”	0.000
Board 6	5.25	0.060	0.060	NSL 1x6 cut to 5.25”	0.000
Board 5	5.25	0.060	0.060	NSL 1x6 cut to 5.25”	0.000
Board 4	5.25	0.060	0.060	NSL 1x6 cut to 5.25”	0.000
Board 3	5.25	0.060	0.060	NSL 1x6 cut to 5.25”	0.000
Board 2	5.25	0.060	0.060	NSL 1x6 cut to 5.25”	0.000
Board 1	5.25	0.060	0.060	NSL 1x6 cut to 5.25”	0.000
	106.75	1.227	1.220		-0.007
Top of rail to bottom of side sill	35.5	0.408	0.408		
	142.25	1.635	1.628		

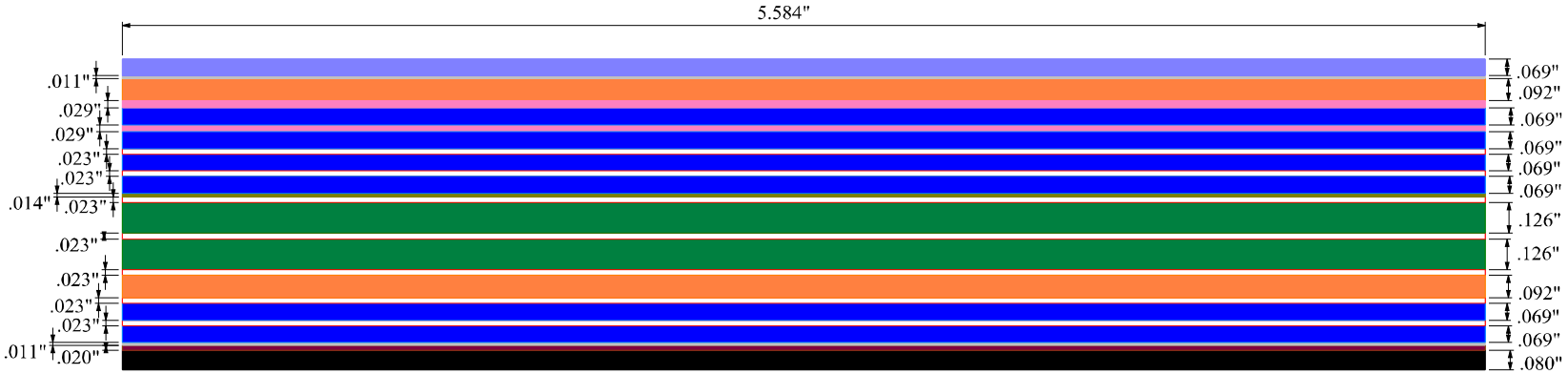
Side vertical and diagonal ribs	Measur. from Pg.160	x Pg.160 sf	HO Scale	More reasonable build to Measurements – inches	HO scale
Width of rib	0.120	6.977	0.080	7.00	0.080
Side to first vertical rib	0.823	47.849	0.550	48.00	0.552
First vert. rib to second vert. rib	1.367	79.477	0.914	79.50	0.914
Second vert. Rib to far edge of angle on door opening	1.347	78.314	0.900	78.50	0.902
Door width		73.000	0.839	73.00	0.839

				485.00	
				40.42	SB 40.5 feet
Taper on end of vertical rib	0.168	9.767	0.112	9.75	0.112

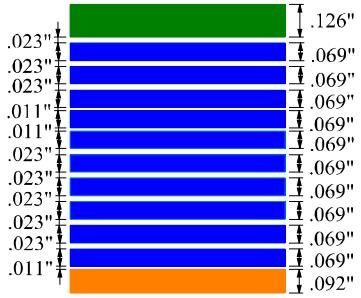
Ladder Width measurements taken from multiple exploded views on page 161

	Rung	Stile Front	Stile Side
Source 1	0.732	1.49	1.49
Source 2	0.873	1.63	1.63
Source 3	0.909	1.75	1.75
Source 5	0.736	1.44	1.72
Source 5	0.81	1.97	1.62
average	0.812	1.656	1.642
HO scale	0.009	0.019	0.019

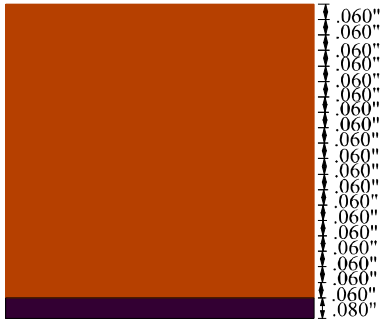
HO-scale drawings as scaled by a factor of 1/87 from full size drawing of PRR Stock Car 128265



Cattle Door



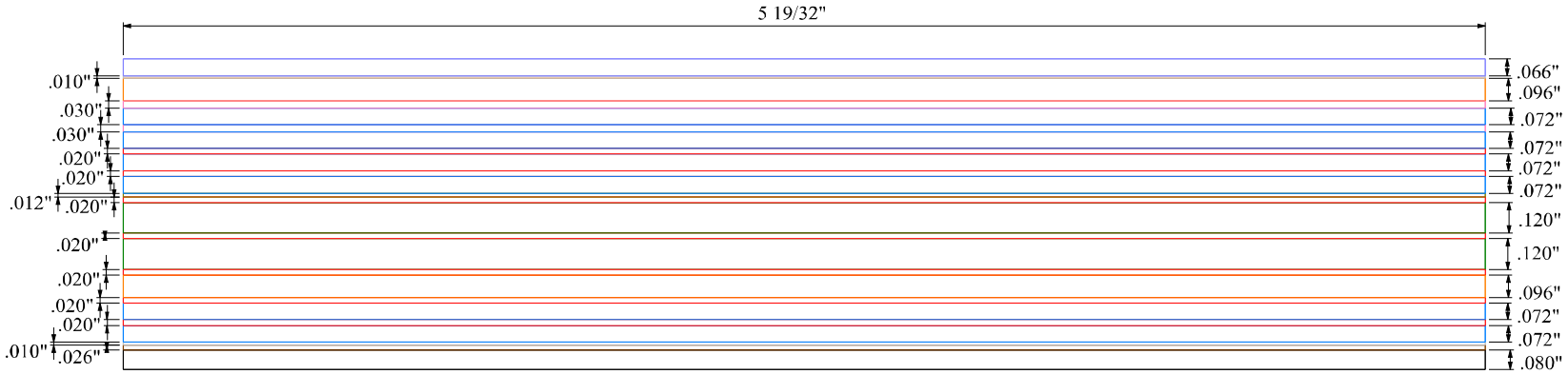
End



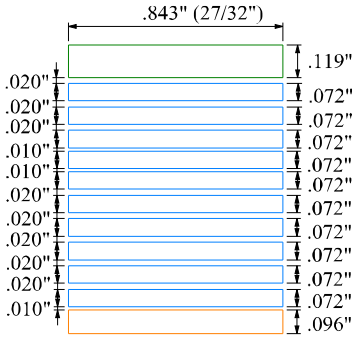
PRR 128265 Stock Car build to dimensions. All dimensions expressed in inches.

Width selection based on measurements made of Northeastern Scale Lumber pieces and stated size of Evergreen Strip Styrene pieces which are used as spacers during construction.

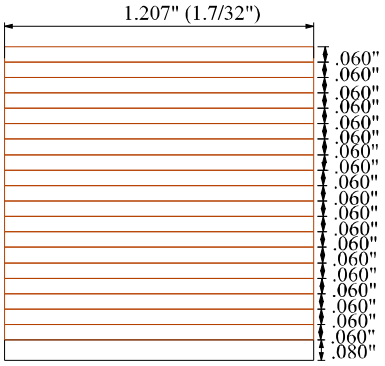
Side - w/o Door Opening



Cattle Door



End



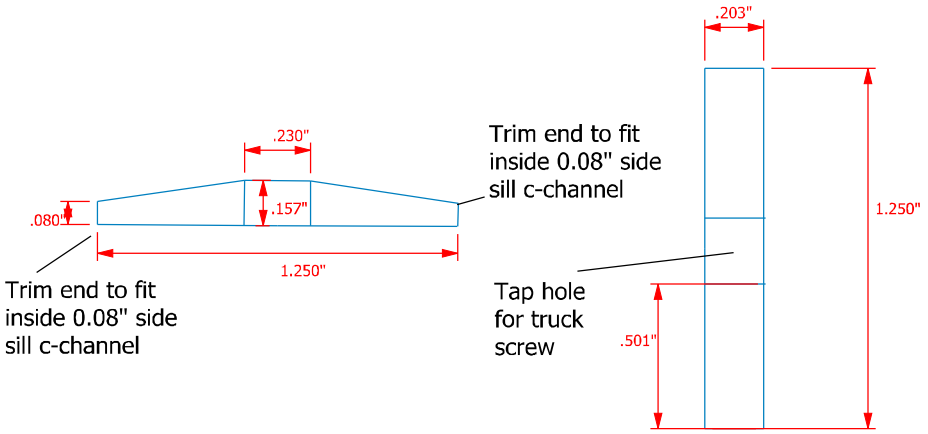
Make .060" wide boards by cutting Northwestern Scale Lumber 1" x 6" (.012" x .072") down to .060" in width

Underframe for PRR 128265 Stock Car.

Dimensions are from annotated Trainshed Cyclopedia #17 drawings on pages 160 and 161, or from measurements made with dial caliper and scaled from page specific scale factors.

Bolster (Image 1.5 X)

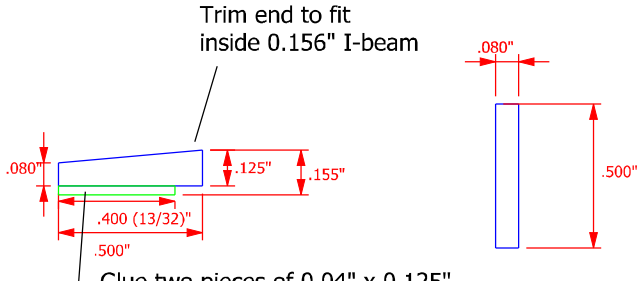
(Make 2)



Glue two pieces of 0.100" x 0.156" Evergreen Styrene to make each Bolster and shape to diagram above.

Cross Bearer (Image 1.5 x)

(Make 8)



Glue two pieces of 0.04" x 0.125" Evergreen Styrene to make each Cross Bearer and shape to diagram above.

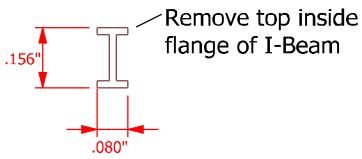
Attach 0.03" x 0.08" x 13/32" shoe under Cross Bearer to create notch so that the bottom edge of the Cross bearer fits perfectly over the metal plate and the bottom flange of the Center Sill I-Beam

Underframe for PRR 128265 Stock Car. (Cont.)

Center Sill (Image 2 x)

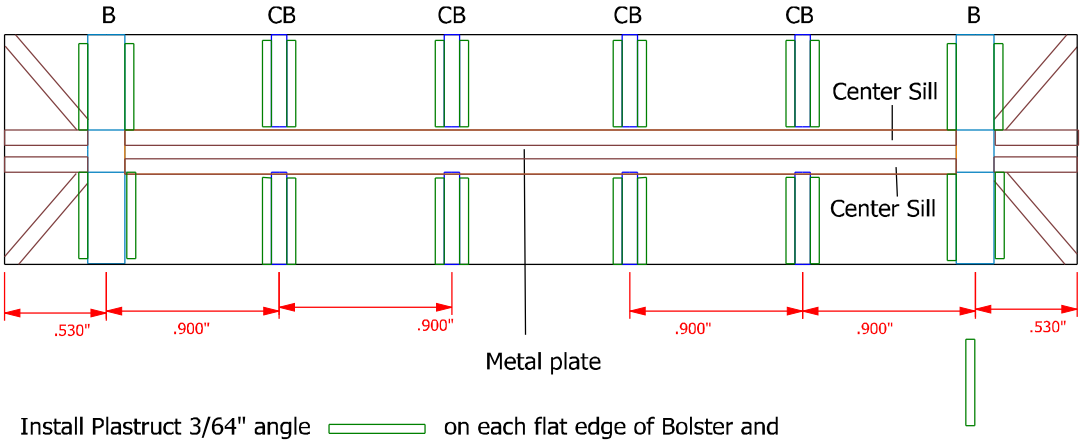
(Make 2)

Evergreen Styrene 262 5/16" I-Beam



Underframe Structural Assembly Drawing and Instructions

B - Bolster
CB - Cross bearer

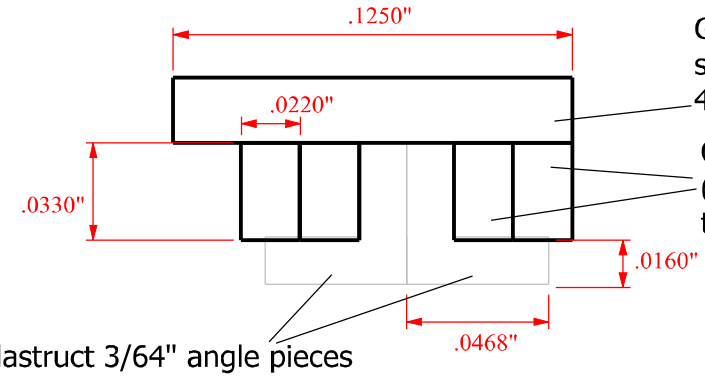


Install Plastruct 3/64" angle ▭ on each flat edge of Bolster and Cross bearer as the means to attach Bolster and Cross bearer to stock car floor
Mount Bolster directly under the first vertical brace in from each end
Mount the two Center Sill pieces on the 1/4" thick by 20" wide Metal plate that goes between Bolsters
Mount Cross bearer under 2-nd vertical brace in from each end
Mount Cross bearer under vertical brace on either side of cattle door opening.
Install diagonal pieces of Center Sill I-Beam material in the 4 corners of the underframe

Cattle Door Stuff

Cattle-Door Door Stop

Image 100x, dimensions HO-scale, Make 4



Glue one piece of Evergreen 2x4 strip styrene to top of 2x3 blocks, 4" side faces up

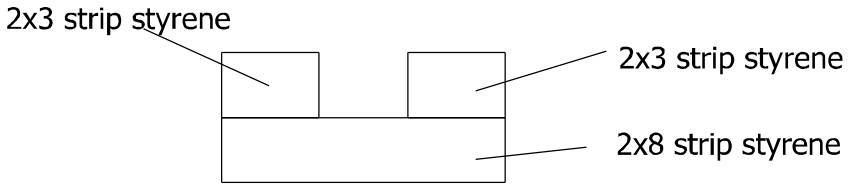
Glue 2 pieces of Evergreen 2x3 (0.022" x 0.033") strip styrene back to back, each piece 0.043" long

Plastruct 3/64" angle pieces glued back to back to create vertical brace

Attach to the first vertical brace to the right of the cattle-door and above side boards #2 and # 11

Cattle-Door Support Rail

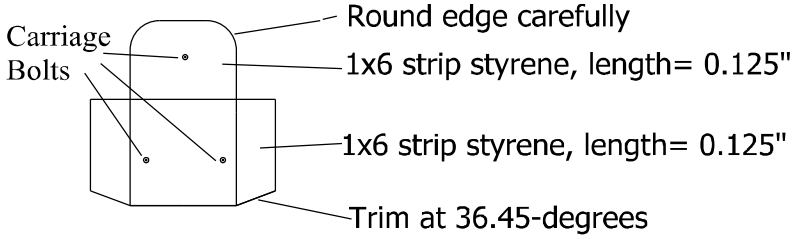
Image 100x, dimensions HO-scale, Make 2



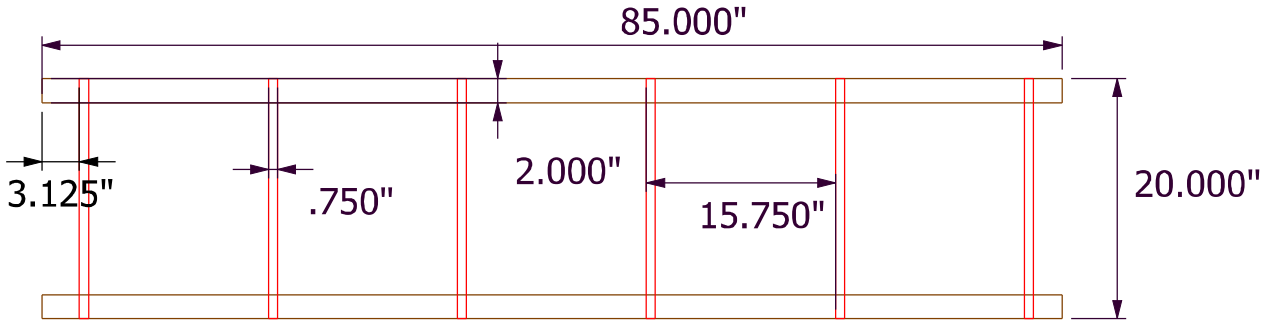
Rail goes the full length of each side

Cattle-Door Hanger

Image 50x, dimensions HO-scale, Make 4



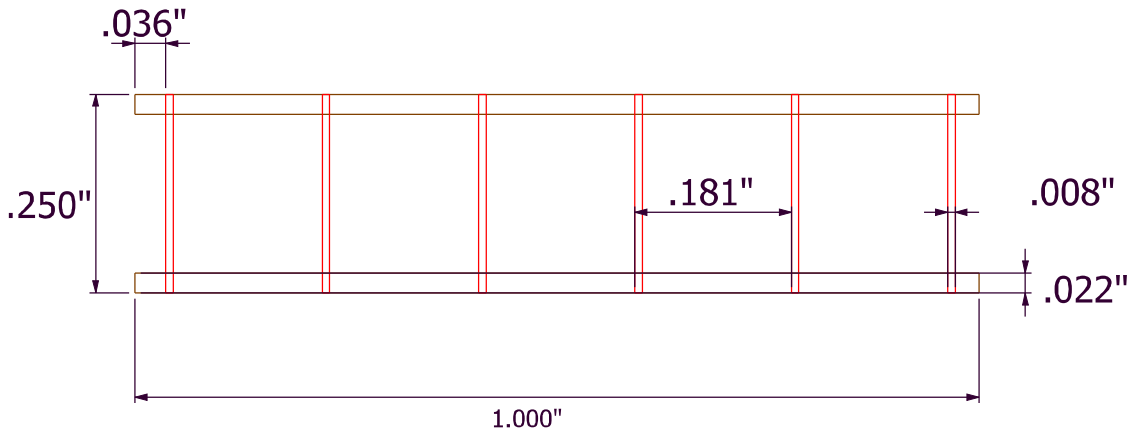
Ladder - sides and ends 4 total



Prototype Dimensions

Note: Stiles are 2.0" square

HO-scale, and build to dimensions (not to scale)



Stiles - Use Evergreen Styrene strips 2" x 2" #8202 (.022" x .022")

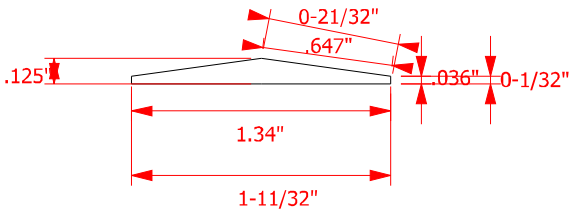
Rung - Use Tichy Train Group 0.008" phorporus bronze wire

Use small dad of Gorilla Super Glue (CA) to secure rung to stile

Roof Stuff

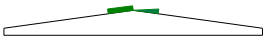
Roof End

Make 2



Roof Walkway Support

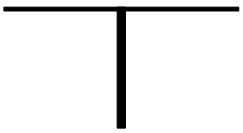
Make 10



Support is a 0.125" piece of NSL 2x4
Secure roof walkway support to roof
File/sand support so that it has a flat top as shown on the right above

Carlines (i.e. Trusses)

Image 10x, Make 20

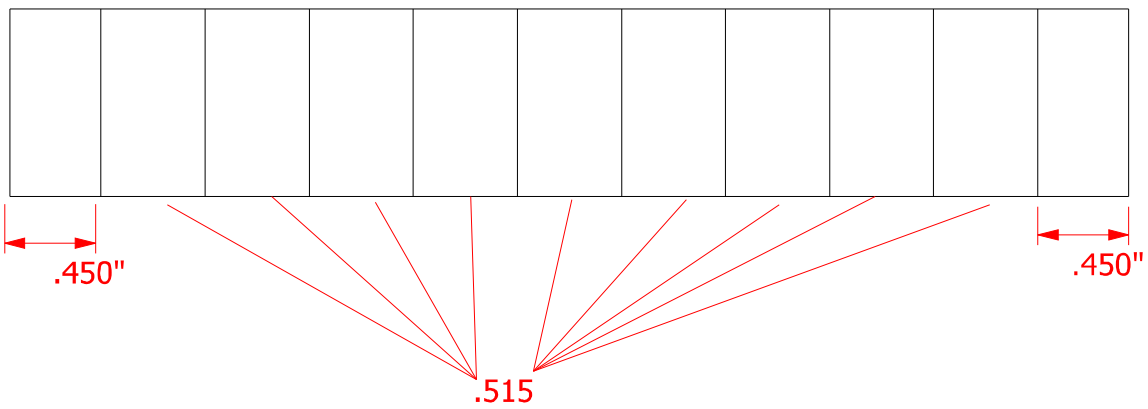


Glue two pieces of Evergreen 0.060" Angle back to back

Length 0.625"

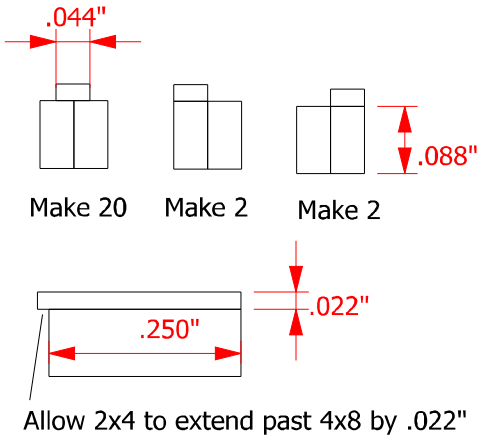
Carline Spacing Across Roof

Image 1x, Make 2



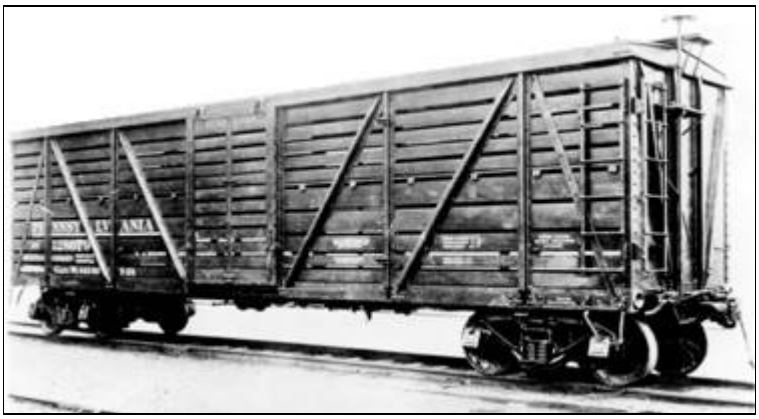
Upper Deck Supports

Images 6X



Glue 2 0.25" long pieces of HO-scale 4x8 lumber together
Glue piece of HO-scale 2x4 lumber to top of the double 4x8 pieces with an overhang the width of the side boards so that the end of the 2x4 extends slightly beyond outside face of the car side boards

PRR Class K8 stock cars



PRR 128079 K8 PRR Photo

No description for this class is available yet. Sorry. Would you like to write one?

Types of trucks used

Class	Car	Numbers	Truck Class	Truck Name	Qty cars:
K8			2D-F8	P.R.R.	
Truck data is from PRR documents circa 1940's. Other truck classes may also have been used.					

Cars on the PRR roster (as listed in the Official Railway Equipment Register (ORER)):

Class	Car	Number	AAR Class	PRR Oct 44	PRR Oct 48	PRR Apr 52	PRR Oct 53	PRR Oct 58	PRR Oct 63	PRR Apr 68
K8	128079	129078	SC	992	989	925	515	497	2	-
Roster data compiled by Rich Orr										

Modeling Information:

Funaro & Camerlengo					
K8	HO	8300	PRR K8 ONE PIECE BODY Stock Car Single Deck AB Brake Circle Keystone Decals	resin kit w/ decals	-
K8	HO	8301	PRR K8 ONE PIECE BODY Stock Car Single Deck K Brake Circle Keystone Decals	resin kit w/ decals	-
K8	HO	8302	PRR K8 ONE PIECE BODY Stock Car Double Deck AB Brake Circle Keystone Decals	resin kit w/ decals	-
K8	HO	8303	PRR K8 ONE PIECE BODY Stock Car Double Deck K Brake Circle Keystone Decals	resin kit w/ decals	-
Precision Scale					

PRR 128265

Manufacturer	Part #	Part Name	Scratch built Part Count	Commercial Non-exempt Part Count	Purpose / use
Northeastern Scale Lumber	3012	2 x 4	22		Roof Boards
			24		Top Deck Support Pieces
			20		Roof walkway supports
			4		Roof walkway end support
	3005	1 x 8	6		Sides and Doors
			4		Hay Bales
	3051	8 x 10	8		Hay Bales
	3004	1 x 6	32		Sides and doors
			38		Car ends - cut down to 1 x 5.25
			12		Roof walkway
	3006	1 x 10	6		Sides and Doors
	3013	2 x 6	81		Floor boards - cut down to 2 x 5.25
			2		Roof edges
	3041	6 x 8	4		Hay Bales
	3032	4 x 8	48		Top Deck Support Pieces
Evergreen Strip Styrene	8106	1 x 6	14		Door Sides, Top of Ends, Door Hangers
	8208	2 x 8	4		Rail Header at Top of Sides, Ends, and Door Hangers
			1		B-end Platform Support
			2		Roof Fascia
			4		Support Under Poling Pocket Base
	8203	2 x 3	12		Rail Header at Top of Sides, Ends, and Door Hangers and Door Stop
			1		Sub-roof Extender
			2		Roof Width Extension
			2		Cross Piece at Top of Car End
	8206	2 x 6	2		???
			2		Underside End Reinforcement
	291	.060 Angle	4		Ends of Car
			40		Roof Car-lines
	8104	1 x 4	4		Diagonal on End of Side
	8404	4 x 4	4		Additional Glue Surface on Edge of Door Frame
			2		Diagonal Support Under Air Reservoir
	8206	2 x 6	2		Top of Ends

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Manufacturer	Part #	Part Name	Scratch built Part Count	Commercial Non-exempt Part Count	Purpose / use
	8204	2 x 4	4		Door Stops
	104	.010 x .080	8		Caps on Cross Bearers
			2		Brake Lever Mounting Pad
	177	.100 x .156	4		Bolster Pieces
	132	.03 x .04	4		Blocks Behind Car Hanger
			8		Pads Under End Ladder Bracket
	8108	1 x 8	2		Bottom Edge of Ends
	8212	2 x 12	2		Inside Top of Ends
	283	.100 H-column	6		Center Sill Cross Members
	8202	2 x 2	8		Ladder Styles
	106	.01 x .125	4		Poling Pocket Mounting Pads
	122	.02 x .04	4		B-end Platform Support
	146	.04 x .125	16		Cross Bearer Pieces
			4		Remade Roof Ends
	142	.04x.04	2		Additional standoff for brake platform
	134	.03 x .08	16		Shoe Under Cross Bearers
	154	.06 x .08	22		Fascia Glue Blocks
	211	.040 rod	2		Rail Under Door
			4		Main Brake Line Couplings
	281	0.06 H-column	4		Brake Cylinder and AB Valve Supports
			4		Diagonals in corner of underframe
	126	.02 x ,125	2		Air Reservoir Support
	223	3/32" tube	4		Poling Pockets
	275	.156 I-Beam	2		Center Sills
	8104	1x4	10		Door Center, Top and Bottom
Evergreen Styrene	262	.08" C-Channel	2		Side Sills
	9020	.02" thick sheet	1		Metal Plate Under Center Sills
			2		Flat Piece on Top of Bolsters
Detail Associates	2506	0.019" brass wire	1		Main air line
	2504	0.012" brass wire	4		Side 1 and 2 Door Handles
			2		Brake wheel shaft
			8		Roof Hand Grips and Standoffs
			10		Grab irons and stirrups

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Manufacturer	Part #	Part Name	Scratch built Part Count	Commercial Non-exempt Part Count	Purpose / Use
Detail Associates (Cont.)			2		Coupler lift pins
Tichy Tain Group					
	1100	.008 Phosphor Bronze	24		Ladder Rungs
	3037	Eyebolt	4		Door Rail Support
			2		Anchor for air line up to air retainer valve
			4		Coupler lift pin support
	8018	.025 Rivet	900		Working End of carriage Bolts
	8142	Nut, Bolt, Washer	2		Brake Lever
Plastruct	90501	3/64 Angle	36		Vertical and Diagonal Braces - car sides
			16		Vertical and Diagonal Braces - car ends
			16		Flange for Cross Bearer
			8		Flange for Bolster
			2		Cross Piece at Top of Car End
			8		Corner Pieces
	9054	7/64 Angle	17		Ladder Brackets
A-Line Chain	29219	40-link per inch		2	Brakeshaft
Kadee	276	Air hose		2	
			---	---	
			1632	4	
		Percentage	99.76%	0.24%	

Northeastern Scale Lumber pieces	311
Evergreen Strip Styrene pieces	250
Evergreen Styrene	5
Detail Associates Brass Wire pieces	27
Tichy Train Group pieces	936
Plastruct	103
Miscellaneous	4

	1636