

Bay Window Caboose Rebuild

A. Background

The plan presented in this document is to refurbish the NW Bay window caboose into a themed luxury railcar for customer rental (revenue generation) with a construction period of a minimum of one year or to be stretched over time based upon funding available.

There are several driving factors for refurbishing a caboose:

1. Tourist railroads like ours have learned that folks do not like riding in them:
 - a.) Partially because they have no connection to them. (No nostalgia value.)
 - b.) The view is at best poor. Obstructed view is a kind description.
2. The demographics for Tourist/Scenic/Historic railroads have changed in that people now expect luxury and amenities at these sites and on trains. This is one (limited) way to provide that.
3. Though there are many caboose styles, and only so many can be kept as museum pieces.
4. Caboosees have been out of service now for as long as half a century. There is a glut of cabooses for sale and a market for them. They are being used for both private and commercial ventures, like food and ice cream stands, even private residences and as motel units, as well as themed seating for excursions.

Today many tourist railroads are having success are turning a potential liability into an asset and new revenue stream by refurbishing cabooses themselves for luxury/private seating. For others, companies like Ozark Mountain Railcar (OMR) provide refurbished cars for private or commercial use. (A recent OMR caboose was made up to look like the inside of a casino and is available for \$66 000! But other themes include hunting lodges, parlor cars, motel rooms, office space and many more are available.)

The plan has a win-win escape hatch: though we expect to be successful increasing ridership and create a new revenue stream – and collaterally increase current ones, we can sell the railcar and recoup our costs like OMR.

B. Description of the Resulting Rebuild

Since the NHV was chartered in 1906, a glamorous - if not gaudy era - is the look we intend to capture. Though a Pullman was used, a good example of this look is from the TV series "*Wild, Wild West*", where a specially outfitted Pullman was themed for the late 1880s. (A Pullman parlor car - circa 1906 - picture is attached.)

Our customers will board from a ground level period-inspired boardwalk, which will help set the atmosphere for the ride. There is a second reason to do this as the car will both be used and on display: Use of a boardwalk will minimize the floor damaging sand and stones caught in shoes and tracked in, especially on rainy and snowy days.

The customers first impression will come from oak multi-panel entry doors from which the customer will step from a caboose set in a rail yard into a room set back in time over 100 years. Cushioned chairs covered in red velvet and gold fringe line the walls and fill the space. Matching gold fringed, red curtains surround the windows that are topped with ornate (carved) cornices. The bead board walls are a rich dark-stained oak. Tiffany stained glass gas-lit light fixtures (Sconces and ceiling) were the norm. Wrought iron tables and marble tops were a fixture. Railcars of the time had partitions along the walls that were topped with stained or beveled glass.

Floors were planked and often had red (with gold highlights and fringe) area carpets and runners. In the center of the caboose, between the bays, will be a “compass rose” floor medallion using a variety of colored woods. Shining down on it would be a Tiffany chandelier – crystal or stained glass.

The ceiling of the caboose will also be bead board planking and slightly arched, as would be expected in a railcar and to provide added headroom to make the car feel more comfortable.

C. Vision Details

Exterior Notes

The caboose exterior will be preserved with the exception of additional added windows. The exterior is to be repainted with NW colors - the deep, almost purple-blue similar to the one in Spencer. For centuries, purple was the color of wealth and royalty. Optionally, since this is not a restoration, we can reach back to a historic railroad scheme if that would help pique interest. We want the car to stand out, visually in the yard.

Several of the caboose’s windows were moved or removed. Both actions have resulted in leaks leaving the insulation and current walls moldy (with a bad smell) requiring complete removal and sanitization. New larger openings for improved viewing will be cut into the steel framework and framed in by 1 piece z-bar. The inside will then be sealed completely with a rubber-like compound used on truck beds.

The caboose open structure of the steps and decks are not conducive to women’s foot wear. The typical approach is to use cement to fill in the deck and steps to provide a smooth, flat, and more importantly seamless surface.

The steps up to the Caboose will be lighted. Currently there are electrical boxes over the caboose platform steps. These will be rewired and period globes will be added. (These are on the underside end edge of the roof, not to be confused with caboose lamps on the side of the car.) Speaking of lamps, there is one caboose lamp fixture missing on the SW corner on the side of the caboose. This should be replaced with an equivalent or we can make one.

- We should also use (exterior) lamps when the car is in use, or if not rented, on display.

Interior Notes

The caboose is very narrow and low: only 8 feet wide with a ceiling only 6.67 feet high, without proper planning and piece selection, the car look cluttered, cave-like and claustrophobic. Therefore, to create the effect, we will be opting for the smaller more proportionate sized items and raising the interior false ceiling as much as possible.

The doors are a key element to making a good first impression. The current metal doors are 30” wide and rusted away at the bottom and have allowed “critters”, including birds to build nests in the walls. These will be replaced by Oak multi-panel doors with an ornate window (picture of a sample attached).

- Because doors of this type cost between \$650 and \$1300 each, we will make our own.

The floor will be planking longitudinally down the railcar. There are three options:

- 1) Heartwood tongue and groove pine planking which was a common flooring material in that era
- 2) Oak Planking also common in that era especially in other areas of the country
- 3) An engineered hardwood floor chosen to fit that era.

In the center of the car between the two bays will be a 30-36" floor medallion. This is a classy touch found in many turn of the century buildings, but would be unique to us. These start at \$770 with virtually no upper limit on cost; however, the railroad possesses the skilled workmanship required to make this. A "compass rose" design was most common and most striking, especially when lit from above as planned.

We may also put red with gold fringe runners down the center of the 12' long "halls" on both ends of the car to provide color and atmosphere and to direct our customers' eyes to the center of the car. (Note: the runners would make the car easier to clean.)

The walls would be a rich brown oak bead board wainscoting. Above the wainscoting and around the windows will be period wallpapered walls. Above the windows will be decorative carved relief cornices. The windows would have red/gold curtains with lots of fringe. We would use decorative trim wherever required: corners, floor and crown molding.

Sconces mounted to the wall were common sources of lighting, especially in buildings. The Tiffany style was the most common at that time. Lighting would be 4-8 Tiffany sconces – depending upon type, window and seat locations and one central Tiffany chandelier hanging over the medallion. (Pictures of typical sconces and ceiling lights are attached.)

The caboose has a very low ceiling, which if left as is would be claustrophobic for riders. We have about 12" above the current ceiling where we can install a slightly "arched" ceiling. The look here would be to have ornate bolsters along the wall and ceiling (sample picture attached). This would be the best place for wiring and any ductwork.

Because the caboose is only 8' wide, seating will be a challenge. A requirement for any chairs and tables is that they be fastened to the floor. For a luxury car, the best option is to use individual upholstered chairs along the exterior walls in groups of 4. In each bay we can get a setting of 2-4 chairs, with a small wrought iron table with a granite/marble top (also from the period). (Layout attached.)

- Between the chair groupings would be narrow partitions that would provide the air of privacy for couples, but would also accommodate larger groups. These narrow partitions would either use stained or beveled glass for the upper part. (Sample picture attached.)

Corner chairs, and their close cousins, parlor chairs, have a long history back hundreds of years because of their versatility and size and were common through the mid-1900s. The advantage to us is that a rider can sit in them comfortably and either facing a partner seat or facing across the aisle to create a booth atmosphere. (Note: We may be able to build corner chairs; time and help available.) Corner chairs are also typically small and open – a characteristic we will need for the car.

In each bay, 2-4 larger chairs, if wicker fits we will use that, with a wrought iron, granite/marble topped table would be a setting. Wicker was also typical of the time period and used into the early 1900s. Wicker chairs are available through multiple sources. Removable padding will help keep the car clean.

This seating plan does provide a variety of pricing modes from full car to an individual pair. To maximize revenue, seating should be “assigned” unless the entire car is rented. The minimum seating will be about 20; the maximum is 24, which would include the use of 1 if not 2 loveseats.

Amenities

A generator would be mounted beneath the car to provide electrical power for the lighting, heating and air conditioning, and a small dormitory sized refrigerator for snacks and refreshments. (Note: batteries and use of an alternator were considered as options.) Any fuel-operated generator may produce carbon monoxide, so the floor must be sealed tightly to prevent any seepage. (A CO detector is included.)

- The RR should consider box lunches, veggie plates, cheese and sausage (w/crackers) platters available to customers, for an additional fee.

Final Word

We have the option to have a car host on board inside. There is a “hidden corner” in the car for a car host. We should consider having the car host “in costume” much like we have Frosty and Santa for our Christmas trains and for our vignettes that we have for our Halloween rides. We can have a trainman ride on the platform.

We can adapt the lighting, including the exterior cabooses lamps and lights over the steps. We would want the warm glow of a gas lamp with a slight flicker. We can use LEDs to create this effect.

The caboose is steel. The doors are 30 wide, 76” tall, and with about 29” clearance. We cannot change that. Nor will we find a caboose that does meet the current 32” clearance.

D. Rebuild Plan Step by step

Before any work is done, the car needs a thorough mechanical inspection. We do not need any surprises like we had with car 201. Repairs to the car would need to be added to the budget.

Step 1: Demolition Description

The interior needs to be removed down to the steel superstructure. This will not be easy or fast.

- a. The floor is composed of the original floor of 3” oak planks, apparently not fastened to any sill. On top that floor are 3 layers of plywood and all the layers are glued and deck screwed together and apparently to the original floor. Though removing the plywood would help, it does not appear practical as attempting to remove it may make putting on our floor more difficult. In addition there is little structural support under the floor, so removing the current floor would entail a great deal of steel reinforcement, cost and time.
- b. The walls are badly rotted and the insulation is (disgusting). The steel walls of the caboose do not appear to have steel hard points. It appears as though wood 2x4s and insulation were glued to the wall to support a plywood substructure.
- c. The ceiling is also two-part: plywood underlayment and 12” square fiber tiles. Above it is insulation. There are obvious leaks in the roof that will need to be sealed. The plywood substrate is screwed to a board (most likely) both bolted and glued to a transverse stringer across the car.

The interior walls of the car contain bird nests, insect infestation. Both the walls and ceiling insulation are moldy due to years of leakage. The car has an odor as well that has to be completely removed and sanitized before rebuilding.

This removed material would fill a container of about 150 cubic feet. (There is a plan for how the demolition should be done.)

Step 2: Preparation Description

The car leaks from the roof as well as from the modified windows. The roof leaks need to be found and patched. Since this is a metal caboose we may need to weld patches. We will need to plug the stove stack hole (but leave the stack in place).

At this point in time rather than repair the windows in the sides (the bays appear ok),

- a. We will cut and frame new windows for the walls.
- b. The windows and frames are designed like buses and RR cars today so that in an emergency, they can be pushed outward for escape or rescue, but the z-bar frame will surround the window in such a way, to prevent leaks.
- c. Since the walls appear to be simply riveted sheet metal (1/8" thick), we may want to add (weld in) reinforcing channel.

The current doors have rusted out. These are 30" doors. These will be replaced by oak multi-panel doors with an ornate "window" panel being "transparent". We intend to make them ourselves.

The metal frame can be scraped, prepped, primed and painted once the window frames have been installed as the windows will be made, and installed separately at a later time.

The platforms and steps can be filled in with concrete, or some other filler.

Inside the car, remnants of the previous rebuild need to be removed as well as the priming and sealing. The recommendation is to use a "paint-on sealer" like the ones used in truck beds or under coating.

Step 3: Reconstruction Description

Reconstruction proceeds in this order:

- a. Rough Wiring. Added wiring is required for the lighting. We may move all the wiring to overhead as that is where we will have the most room. (Rewiring is inexpensive and the safest option.)
- b. Hanging the generator beneath the car (access is easier at this time.) The car already has a circuit box, which we can reuse.
- c. Locating and putting in the supports for the heating and cooling unit.
- d. The current ceiling is way too low and there is about 12" of room above it we can get at. The channel used to support the current false ceiling will be removed and replaced with supports for an arched ceiling that supports also the car frame. This will involve some torch cutting and welding wall supports.
- e. The walls and ceiling will be insulated.
- f. The walls and arched ceilings go in next. We will use bead board and decorative cornices and trim. In addition, the walls will be stained and varnished.
- g. Final flooring will be installed. Exposure to both heat and cold are a long term stability issue considered. The plan is to use a stable material for the wood floor and a (industrial) carpet runner down the aisle. This

runner will be fastened down to an extent; however, it will be removable and after a period of time, and replaced.

- h. Seating will be installed and fastened down
- i. Appliances and lighting fixtures will be installed internally and externally

At this point the car should be ready to go.

E. Labor and Materials Summary

Step 1: Demolition

Face masks and (construction material) dumpster rental.

Time for removal: 2 days. Scraping/grinding could take 2 weeks (time equivalent).

Step 2: Preparation

Forms and concrete; primer, paint and sealer (3-4 gallons each) - \$600

Volunteer labor: The 200 man-hours

Step 3: Reconstruction

Generator: \$450-\$700 Max (approximately 9-10 watts per \$)

A/C – Heating Unit (8000 -12000 BTU (max) range): LG or Frigidaire used for reference: \$400-500

Small refrigerator: \$200-300 (around 4 Cu. Ft)

Floor and subfloor: \$2000 (roughly \$7 per square foot) (Range \$1600-2200)

Walls and ceiling: \$1500 (Roughly \$6 per square foot)

**Chairs: \$2800 (Range \$1920 - \$3200)

Sconces and Chandelier: \$800 (range \$600 -\$1400) (Seating and hard points will determine lighting reqmts.)

Cornices: \$150-\$200 (\$1.60/inch and up)

Electrical: Boxes and wiring: \$100

***Doors (2): If we make them \$600, (If purchased: prohibitive)

****Windows and frames: \$1020 Maximum

Fabric and Fringe: Not priced but available at Jo-Ann Fabric (among other places)

2 Tables and 3 granite/marble tops: \$500 (probably can get "scrap pieces", will know in Feb.)

Window material: \$300-400

Miscl. Materials: \$400-500

Labor: The equivalent of 800-1000 man hours. (If we build chairs, this time would nearly double.)

Prices reflect items currently available and also do not reflect quantity purchasing.

**As of 12/18/2012 confirmation of pricing and delivery of authentic Edwardian Corner Chairs has not been received. However, the internet provides a cost effective alternative by providing detailed plans for making them cheaply and easily, but this would add to the timeline and we are short 1 resource: Jack Hinkel.

*** The oak for the oak doors, retail would run about \$200/door. The intent is to also include a window.

This is anticipated to be far cheaper than purchasing one door.

**** The Plexiglas and wood framing will be about \$300-400. We can use either steel or aluminum z-bar and the size depends upon how thick we remake the walls. The estimate reflects using 4" z-bar, which is unlikely.



Note the door and the coves. The chandeliers appear to be “crystal” and ceiling mounted.



Tiffany style Cornice.



Tiffany stained glass sconces examples. The rectangular narrow style shown may be the best selection for us depending upon the seating, the window placement and the caboose structure itself.



Tiffany stained glass ceiling light. Crystal styles also available but will “tinkle” when in motion.



Pictured above is an Edwardian corner chair (1901-1910), with a drop in cushion design (~\$120). Other designs are available and we may want to mix and match. Simpler, more rectangular designs can be replicated by us with time.



Note the ornate partitions between seating areas. The end door is a 6 panel oak door.



Unstained Oak bead board. We can panel the entire wall or use it as wainscoting then using period wall paper above it.

