

Mid-Continent Railway Museum

Duluth, South Shore & Atlantic DULUTH Sleeping Car Restoration

2021 Progress Report

Very good progress was made on the DULUTH project in 2021 thanks to a great crew of volunteers, contractors and hired help. The primary focus was to work on restoring the 10-section sleeping compartment but a lot of other areas and parts of the car were also worked on during the year. The most noticeable progress on the car has to be the interior woodwork that has been stripped of its 120 year old varnish and shellac. What has reappeared is beautiful mahogany and marquetry throughout the car. Another significant milestone for 2021 was the upper sleeping berths and lower berth seat ends, as they were completed and delivered to the museum. This included six replicated upper berths and four restored (original) upper berths. The berths are absolutely beautiful and we look forward to the day when they are reinstalled in the car. Underneath the car significant progress was made the air and hand brakes. As of the end of the year we now have functioning air brakes and the hand brake system is 95% complete.

Photos and additional information on the progress made on the DULUTH Project during 2021 follows.



View of the sleeping compartment showing the woodwork that has been stripped during 2021

Berths:

- Completed the construction and finishing (staining/varnishing) of the (6) new upper berths
- Completed the construction and finishing (staining/varnishing) (6) new lower berth seat ends
- Applied final finish (stain/varnish) to the (4) original upper berths
- Delivered all of the completed berths, seat ends, seat cushion frames to the museum



A pair of the original upper berths after they have been restored and following fresh coats of stain and varnish



A crate containing (5) of the upper completed berths being loaded in Michigan (L) and unloaded at Mid-Continent (R)



(3) of the (6) new lower berth seat ends getting ready to be loaded and shipped to MCRM

Interior:

- All of the old finish (shellac) has been removed from the existing woodwork in the sleeping compartment, men's smoking room and the women's toilet room. This work was performed by hired help due to the extensive scope of this work and the large number of work hours required.
- All of the clerestory windows were removed from the car. New windows are being made as the railroad revised the design of these windows and eliminated the original stained glass.
- Sent out 100+ pieces of interior trim and wood parts to be chemically stripped
- (12) sets of new seat cushion frames were made. Each set includes a head rest, seat back and seat bottom
- (12) sets of seat cushion support frames and seat back top rails were made
- (12) pairs of seat cushion support blocks were made and finished
- Test fit the revised berth partition overlay piece (prototype)
- Material was purchased for reproducing the headliners in the car



Interior woodwork in the process of being stripped inside the DULUTH



A portion of the end door after being stripped



Mirror frame in the process of being replicated. Original frame (top) and replicated marquetry for a new frame (bottom)



New bottom seat cushion supports



Test fitting the berth partition trim piece in the sleeping compartment with the aid of a laser



Taking delivery of the replicated oval window frames and the seat cushion frames

Men's Smoking Room:

- Volunteers have further developed the drawings for the missing Smoking Room and Men's Toilet walls
- Removed the deteriorated headlining panel along the east wall.
- Ordered a replacement wall panel (for above the three windows) that had significant water damage



The east wall of the smoking room showing the headliner and upper wall panel removed



The west wall of the car across from the smoking room showing the stripping in process

Exterior:

- Continued to remove the roof material (rolled asphalt and tar) off of the car. The roof is presently approximately 75% stripped and the majority of the wood on the roof deck appears to be in very good condition
- (9) new oval window frames (mahogany) were made
- (25) new outer window frames (mahogany) were made
- 160 feet of new poplar window sills have been made for the car at an area technical college
- We have started to remove some of the deteriorated wood siding and trim from the car





New replica oval window frames (L) and new lower sash window frames (R) made this past year for the DULUTH



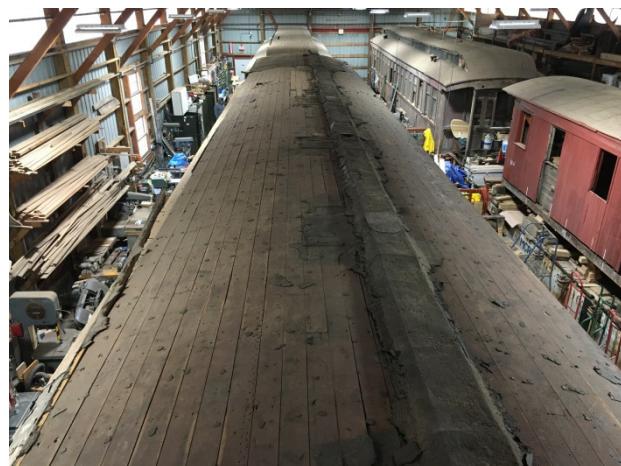
The cross-section of the original window sill



Making the new window sills at an area Technical College



View of the lower roofing being removed



The upper roof deck after the roofing material has been removed

Air and hand Brakes:

- Completed the fabrication and installation of all of the air brake cylinder levers and rods
- Tested the functionality of the air brakes
- Finalized the hand brake system design
- Completed the installation of all of the hand brake levers, rods , supports and guides under the car
- Remaining work on the hand brakes involves installing the hand brake levers (handles), stems and support bracket in each vestibule



Two of the new brake cylinder levers that were made. The steel levers are 1 inch thick and 36 inches long



The bottom side of the DULUTH showing the air cylinder with the new levers, rods and hangers installed



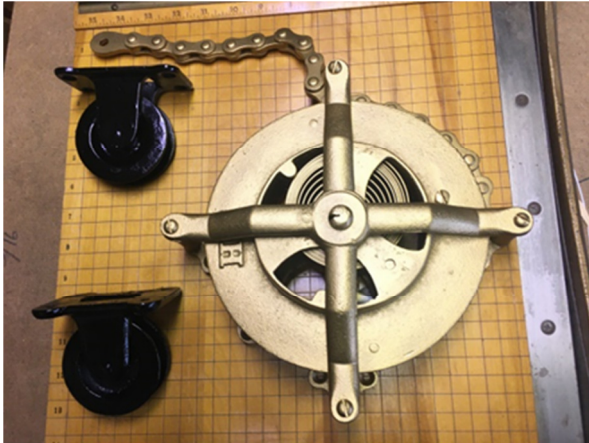
Volunteers installing some of the hand brake brackets



View of the air brakes being tested on the DULUTH

Parts and Hardware:

- Cleaned, restored and delivered over 400 pieces of berth and sleeping compartment hardware
- Presently 95% of the berth and sleeping compartment hardware has been obtained, reconditioned and restored
- Cleaned and restored the hardware and rollers for the (25) window shades
- Secured a Baker heater for the car. The original one had been previously removed from the car



Restored Berth Pulley mechanism



Restored and polished window shade hardware



Boxes containing over (400) pieces of restored berth hardware



Baker Car Heater acquired for use in the DULUTH. Awaiting restoration

Planning:

- Updated the list of the sleeping compartment work tasks and sequence of activities
- Obtained a proposal for reproducing additional wood parts for the car
- Updated the three year restoration plan
- Developing 2022+ grant requests

Fundraising:

- A total of \$35,185.12 was donated (plus \$1,000 pledge) to the DULUTH Project during Nov. 1, 2020-Oct. 31, 2021 fiscal year.
- The DULUTH Sleeping Car “Matching Your Funds Drive” campaign kicked off in 2Q 2021 and met its goal in the 4Q of 2021 by raising a total of \$30,000
- The “Giving Tuesday Fundraising Challenge” held on November 30, 2021 raised a total of \$2,200

Financial:

- A total of \$41,851.79 was expended on the project during the Nov. 1, 2020-Oct. 31, 2021 fiscal year. This is a combination of labor, contractor and material costs.
- In 2021 Volunteers logged (418) man hours of time on the DULUTH project.



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