

# DSS&A DULUTH SLEEPING CAR RESTORATION 2024 PROGRESS REPORT

MID-CONTINENT RAILWAY MUSEUM

NORTH FREEDOM, WI



*Exterior work in progress on the DULUTH in 2024.*

## **Progress Summary**

We had a good year on the DULUTH sleeping car project thanks to the great support we got from the crew of volunteers, hired help, contractors and numerous donors. Twenty two volunteers put in a total of (600) volunteer hours on the project. Based on the current estimated value of each volunteer hour (in Wisconsin is \$31.86/hour) this equates to total of \$19,116 of volunteer work performed on the DULUTH. In addition to the volunteer help, A total of \$25,970 in donations was received during the fiscal year. We greatly appreciate and are very thankful for the volunteer help and donations towards the project.

During the year we spent less time on dismantling deteriorated woodwork off the car and we have moved towards spending more time on installing new materials and woodwork back onto the car. As for dismantling the last of the original single light clerestory window frames and associated hardware were removed from the car. In addition, water damaged veneer on the west smoking room aisle wall was removed as was water damaged portions of the smoking room and south entryway ceilings.

Inside the car new electrical wiring was routed to the locations of the future overhead light fixtures in the

sleeping compartment and in the stateroom. With the new wiring in place efforts could turn to installing the new ceiling in the sleeping compartment. This was a significant and time consuming undertaking. New pieces of bending plywood were cut, fit and screwed into the roof ribs to replace the water damaged veneer ceiling that was removed in 2023. Once the new bending plywood material was installed all of the joints and the depressions from the screws were filled with epoxy putty. Next came careful sanding and reapplication of epoxy putty to develop a smooth and continuous ceiling surface. Once completely smooth we started to paint the ceiling. We are presently 60% complete with the first coat of ceiling paint and we are expecting the ceiling will take two to three more coats of paint to achieve the desired finish.

In the south end of the car new headlining panels were made and installed in the smoking room and the adjoining aisle. In addition, replica mahogany veneer pieces were installed above and below the east windows in the smoking room. More recently the deteriorated portion of the veneer upper ceiling in the smoking room and entryway were cut out so new pieces can be made and installed. These areas have since been filled with epoxy putty, sanded smooth and ready for paint. The balance of the headliners and

ceiling panels, that were not water damaged, were given two coats of the green paint. On the exterior of the car framing repairs were made in three areas on the east side.

The three locations, totally about 15' in length, required that the deteriorated belt rail sill be cut and removed. Once new yellow pine belt rail sills were made, they were cut, fit and installed on the car. Completing this work allowed us to proceed with installing the lower siding on the car. During the summer over 50% of the new lower car siding was installed on car.

With the belt rail sill repairs completed it also allowed us to start installing the new window sills on car. The car features a continuous window sill running the entire length of the car. Two of the new custom milled window sill pieces were cut, notched out to go around the car framing and installed on the car. There are six additional window sills needing to be cut and fit on the east side of the car.

Up on the roof volunteers removed all of the original electrical wiring that provided power to the lights throughout the car. The wiring, wire trough and sheet metal enclosure ran the length of the car. This work was done as the insulation on the old wiring was in poor condition and the car's new wiring is being run inside the car framing to eliminate penetrations through the roof.

Completed contract work included constructing four new vestibule window frames, two mirror frames for the smoking room, three new interior doors and a veneer panel for the smoking room. Contracted work in process includes making new window post panels, screens for the lower windows and trim pieces for the smoking room.



*Photo of the sleeping compartment in the DULUTH at the end of November.*

Planned work for the DULUTH in 2025 is to complete all of the ceiling work in the car, continue restoring the sleeping compartment, installing the balance of the car siding and window sills on the car.

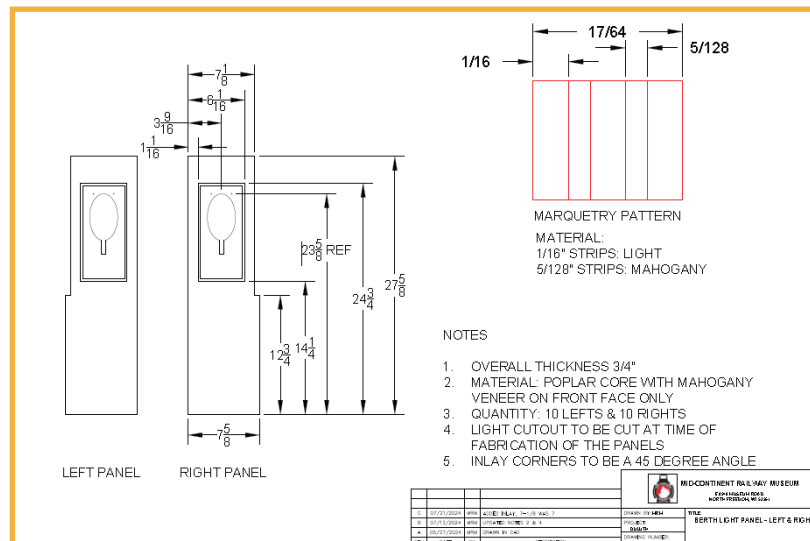
Photos and additional information on the progress made during 2024 on the DULUTH Project follows.

### **1) Planning and Design Work**

- Updated the DULUTH 3-year restoration plan.
- Updated the list of work tasks and sequence of activities.
- Color matched the original paint color (Tuscan Red) for the exterior of the car.
- Established a source for green plush mohair upholstery to use in the car.
- Developed various drawings, including one for the window post panels that hold the berth lamps.
- Developing and submitting grant applications for 2025+.



*Photo of the exterior of the DULUTH as of the end of November.*



*A drawing developed to replicate the window posts.*

## 2) Dismantling Work

- Removed all of the original single light clerestory window frames from the car.
- Removed all of the clerestory window hardware from the wood framing blocks on the car.
- Removed the deteriorated veneer off the west smoking room aisle wall under the oval window.
- Cut out and removed water damaged portions of the smoking room and south entryway upper ceiling.

- Removed the remnants of the smoking room aisle door framing (in the west wall).
- Removed deteriorated portions of the belt rail sill piece in three locations on the east side.
- Removed the last remaining section of lower siding on the car. This was in the middle of the car, where the car name (DULUTH) was lettered.
- Removed the original wiring, wooden wire trough and metal enclosure from the roof of the car.



*The last of the original clerestory windows being removed from the car (L) and a portion of the deteriorated belt rail sill in the process of being removed (R).*



*Before the upper roof wiring, wire trough, and metal enclosure were dismantled and removed.*



*Volunteers in the process of removing the electrical wiring, etc. off the upper roof (L) and after everything was removed (R).*

### 3) Restoration Work

#### 3.1 ) Stripping and Finishing

- Stripped (7) of the original single light clerestory window frames.
- Stripped (3) of the original upper and (3) lower sash window frames from the smoking room.
- Hand lettered the numbers on the (10) headboards for the sleeping compartment.

- Sanded and painted the original headliners in the car that did not require replacement.
- Sanded and polished the (12) new cast brass table hooks for the (6) berth tables.
- Sanded and primed the new lower siding that was installed on the car.
- Applied the first coat of the ceiling green to 60% of the ceiling in the sleeping compartment.



*Stripping and sanding in process on one of the single light clerestory windows (L) and hand lettering the numbers on the berth headboards (R).*



*Painting the north east aisle headliner (L) and the freshly painted original ceiling in the Women's Toilet Room.*

### 3.2) Making and Installing Materials

#### Interior:

- Installed new bending plywood in the upper ceiling of the sleeping compartment. This was an area that was approximately 4 feet wide by 30 feet long. All of the joints and the area around each screw were filled with epoxy putty and sanded smooth.
- Installed the new mahogany window header on the east side of the smoking room.
- Installed new mahogany veneer below the window

in the smoking room and one new piece in the sleeping compartment.

- Made new headliner panels for the smoking room and the west aisle. These panels were covered with canvas, painted and installed. This completes the installation of the new headliners in the car.
- Fit and installed the headliner trim on the west side of the smoking room aisle.
- Cut and fit new birch plywood tops for the (2) corner closets in the smoking room area.



*The ceiling area awaiting replacement (L) and volunteers installing the new bending plywood material (R).*



*Sanding the epoxy putty along the joints (R) of the upper ceiling and the completed ceiling after all filling and sanding was completed (R).*



*The smoking room outer wall prior to repairs (L) and after the replicated veneer piece were installed (R).*



*Installing trim around the new headliner in the aisle across from the smoking room (L).  
The smoking room outer wall with the replicated veneer in place and the new headliners (R).*

### Exterior:

- For safety and reliability purposes the entire car is being rewired. This includes the wiring for all of the interior car lighting as well as the low-voltage annunciator system.
- Completed the installation and routing of the wiring to the (20) berth lamps in the sleeping compartment.
- Completed the installation and routing of the annunciator wiring in the sleeping compartment.
- Routed flexible metal conduit from the electrical cabinet to the annunciator panel for the annunciator wires.
- Developed routing and drilled holes for the wiring needed for the sleeping compartment overhead lamps.



*Volunteers in the process of installing new car siding on the lower portion of the car (R and L). A portion of the replacement belt rail sill is visible above the new siding (L).*



*Some of the new lower siding installed on the car. The portion on the right has the first coat of Tuscan Red tinted primer.*





*One of the new window sill pieces being trimmed to fit around the car framing (L) and the first new window sill piece in place on the car (R).*

### **3.3) Materials, Parts and Hardware**

- Took delivery of the following items:
  1. New vestibule end window frames (4)
  2. Smoking room mirror frames (2)
  3. Smoking room aisle door
  4. Men's toilet room door
  5. Women's toilet room door
  6. 160' of custom upper roof drip rail (wood)
  7. New mullions for the smoking room stained glass window frame
- Through donations and purchases, obtained (10) additional Dayton style berth lamps for the car. We presently have (15) of the (20) of the necessary original style berth lamps for the car.
- Purchased and received an oil tank found for one of the single burner entryway oil lamps.
- Placed an order for the following items:
  1. (6) new berth tables
  2. (20) window post panels, with marquetry, for the berth lamps
  3. (6) window screen frames for the lower sash
  4. Various mahogany trim pieces for the smoking room
  5. A new bottom rail for the smoking room stained glass window frame

- Ordered and received the copper screen material needed for the deck screens.



*Replicated mirror frame pieces for the smoking room.*



*Three new interior doors and four new vestibule window frames (behind the door) replicated for the car.*



*Prototype of the new window posts panels showing the Dayton flip up berth lamps in the closed (L) and open (R) positions.*



*Several of the Dayton berth lamps that were acquired and awaiting restoration (L)  
The newly acquired four for one of the entryway oil lamps in the DULUTH (R).*

**3.4) Electrical**

- Routed new wiring to the sleeping compartment and stateroom overhead lights.
- Routed new wiring for smoking room overhead light and the aisle light.



*Newly installed electrical wiring routed above the ceiling of the sleeping compartment.*

**4) Fundraising**

A \$10,000 matching fund drive was held in 2024. The seed money for the matching fund drive came from an anonymous donor (\$10,000). A total of \$25,970 in donations was received during the fiscal year.

**5) Expenses**

Total expenses for 2024:.....	\$16,656
Contract work:.....	\$5,842
Labor:.....	\$4,275
Supplies:.....	\$6,539

Note: The amounts listed for Fundraising and Expenses are for the 2024 fiscal year which ran from Nov. 1, 2023 and October 31, 2024.

**6) Volunteers**

In 2024 (22) MCRM volunteers recorded in excess of (600) man hours of time on the DULUTH project, equating to a value of to a \$19,116. This is based on the State of Wisconsin value for volunteer time (\$31.86/hour).

**7) Publicity and Programs**

MCRM’s Restoration Department 2024 “ALL HANDS ON DECK” 5 day volunteer session attracted new volunteers and averaged 20 volunteers per day. Work during this session included several projects on the DULUTH.

The DULUTH was opened up for tours throughout the summer as well as during the annual Vintage Rail Car Tours. Updates on the DULUTH Project are regularly posted on MCRM’s website and Facebook.

William Buhrmaster  
MCRM Restoration Department  
December 20, 2024