

CENTERBEAM FLATCAR

60' OPERA WINDOW BULKHEAD FLAT CAR

The Prototype

In the 1960's some British Columbia lumber producers were looking for a way to increase sales in the eastern US. Working with Canadian National this car was designed to significantly reduce shipping costs. Most lumber was being carried in boxcars and on bulkhead flat cars. The centerbeam replaces heavy center and side sills and allows for lighter weight bulkheads. This means the cars can carry heavier loads, upwards of 199,000 lbs. There are also savings in labor costs of loading and securing loads. And the built-in cable tie-downs eliminates the problem of chains and straps disappearing when cars are unloaded.

Thrall acquired the design patents in 1966 and made 8 test cars leased to NP in 1968. The test cars were a success, in 1977 BN bought 190, Milwaukee bought 100 and UP bought 75. BN later bought 300 more. Other roads acquired some of these cars later.

The cars are 60'8" between bulkheads and 64'2" overall less couplers. British Columbia RR has some almost identical cars except they are 72' with one additional opera window.

These are distinctive looking cars and many are still in service. They can be seen in mixed freight trains coast to coast.

The Model

The model was drawn for 3D printing by Scott MacKenzie three years ago. I had a prototype printed commercially and pondered how to mold and cast it so as to hide the parting lines. I finally realized I needed a 3-piece mold for the beam. Then I had a long wait for some of the detail parts.

Parts List

- 1- floor casting
- 1- beam casting
- 2- bulkhead castings
- 1- lead weight
- 1- AB Brake sprue
- 1- brake wheel
- 1- piece chain
- 1- piece flat styrene, bent

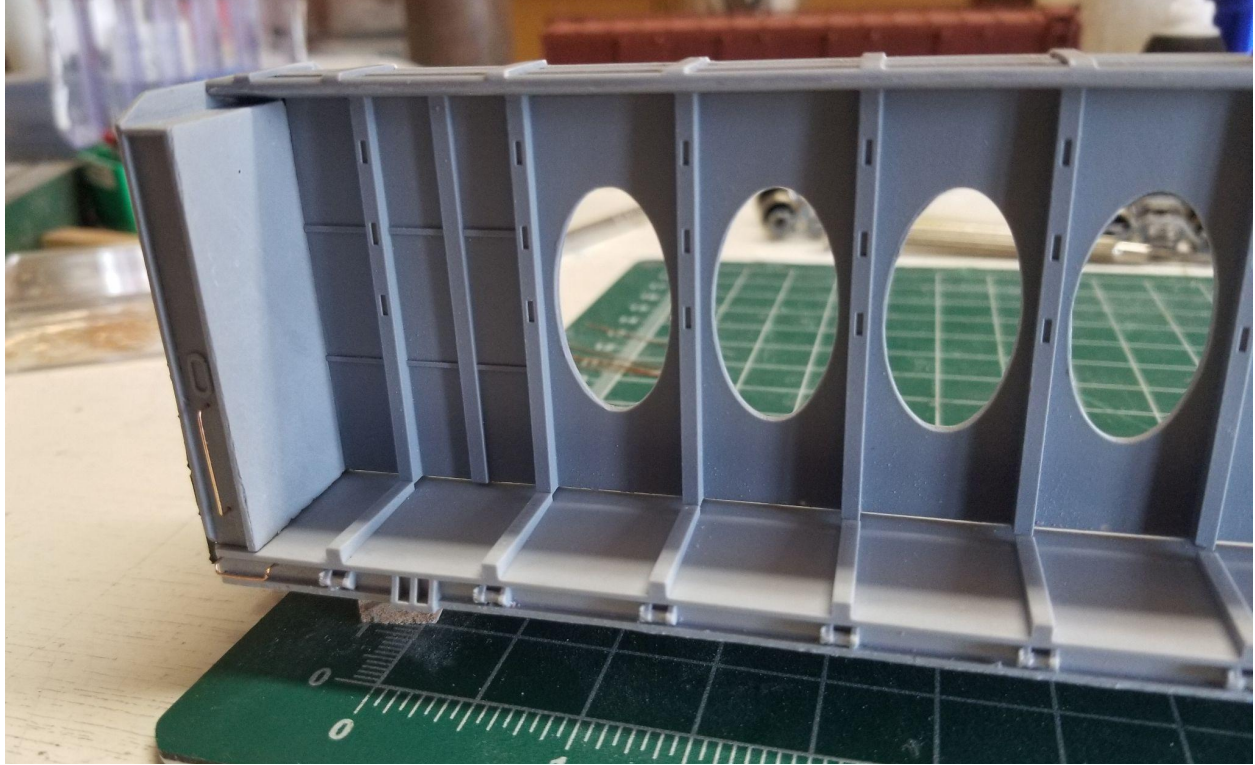
4- straight grabs
4- drop grabs
4- long grabs
4- stirrups
1- set brake platforms
2- .015 phosphor bronze wire
1- piece 28 gauge wire
Decals

Instructions

I suggest you read through the instructions before you start. These are suggestions from one modeler to another. This is how I did it. It worked for me. You may be more comfortable doing some things your own way. There are links to photos at the end of these instructions.

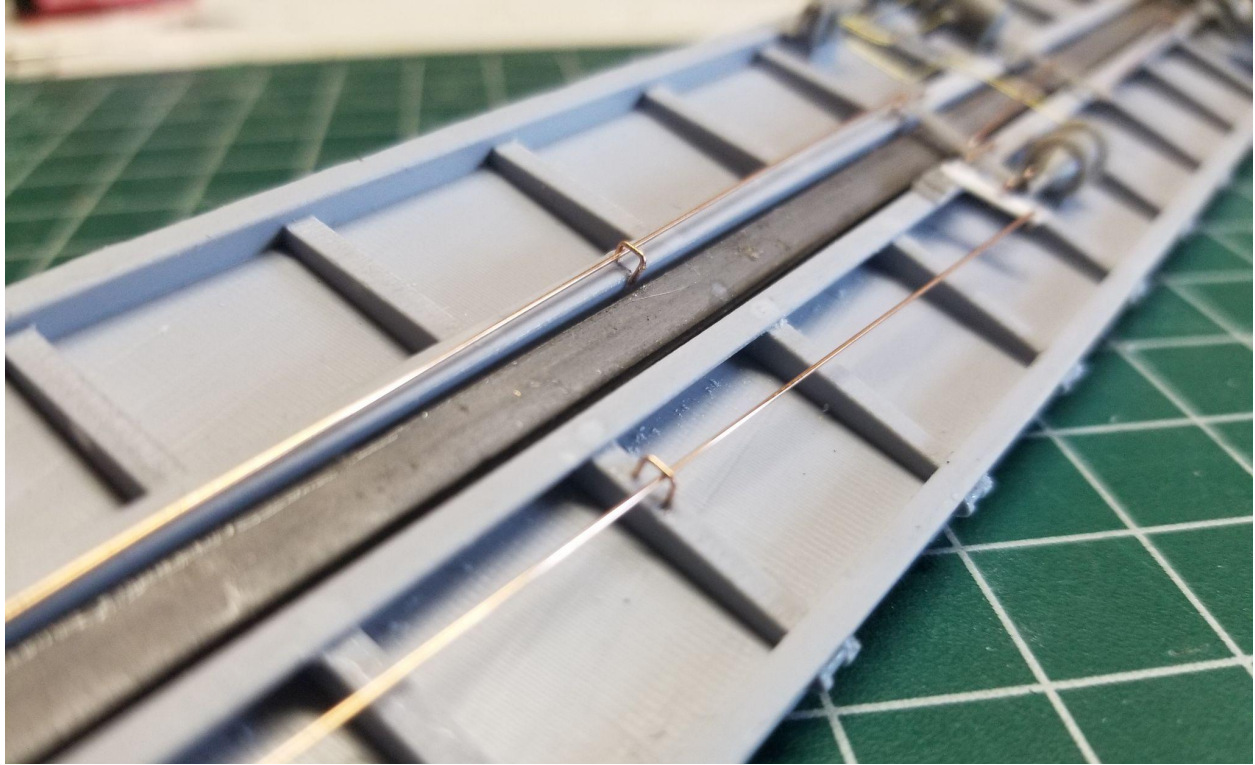
Make sure all parts are present.

Clean the flash off the cast parts. Make sure the bottom and ends of the center beam are straight and flat. I finished the opera windows with a sanding stick going round and round. Note there are tabs and notches to locate the 4 body parts. Test fit them to make sure the flash where they mate is trimmed and there is a flush fit. Do not glue them together yet. It is easier to apply the details before assembly.

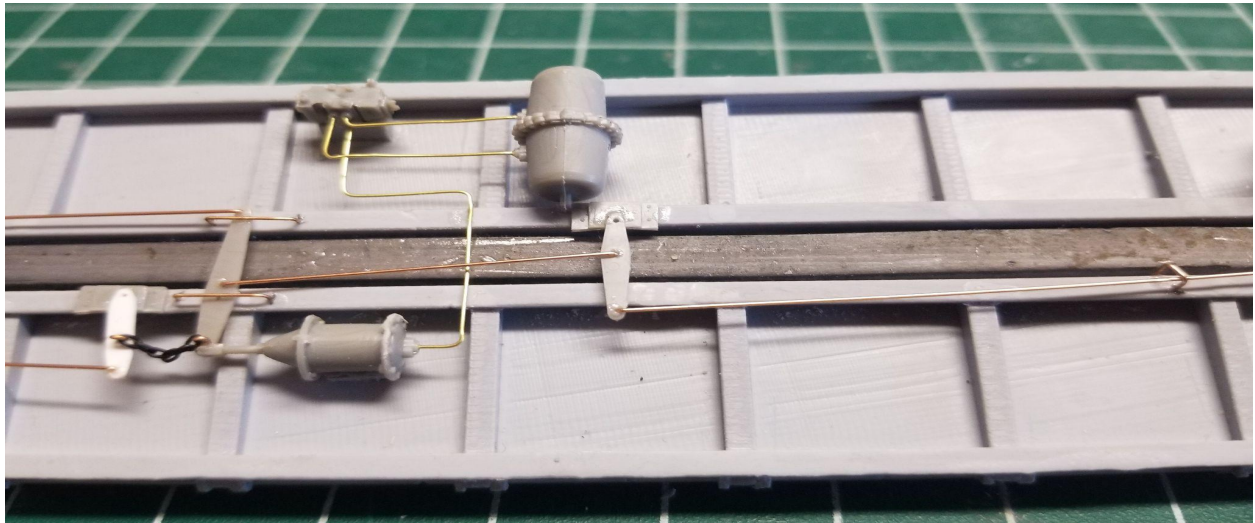
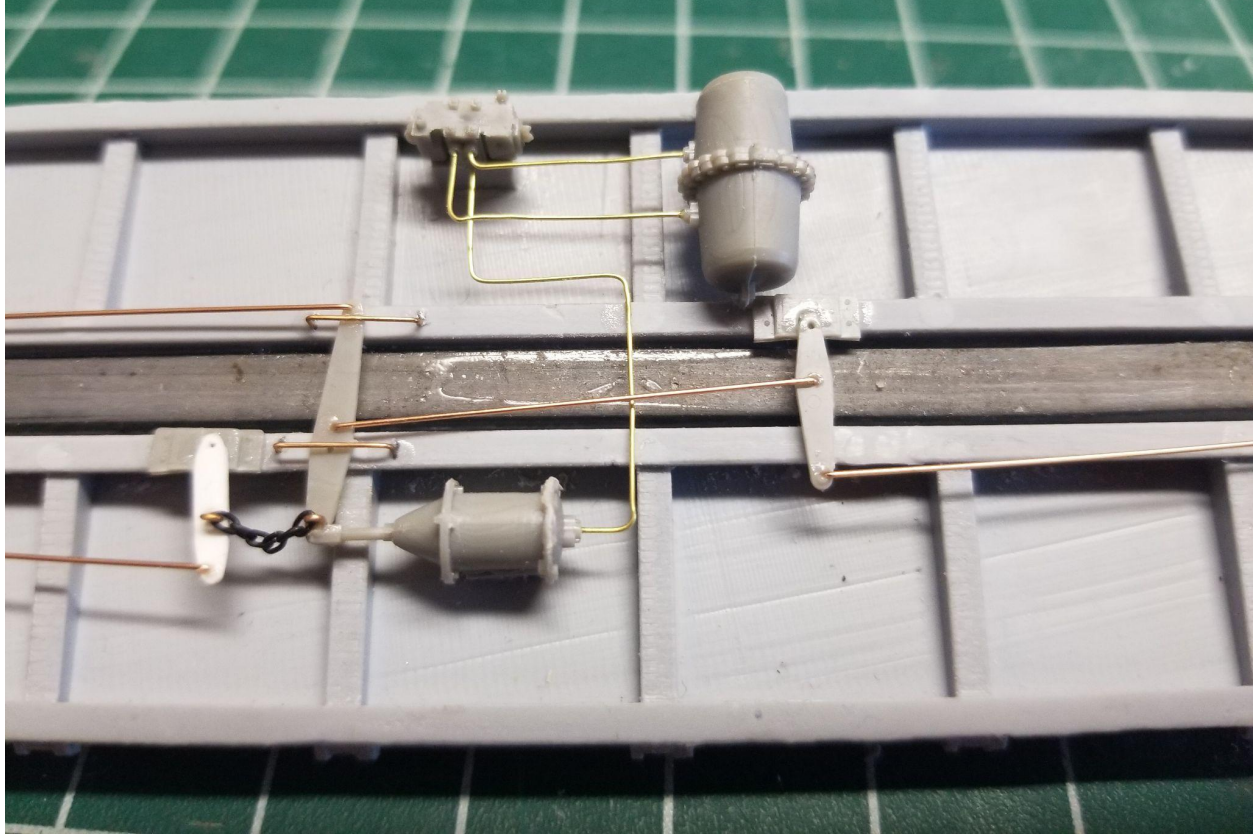


That gap between the centerbeam and the floor means a little more sanding on the bulkhead, or on the tab that fits in the top of the bulkhead.

Lay the floor upside down. Fit the lead weight between the center sills. I used gel ACC to glue it in place.

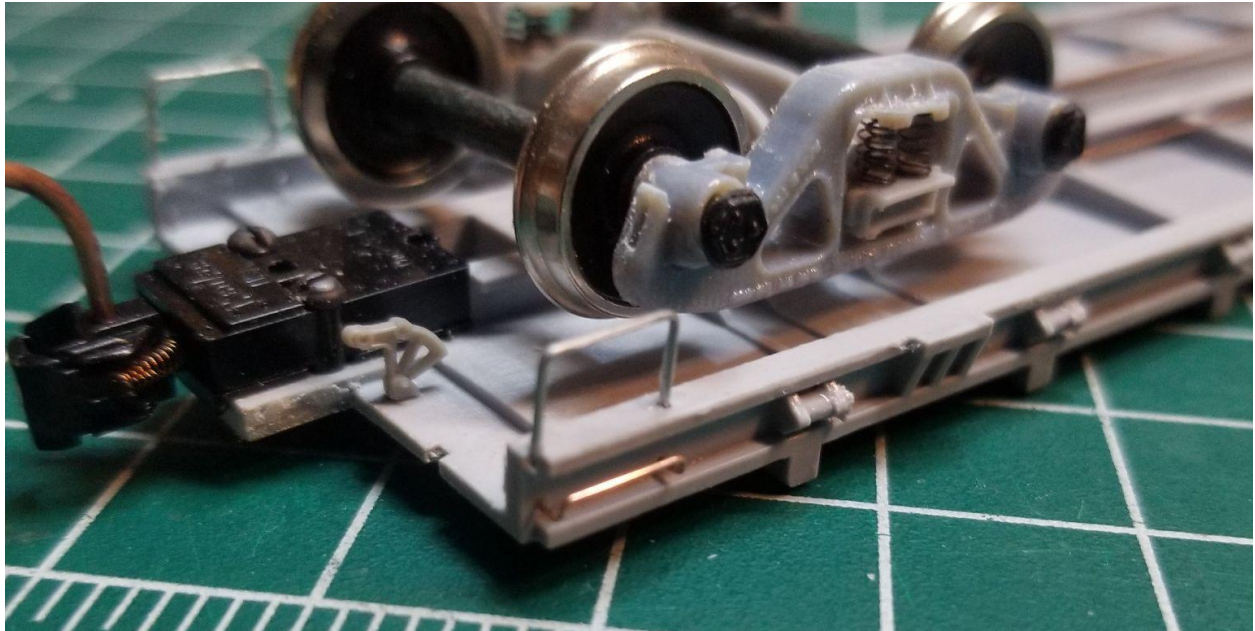


The brake cylinder, reservoir and triple valve will be visible from the side of the car. There are mounting blocks for these parts on the floor casting. Glue them in place. The rest of the brake rigging will be less visible. Your preference will determine how much brake rigging to include. Parts are included to add what you see here.



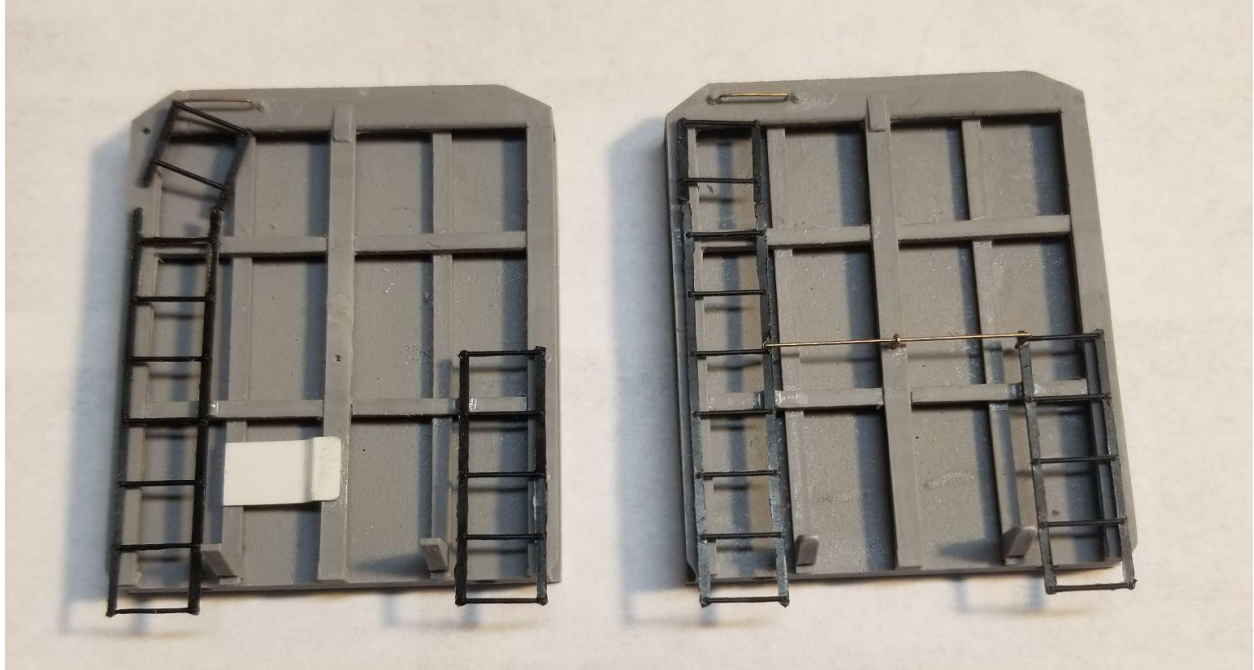
Drill holes for the drop grabs at each corner, dimples provided. Drill holes for the stirrup steps (modified staples) at each corner. Glue these in place. Install couplers and trucks and check coupler height. The trucks will protect the underbody details as you continue. The car uses roller bearing trucks, I used SMMW trucks. AM makes roller bearing trucks, as did SHS and MTH (still listed

on Portlines website). The photo shows the bell crank, but I recommend waiting until the B end brake platform is installed to make sure it is located in alignment.



Now lets work on the ends. The bulkhead castings are identical, but one will become the B end with brake details. Both ends get ladders. The left ladder is pieced together with leftover from the right ladder. There are dimples for mounting holes on the end frames. Trim off the unused mounting posts on the ladders. Using the .015 wire, make an eye pin and a length of wire to connect the ladders. Each end gets one straight grab at the top. Both ends get a long vertical grab on each side. Both ends get an etched brake platform. The platform with the notch is now the B end.

The B end gets the bent piece of styrene. This is the mount for the brake gear housing and wheel. Make another eye pin with .015 wire attached to a length of chain. Drill a hole in the bottom of the brake gear housing and glue the eye pin. Now glue the housing to the styrene mounting plate so the chain lines up with the notch in the platform. Glue the brake wheel to the housing.



The detail work is almost done. Now it's time to assemble the body. This is when a good fit of the body parts pays off, as you will depend on capillary action to get the ACC in the glue joints.

The pointed end of the brake cylinder points to the B end of the car. Set the floor right side up and put one bulkhead on the correct end of the floor. Put the center beam on the floor and hold it against the bulkhead. While holding these in place with one hand, use the other hand to glue the bulkhead to the floor. When the ACC has grabbed, repeat the process with the other bulkhead. Now you can glue the center beam to the bulkheads. Now glue the center beam to the floor. Go slowly from one end to the other and hold the floor against the center beam until the glue grabs as you go. Let the ACC set for a while and you have a solid body.



The final detail is the bell crank. With the chain hanging down from the brake gear housing, you can mark where to locate it. Then you can turn the car upside down to drill a mounting hole. I made another eye pin with a long tail to attach the chain to the bell crank.

Even with the lead weight, my finished car weighs 5.1 oz. NMRA standards call for 8 oz for a 12" car. This leaves room for a load, or you can add more weight under the floor.



You will want to remove the trucks and couplers to paint the car. Then apply the decals.



Here are some links to photos of the prototypes, and a link to all decal diagrams.

Burlington Northern

<http://canadianfreightcargallery.ca/cgi-bin/image.pl?i=bn624667&o=bn>

<http://canadianfreightcargallery.ca/cgi-bin/image.pl?i=bn624262detail&o=bn>

<http://canadianfreightcargallery.ca/cgi-bin/image.pl?i=bn624262&o=bn>

<http://canadianfreightcargallery.ca/cgi-bin/image.pl?i=bn624159&o=bn>

TTX

<http://canadianfreightcargallery.ca/cgi-bin/image.pl?i=ttzx83562&o=ttx>

<http://canadianfreightcargallery.ca/cgi-bin/image.pl?i=ttzx83571&o=ttx>

<http://canadianfreightcargallery.ca/cgi-bin/image.pl?i=ttzx86156&o=ttx>

British Columbia

<http://www.rrpicturearchives.net/showPicture.aspx?id=3480560>

<http://www.rrpicturearchives.net/showPicture.aspx?id=4780449>

<http://www.rrpicturearchives.net/showPicture.aspx?id=105802>

Milwaukee

<http://www.rrpicturearchives.net/showPicture.aspx?id=3214546>

UP

<http://www.rrpicturearchives.net/rsPicture.aspx?id=705946>

<http://www.rrpicturearchives.net/showPicture.aspx?id=3344604>

<http://www.rrpicturearchives.net/showPicture.aspx?id=3229434>

This is a link to decal diagrams for all five roads

https://drive.google.com/file/d/1FMhVXYCGjWQn8TS3flvada2KL7L02Xb_/view?usp=sharing