



# PRE-SIZE MODEL SPECIALTIES CENTER BEAM FLAT CAR

By Jim Kindraka

## Some background on the Prototype...

Historically, lumber has been transported to markets in boxcars, or heavy center and side sill flat cars or similar flat cars with bulkheads. Loading lumber in boxcars was labor intensive, time consuming and expensive. Flatcars were an improvement, but there was still added time and expense for blocking and tie downs to prevent longitudinal and lateral load shifting. Heavy bulkhead ends solved the longitudinal shifting problem, but at the expense of lading weight. The added weight of the ends reduced the weight of lumber that could be carried and increased the freight cost. Lateral shifting remained a problem requiring blocking and tie downs.

In the early 1960's, lumber producers in British Columbia began working with Canadian National Railway to design a new flat car to efficiently carry greater amounts of their lumber. They hoped to capture a larger share of the eastern US building market with a combination of low freight rates and high volume using a more efficient design. The design employed a steel girder running over the longitudinal center of the car. The girder was tied to considerably slimmed down bulkhead ends and replaced the heavy structural side and center sills of traditional flatcars. The tie down system became part of the car, adding uniformity to securing the load, saving time, as well as largely eliminating the cost of dunnage. The design was patented, the name "center beam" attached.

When further progress on the cars bogged down, the design patents were sold to Thrall Car Company in Chicago Heights, Illinois. In 1968, Thrall managed to interest Northern Pacific RR in leasing 8 cars built at Thrall's expense for tests with lumber shipments. The tests achieved a 76% increase in the weight of lumber that could be carried in a single load. It always takes railroads a while to embrace new designs. NP became part of Burlington Northern via merger in 1970 and finally, in 1977, Burlington Northern, Milwaukee Road, Union Pacific and Western Pacific ordered 385 of the 60' 8" center beam flat cars for lumber transport. They were unofficially dubbed "opera window", more accurately "oval window", center beam flat cars. The numbers continued to increase, eventually more than tripling to 1275 cars by 1986. Additional owners included: Trailer Train (TTZX and TTZK reporting marks) and TCAX, Centrex leased cars. Gunderson also built 60' 8" center beam cars for Trailer Train and GBRX reporting marks. The latter were leased to Domtar Gypsum for transport

## Photo 1



*You can still find 'em! UP 273026 is an 'oval window' center beam flatcar photographed by the author on June 23, 2022(!) in Fostoria, Ohio. The shot is going away and a little blurred as the car's presence in the fast-moving manifest freight took me by surprise. I chased the train west for close to 20 miles, but it did not slow down, nor was I able to get in a position to take a better photo.*

of sheet rock (dry wall). The 60' 8" oval window cars were built between 1977 and 1986, afterward the industry moved to the 73' center beam flat car, which remains the current standard. If you pay close attention to manifest freight trains, you can still see some earlier oval window center beam versions on the rails today (Photo 1).

### The Kit:

The Pre-Size kit is from drawings of the center beam design as built in 1977. Using those drawings, Scott MacKenzie created the car in a 3D CAD program and patterns were made for resin molds by Steve Wolcott at Pre-Size Model Specialties. Scott also did the 3D pattern drawings for two other Pre-Size kits, the Pullman-Standard OTTX 60' flat car and the 53' 6" Greenville gondola.

The kit I worked with had minimal flash to clean, and all the resin castings were straight and true. Steve posts all his kit instructions on his website so a modeler can review them and get a good sense of the work involved or the tools required before beginning. Here is a link to those instructions:

<https://www.pre-size.com/products/PS594Instr.pdf>



*I began assembling all the sub-assemblies by attaching the 'A' end to the floor and using a square to make sure it was straight and true. I then test fit the center beam and 'B' end several times. There are slots for the center beam to fit in the top of the ends. You want the center beam section to fit as tightly as possible against the floor and the ends, but you do not want it so tight it pushes the ends out of vertical alignment. Again, file a little (if necessary), test fit and repeat as often as necessary.*

One bonus of the Pre-Size kit is that a specific decal set is offered for each kit version. A modeler can get a kit with a decal for one of five car owners: BN, UP, Milwaukee Road, Trailer Train or British Columbia Railway. An additional bonus is the instructions include links to prototype photos of the different lettered cars to help guide a modeler in detailing and lettering. I decided on the Union Pacific version and extensively used this photo, <http://www.rrpicturearchives.net/showPicture.aspx?id=2927081> provided by Pre-Size.

its construction. The center-beam itself is a 0.010" etched brass piece and appears prototypically slim in profile. It is 8-11/16" long from the outsides of the bulkheads, and weighs 3.8 ounces, significantly less than the 5 to 5½ oz. recommended by the NMRA for a car of its length. With very little space to hide extra weight in its detailed underside, adding weight via a load would seem to be the most visually acceptable solution.

The car comes with factory-installed Kadee #58 couplers and the coupler box lids are screwed on, making it relatively simple for those who prefer a different size or type of coupler to trade them out. Care should be taken with the fragile coupler cut levers, which are attached to the lid, air hoses attached to the side of the coupler box, and the brake rigging in the same area on the "B" end of the car.

The printing on the model is crisp and clear, down to the tiniest print in the data panel and the "Thrall Car" logo and, on some models, the road numbers on the trucks.

## History and information on center-beam flatcars

"Center Beam" is a Thrall Car Co. trademark. The company built the first of the type in 1969 for bundled lumber traffic on the Burlington Northern, using a plan developed by Canadian



**2: WP 1401 (Joe Brugger photo).**



**3: UP 217004.**

National. Think of the beam as a very tall center sill, improving the ability of a low-decked flat car to carry heavy loads. It also ties the bulkheads, useful on cars hauling shifty loads like lumber, poles and pipe.

The type has have been built in several lengths – 66' between the bulkheads for BN, 83-footers for steel truss traffic on the Seaboard Coast Line, then these ExactRail 60' 8" cars in 1977 for Milwaukee, Union Pacific and Western Pacific. Later cars were built to 73' for less-dense kiln-dried lumber, and Walthers has offered these. The Front Range-McKean model car



**4: Closeup of the B end.**

kit of years ago was a 60' opera window version. The company also offered a truss version. The spidery truss weighed less than the sheet-steel “opera window” beam and allowed loading longer cars to 100 tons.

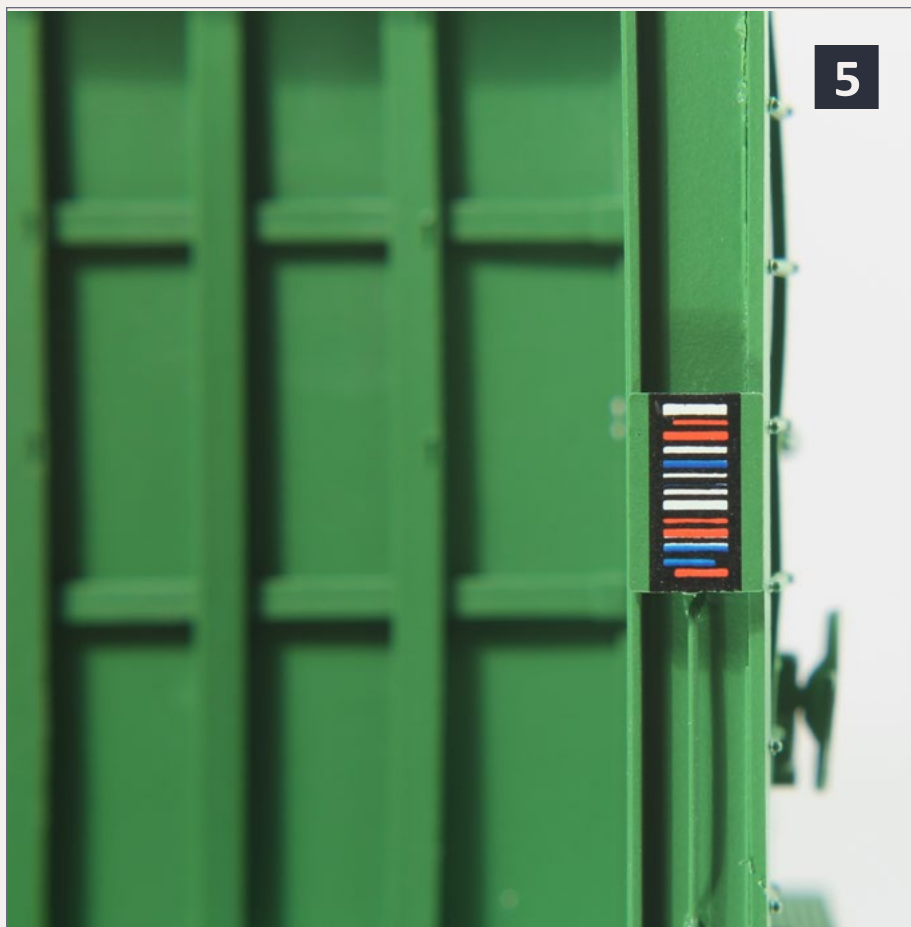
The car floors have risers that tilt slightly to the center to counteract the tendency of loads to vibrate over the car side. The riser lets the forks of lift trucks slip under the loads. Sophisticated cable and winch tie-downs secure loads, and allow them to be placed in units that can be handled by forklifts. Plain bulkhead cars and flats need to have their loads interleaved and strapped to become a single piece.

Loading and unloading areas for beam cars are usually graveled or hard-surfaced to the top of the rails so forklifts can access both sides. The cars have to be loaded and unloaded evenly;

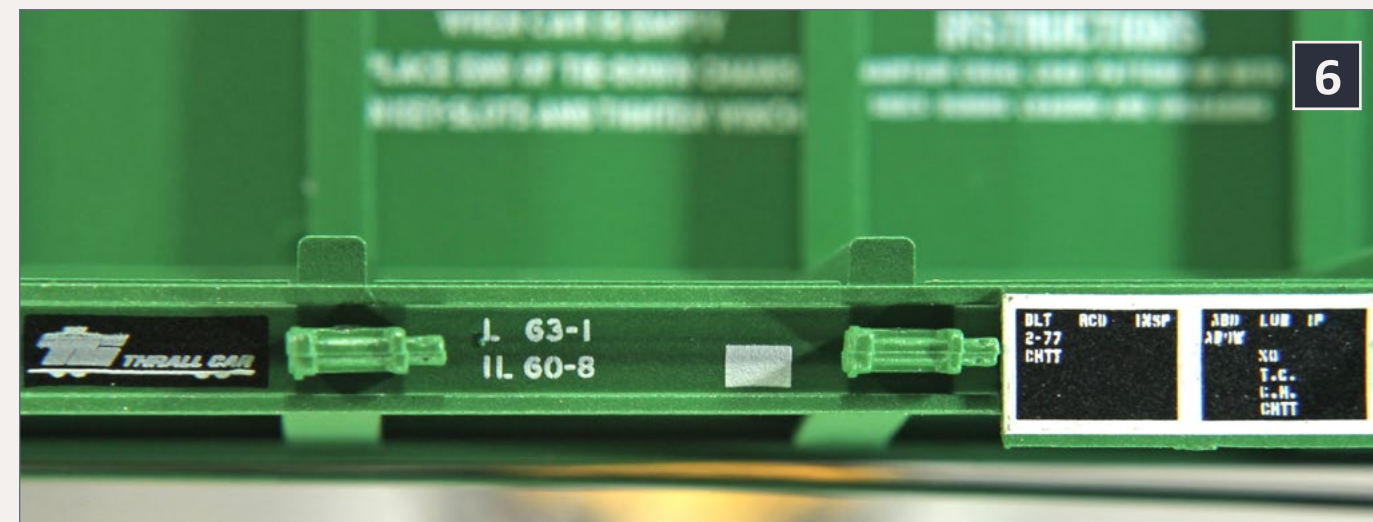
trying to load one side first and then the other will cause the car to tip over.

Gunderson built cars very similar to the original Thrall design. Trinity Railcar and National Steel Car have built truss-design beam cars.

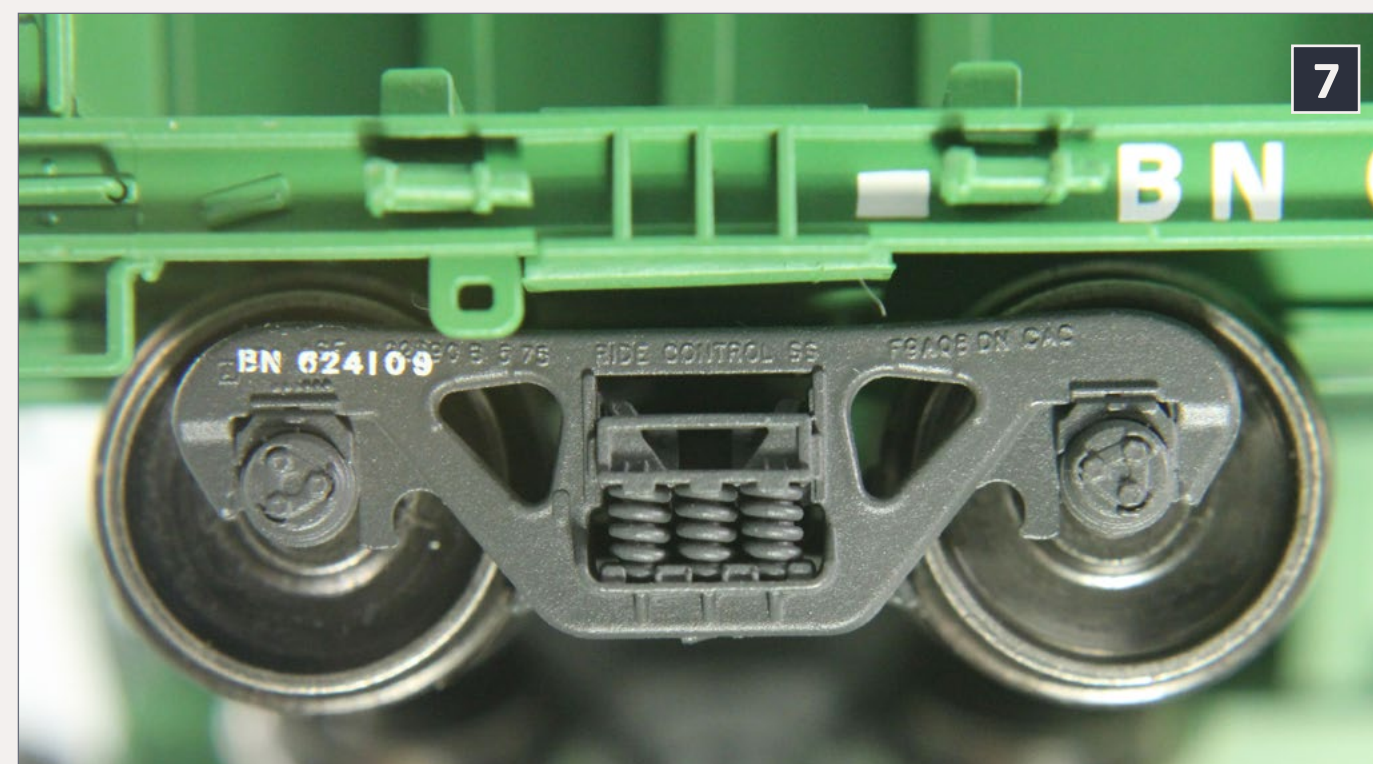
An excellent article by D. Scott Chatfield on the



**5: Closeup of ACI barcode.**



**6: Closeup of Thrall Car logo and data box printing.**



**7: Closeup of truck detail.**

development of center-beam flat cars appeared in *Railmodel Journal* in January 1996.

BNSF car data:

[bnsf.com/customers/equipment/centerbeam-flatcar](https://www.bnsf.com/customers/equipment/centerbeam-flatcar). ☒

*Pictures continued on following page ...*



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8: Closeup of center-beam profile.

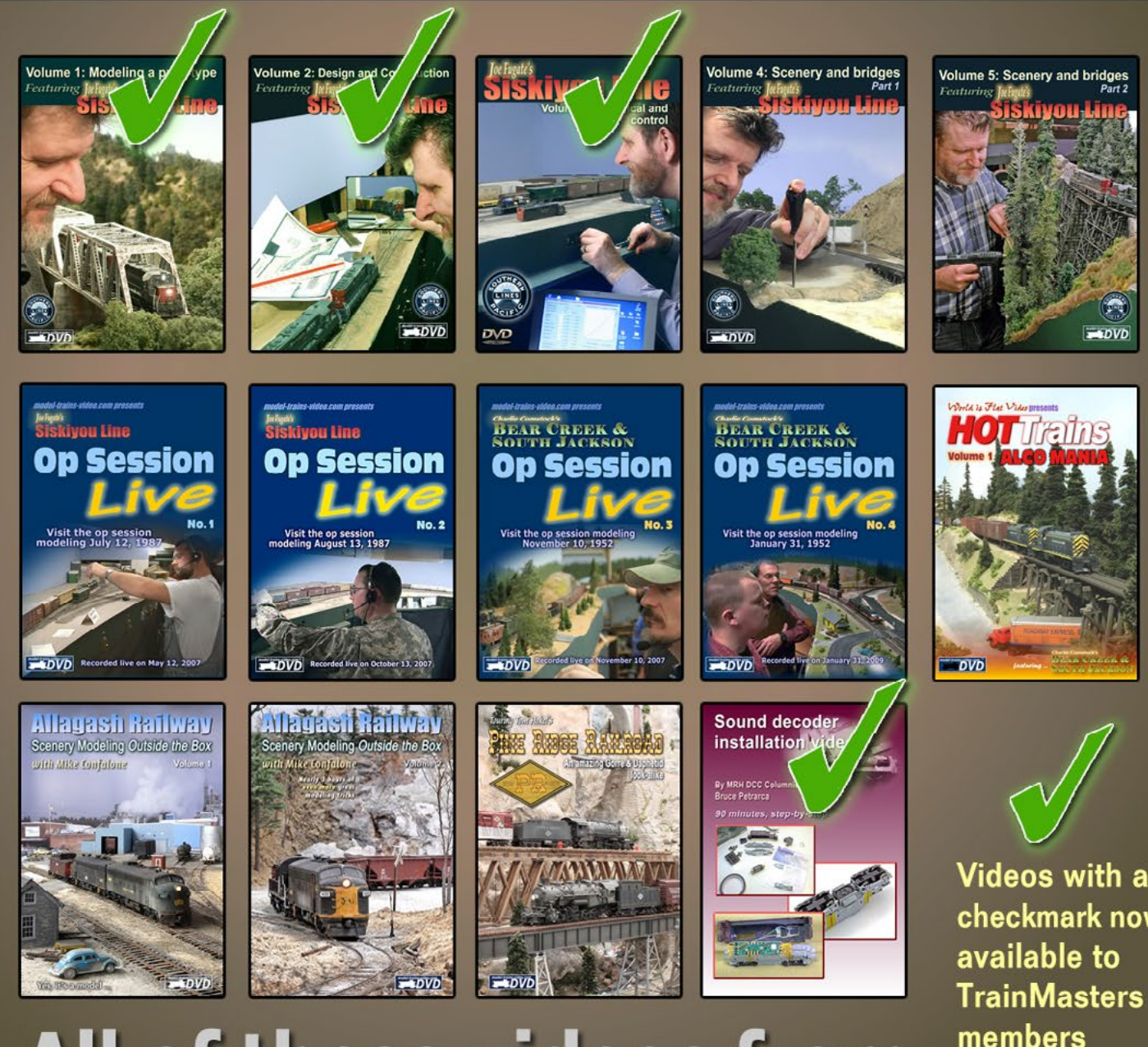


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9: The center-beams at Cascade Warehouse Reload on the Willamette & Pacific, Oregon Electric Branch.



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