

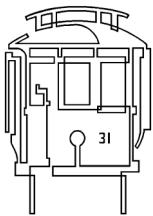


THE NEW ENGLAND ELECTRIC RAILWAY HISTORICAL SOCIETY  
Seashore Trolley Museum & National Streetcar Museum at Lowell

VOL 63, NO 4  
October-December  
2020

# DISPATCH





# NEERHS

Seashore Trolley Museum  
& National Streetcar Museum at Lowell  
**PO BOX A**  
**KENNEBUNKPORT, ME 04046**  
(207) 967-2800 | [www.trolleymuseum.org](http://www.trolleymuseum.org)

## Mission Statement

New England Electric Railway Historical Society shares powerful connections between the past and present. We preserve knowledge, context, and resources for future generations by collecting, restoring, operating, and exhibiting significant public transit vehicles and artifacts.

### Membership

[membership@trolleymuseum.org](mailto:membership@trolleymuseum.org) Connie Garland Membership Secretary

Membership Dues for 2020:

Student, Military, Disabled, and Senior (60+)	\$30
Regular Membership	\$35
Family Membership	\$60
Regular Plus 1 (single guest admission)	\$55
Sustaining Membership	\$75
Contributing Membership	\$120
Museum Patron	\$600
Museum Benefactor	\$1,200
Life Membership	\$1,000

Address Changes: Please notify the Membership Secretary, or the Museum office at the address above.

### Corporate Officers

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Vice Chairman of the Board	Sue Ellen Stavrand
President & CEO	James D. Schantz
Vice President	James Van Bokkelen
Executive Director	Katie Orlando
Treasurer	Charles R. Sullivan
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Corporate Secretary	Cecilia B. Clapp
General Counsel & Clerk of Corporation	David Johnson
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Front cover photography by Jacob Foley



# The DISPATCH

*The Dispatch* is published by the New England Electric Railway Historical Society for its members and friends. Any opinions expressed herein are those of the writers, and do not necessarily represent the corporate position of the NEERHS.

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The next issue of *The Dispatch* will be published in March 2021. The deadline for submissions is February 1st. Please send your articles and/or original photography to [director@trolleymuseum.org](mailto:director@trolleymuseum.org) for consideration.

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*Passengers are socially distanced on New Haven 303 as it hurries down the main line during 2020 Pumpkin Patch Trolley.*



## From the **EXECUTIVE DIRECTOR** Katie Orlando

**W**e did it! We made it through our regular operating season during the COVID-19 pandemic. Thank you to all who helped us make this possible—from our members for sticking with us through this uncertain time, our operating crew for helping us remain open, special event volunteers who helped make Pumpkin Patch Trolley and Trolleyween possible, to our track/yard/overhead volunteers for making the best of our unusual three days closed each week to improve our infrastructure and complete projects we've had on our "to-do list" for decades, our restoration shop volunteers who helped fill in the gaps created by our general fund, and all of our staff for their flexibility working with our funding restrictions all season long.

We received great news in October; we received \$100,000 through Maine's Economic Recovery Grant Program. This amount was the maximum award that a business could receive and will help us offset some of the \$700K in revenue loss we experienced in 2020.

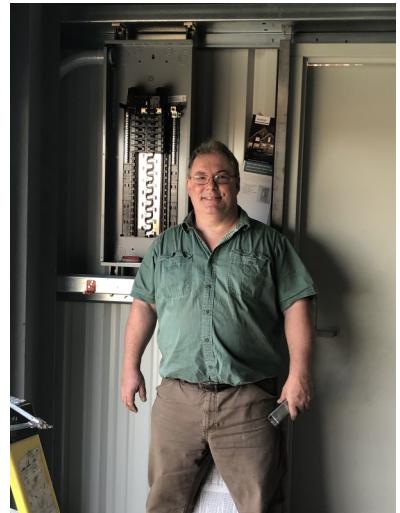
Unfortunately, due to increased transmission rates and community spread in our state and in York County, and state policies regarding travel restrictions for Massachusetts residents (where most of our volunteers that help with our winter events reside), we made the difficult decision to cancel all December events. We always place the safety of our guests, volunteers and staff first, and with these changing pandemic conditions, we were no longer able to confidently do so if we re-opened for Christmas Prelude.

While this was an easy decision for us to make for the health and wellness of our community, volunteers, staff, members and potential guests, it still doesn't make the loss of \$30K in revenue we were trending to make from our December events any easier. During your holiday giving, please remember Seashore Trolley Museum, and if you have anything left to give, consider making a donation to support our mission at <https://trolley museum.org>

Despite the challenges, we welcomed 7,585 guests during our regular season. For comparison, last season through October 2019 we hosted 22,413 guests. Our COVID-admissions are at 34% of normal, which may seem like a low number on its own, but compared to other museums in our class in our Maine who are reporting 7%-15%, or 0% because they haven't been able to open yet, we should be proud for accomplishing this.

During the pandemic the Museum hosted weekly and now bi-weekly check-in calls with our volunteers to keep everyone engaged. We will be continuing the check-ins during the off season and welcome any member to join us. They take place every other Wednesday at 2:30PM. The next check-ins will take place on December 30th, January 13th, January 27th, and February 10th. To join via computer/tablet/smartphone, visit [zoom.us/join](https://zoom.us/join) and enter the Meeting ID 745 448 073 Password: 830181.

The work continues for us behind the scenes on trolley restorations and 2021 season prep. Opening Day will be Saturday, May 1st. However, if the operating challenges brought on by the pandemic improve by April, we hope to offer our first ever Easter event. Stay tuned for more information on our social media pages. Thank you for standing by the Seashore Trolley Museum during this uncertain time. We continue to get through this, together.

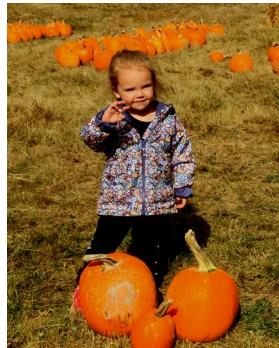


*Top: Volunteer Benoit Drouin, a commercially licensed electrician, installed AC electricity in Fairview Carhouse in November.*

*Bottom: Dedicated Museum Store Associate Katie Adams received special recognition from the Society at the end of our season.*



# 22nd Annual Pumpkin Patch Trolley



The event was a BIG success; over the course of three weeks we hosted 2,646 guests and grossed over \$38,771.54. Despite the pandemic, we just had our highest grossing and highest attending PPT year yet! Thank you to the 40+ volunteers that made the event possible!



## National Association of Canine Scent Work



NACSW took over our campus the first weekend in November for Level 3 and Summit Scent Trials. We hosted 35 canines and their owners each day. This is their second trial at the museum; this year search areas included inside Fairview, the new picnic area by South Boston, and the 0600s. The group will return in November 2021 if pandemic conditions allow the event to proceed.

# Major Track Project: Restoration Shop Yard

For three months this fall the Track Department worked replacing the switches in the Restoration Shop yard. This is back-breaking work and we appreciate all of the volunteers who have supported this project.



## Visitors Center Renewal

Thank you to Phil Morse, Sue Ellen Stavrand, Jim Mackell, Arthur Morin, Nick Oulette, John Mercurio, and everyone else who continued to working on the Visitors Center painting project until it was finished on 10/31. The building's new colors are inspired by the Atlantic Shore Line color scheme.

Thank you also to Sue Ellen Stavrand, who, with Terrapin Landscapes, sponsored and overhauled the gardens surrounding the front of the building.





## A New Direction:

# A STRATEGIC PLAN UPDATE

By Rob Drye, Board Chair & James Schantz, President & CEO

The Museum was hyper-focused on our 2020 operating revenue and expenditures, and sustaining our day-to-day work during this uncertain time. While the Board of Trustees decided to hold off on launching our new Strategic Plan officially this year so members could be encouraged to focus their financial support on our general operations, Project Managers, Project Sponsors, staff, volunteers and Trustees worked behind the scenes to begin working towards our five-year vision. This is allowing us to get a head start and celebrate early successes, helping us continue to move in our New Direction, despite the obstacles COVID-19 keeps throwing in our way.

Early Strategic Plan accomplishments and successes include: Raising 100% of the funds needed to accomplish our 5-year projects in the areas of Overhead and Track; raising 100% of the funds needed to expand our work vehicle fleet so volunteers are best equipped to do the work needed to achieve our overall 5-year goals; nearing completion on Tower C Renewal Phase One; making significant progress in our overall Accessibility and Mobility campaign by purchasing a Mobilift to help those with physical limitations access our operating fleet; and tackling several projects included in our Visitors Center Renewal Phase One, including painting the exterior and out buildings and updating the landscaping around the building. We have also recently broken ground on our new Bus Display, which will be located to the left of the Parts Warehouse close to the center of campus. We're hoping this new exhibit will be ready to show off to our members and guests next season.

Another big accomplishment in our New Direction quest was being able to present amendments to our bylaws to the membership. Member shareholders of the Society met on Saturday, November 14, 2020 for a Special Electronic Meeting called by the Society to formalize the results of the proposed Bylaws Amendments vote. 177 total ballots were cast—103 online (58%) and 74 by mail (42%). Currently there are 520,863 total shares of the Society spread between 508 members who are in good standing in 2020. 374,314 shares were voted (72% of total shares). The results were:

BY SHARES:

YES: 312,563 (84%)  
NO: 61,568 (16%)

POPULAR VOTE:

YES: 156 (88%)  
NO: 21 (12%)

Thank you to all who voted and participated in this process.

As 2021 draws near, we think it's time to present a "soft launch" to our members and supporters. We've been having a lot of fun behind the scenes moving the museum forward, and it's time to share that excitement with all of you. As the pandemic still persists, we know that hyper focusing on our operating revenue and expenditures will be really important over the next 12 months, but we think there is room to start public fundraising campaigns for four of our twenty priority projects.

At the end of January, be on the lookout for a special mailing and email sharing more about these four projects—The Portland -Lewiston Interurban Narcissus Restoration, The Lehigh Valley Transit *Liberty Bell* 1030 Restoration, a family play area, and Coney Island—an area on our property to be developed for exhibiting our rapid transit collection. We encourage you to read more about these initiatives and show your support by contributing financially and sharing our plans with others in your family and network who would also be interested in our work.

In this issue, learn more about a fifth Strategic Plan project; Tower C. If you have anything left to give during the holiday season, please consider supporting the momentum of this project.

**Help Wanted: Project Champions!** We are looking for others who would like to take an active role and work with us to launch our fundraising campaigns, write grants, create marketing collateral, and plan, design, and execute new buildings and grounds projects. If you have these strengths and are ready to roll up your sleeves and get to work for the good of your museum, we would love your help! Please email us at [chairman@trolleymuseum.org](mailto:chairman@trolleymuseum.org) and [president@trolleymuseum.org](mailto:president@trolleymuseum.org) and we will connect you with the project/s that are the best fit for your talents.



## TRUSTEE NOMINATIONS

The 2020-21 Trustee Nominating Committee invites all members in good standing and supporters of the Seashore Trolley Museum to consider running for the 2021 Board positions available. At least two candidates will be elected by our member shareholders, and at least one candidate will be appointed by our Board of Trustees.

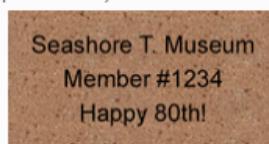
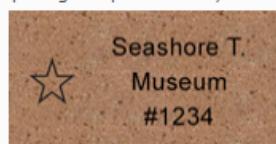
In addition to candidates who support our mission, we seek candidates who possess significant leadership, strategic planning, site planning, and for-profit and/or nonprofit board experience; candidates with connections that will meaningfully help expand the Society's network of donors in New England and nationally; and candidates who can support the budget of the Society through personal resources.

To learn more or for a nomination form, please visit <https://trolleymuseum.org/2020-trustee-nominations> or reach out to our Executive Director at (207) 967-2800 x101. Completed nomination forms are due by December 31, 2020.



## BRICK CAMPAIGN

**Leave your mark!** Members are invited to purchase personalized bricks to recognize your connection to the world's oldest and largest electric railway museum. Bricks may be purchased online at [www.trolleymuseum.org/brickcampaign](http://www.trolleymuseum.org/brickcampaign). Engraved bricks will join others that have already been installed on our Visitors Center platform before the 2021 season begins.



## INFORMATION WANTED

We are researching information on Portland's transit bus fleet to compile a dossier on each of the five buses listed below.

If you or anyone you know has any records or memories of these buses, your assistance is requested. Please contact our Historian, Richmond Bates, at [historian@trolleymuseum.org](mailto:historian@trolleymuseum.org) or (207) 967-2800 x102.

Portland buses in the collection:

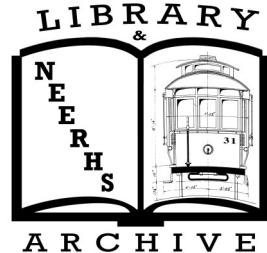
- No. 4 – 1936 Mack
- No. 310 – 1950 GMC
- No. 504 – 1957 GMC
- No. 700 – 1974 GMC
- No. 8801 - 1988 Grumman-Flexible



In place of our annual appreciation dinner in Andover, MA, join us instead over Zoom as we toast all of our supporters and thank all who helped us get through this challenging year. We'll recap our season in pictures, and awards will be given to supporters who went above and beyond this season. After the program, join us in a trolley trivia game in photos! The event will be held on Tuesday, December 29<sup>th</sup> at 7PM-9PM Eastern Time over Zoom. To join, visit [zoom.us/join](https://zoom.us/join) and enter the Meeting ID 592 390 4676 and Passcode 1939. To join by phone, dial (929) 205-6099 and enter Meeting ID 592 390 4676 and Passcode 1939.

# DONATIONS TO OUR LIBRARY & ARCHIVES

It is now almost a year since the Library Committee has been able to meet in person or work safely in the Library. However, the pandemic has given many people time to clean out files, basements, attics, etc. That being said, the Library is running short on storage facilities for donations. That doesn't mean that we don't want your donations, but that right now we have to be more selective in what we accept and when. The Collection Development Policy of the NEERHS Library is summarized below:



- The collection consists of books, journals, technical reports, company and industry documents, blueprints, maps, photographs, small artifacts and other research material. An emphasis is put on materials relating to streetcar and interurban service, including rapid transit, trackless trolley, and bus service.
- The geographic scope in general is worldwide beginning in the 1830's, narrowing to East of the Mississippi River in 1980, and narrowing further after the year 2000 to the greater New England region. Pertinent materials relating to vehicles in the Museum's collection, but outside this general policy, are also collected.

Upon receipt, materials are vetted as to condition and/or duplication. Those that are not needed by the Library may be offered to other libraries and museums, traded, or sold. Income from any sales is deposited into the Library's budgeted account for the further development of the collection.

**The Library will NOT accept the following:** Past issues of the Society's newsletter, The Dispatch, and past issues of the Society's Annual Report; Materials and personal notes from Trustees and other committee meetings at the Society; Newsletters, materials, and personal notes from other museums; VHS cassette tapes; Books, journals, and other materials that are not in "excellent" or "good" condition; and Items that have a mildew odor.

As you go through your personal collections, please keep these guidelines in mind. It also helps greatly if you can create a list or inventory of the materials you wish to donate. That can be a help to both the donor and the Library. As with other donations to the Seashore Trolley Museum, you will receive a thank you letter for your donation.

We know that there are critical, valuable materials being held in personal collections that would benefit the Museum. If you have material that you would like eventually to come to the Museum, but are not ready to let it go now, please be sure to clearly mark it so that it will eventually get to Seashore or to where you would like it to go.

For questions, please contact Karen Dooks, Librarian, and the Library Committee at [librarian1@trolleymuseum.org](mailto:librarian1@trolleymuseum.org)

## RESTRICTED GIVING POLICY CHANGE

At the recommendation of the Finance Committee, the Trustees voted at the January and March 2020 Board of Trustees Meetings to implement a new giving policy for restricted gifts. This policy is in line with best practices of other nonprofits, and as we eagerly await to launch our full Strategic Plan following the pandemic, the Society will officially begin implementing the policy on January 1, 2021.



**The New Restricted Giving Policy:** Donors may continue restrict gifts to the Society if they are \$100 or more, and/or if the gift is directed towards a specific project listed as a priority in the Society's Strategic Plan. Gifts less than \$100 will be allocated to the Society's general fund. Projects that have been designated fundraising priorities over the next five years include:

**Restoration Projects:** Aroostook Valley interurban 70, Atlantic Shore Line locomotive 100, Baltimore Transit semi convertible 5748, Claremont line car 4, Denver & South Platte Birney 1, Boston 25-foot box car 396, Boston & Maine inspection car 500, Boston Hawker Siddeley Blue Line 0622/0623, Boston & Maine bus 784, Boston Red-Line 01450/01455, Boston Pullman PCC 3127, Boston Type 5 5821, Boston center entrance 6131, Boston Pullman trackless trolley 8361, Davenport diesel locomotive D-1, Brooklyn convertible 4547, Chicago Surface Lines Pullman 225, Chicago Aurora & Elgin interurban 434, Connecticut closed car 1160, CRANDIC interurban 118, Dallas Stone & Webster Standard 434, DC Transit PCC 1304, Eastern Mass semi convertible 4387, Eastern Mass lightweight 7005, Lehigh Valley Transit interurban 1030, Lexington & Boston single truck 41, Manchester interurban 38, Bay State semi convertible 4175, Minneapolis - St. Paul Gate Car 1267, Montreal Golden Chariot observation car 2, Nagasaki single truck 134, Portland Lewiston Interurban *The Narcissus* 14, Newark PCC 5, Connecticut Company open cars 303, 838, 1391 & 1468, North Shore Line interurban 420, Oshawa Baldwin-Westinghouse steeple cab locomotive 300, Pettibone Speedswing tractor, Philadelphia & West Chester side door 62, Philadelphia Nearside 6618, Boston snow plow 5106, Providence & Worcester locomotive 150, Rochester Peter Witt 1213, St. Louis PCC 1726, Sydney Class P 1700, Toronto Peter Witt 2890, West End Street Railway 20 foot box car 235, and Wheeling, WV Curved Side 639.

**Capital Projects:** New Library/Archives/Exhibit Hall, Visitors Center Repairs, Bus Display in Butler Field, Library Building Repairs, Restoration Shop Heating System, Trolley Play Area/Picnic Area, Parts Warehouse Extension, Tower C Renovations, Track & Overhead Maintenance, Mobility/Accessibility Campaign, and Coney Island.



## Seashore Collection Spotlight: **BOSTON ELEVATED RAILWAY TOWER C** By Richmond Bates, STM Historian

**A**t Seashore Trolley Museum, two impressive Boston Elevated Railway (BERy) structures - Northampton Station and Tower C - complement the museum's comprehensive collection of Boston transit vehicles. Both structures come from the Boston Elevated Railway, the predecessor of today's MBTA Orange Line. Seashore's collection also includes seven cars from the Main Line Elevated that operated by these structures on a daily basis. Since coming to Seashore in 1975, Tower C has been a focal point of the museum campus.

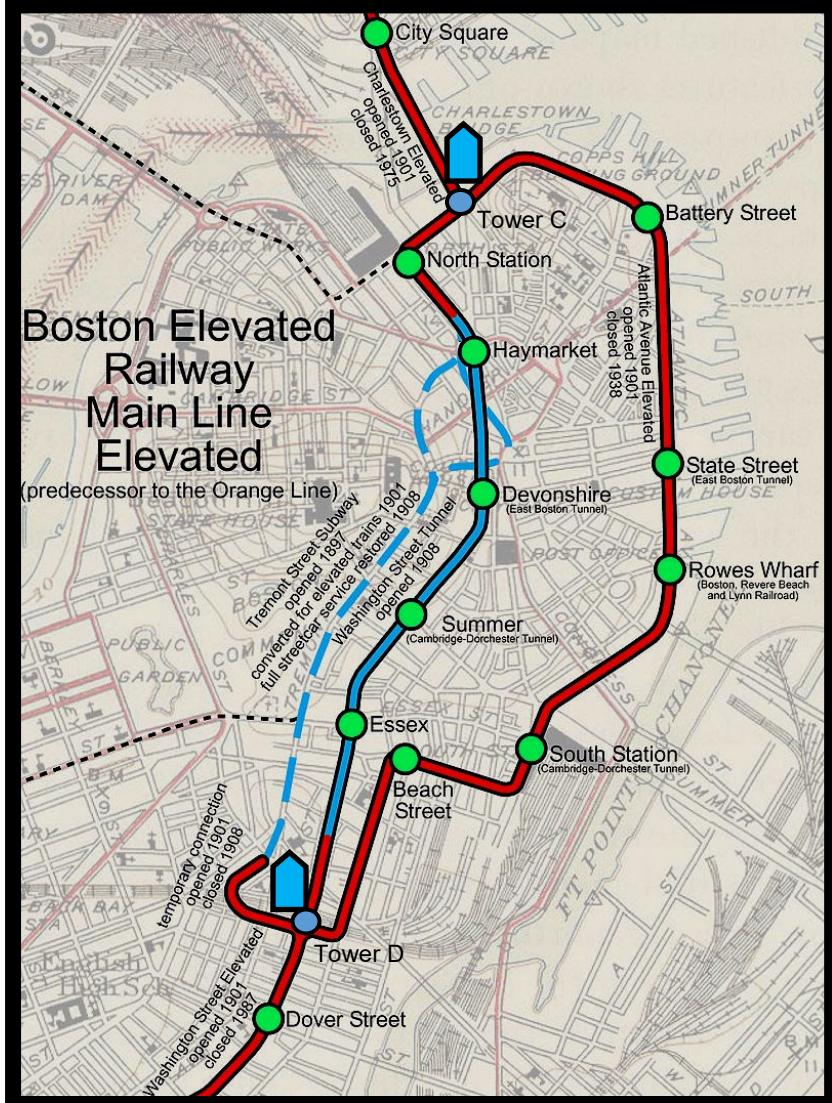
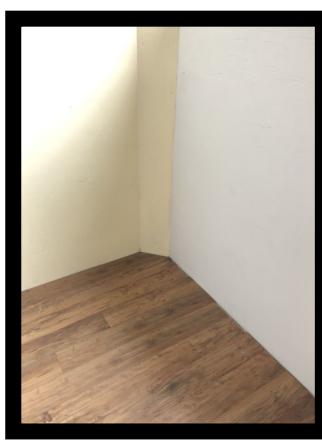
Tower C's story begins when Boston's first elevated railway opened on June 10, 1901, running between Sullivan Square on the north and Dudley Square (now Nubian Square) on the south. Soon after, on August 22, 1901, the Atlantic Avenue elevated line opened. The Atlantic Avenue line ran along the Boston waterfront east of the Main Line. It connected with the Main Line near North Station and at a point south of South Station completing a loop around downtown Boston. The junctions between the Main and Atlantic Avenue lines, as well as at four other points, required towers to house a signalman controlling the switches and signals at these locations. The BERy designated the towers with letters. The busiest was Tower C at the junction near North Station. The tower stood in the middle of the railway junction on steel supports 30 feet above the intersection of Causeway Street and Charlestown Street (now, North Washington Street). The location was known as Keany Square and was at the southern approach to the drawbridge over the Charles River. Beneath Tower C, the steam-powered Union Freight Railroad ran on tracks on Causeway Street, serving industries and wharfs along the waterfront. A towerman worked on the second floor of Tower C. Based on the color marker lights on approaching trains, he would align the track switches and semaphore signals for the train's correct route. Track switches were moved by electro-pneumatic power which was then cutting-edge technology, replacing manual "armstrong" methods. For the pneumatic power, the BERy provided compressed air via pipes along the tracks coming from compressor plants at Charlestown and Roxbury. BERy's towers included an interlocking mechanism so that the towerman could not align switches and signals that would create conflicting routes for trains. Tower C had a twenty-three lever interlocking machine from Union Switch & Signal Company.

Besides using up-to-date technology, the BERy also wanted an appealing appearance for its stations and towers. The BERy selected Alexander Wadsworth Longfellow, Jr., a prominent Boston architect and nephew of poet Henry Wadsworth Longfellow, to design the stations and towers on the Main Line Elevated. Longfellow's design for all the structures featured detailed decoration, peaked roofs and wood frames sheathed with copper exteriors that weathered over time to a green color.

About 3:00 AM on July 17, 1902, a fire badly destroyed Tower C. Because of Tower C's strategic location, BERy quickly made arrangements to keep trains running. The company temporarily installed an interlocking machine from Tower G, Bartlett Street. The BERy soon rebuilt the tower.



Tower C being lowered onto the barge at the Charlestown Bridge in Boston, November 1975. Photo: Seashore Trolley Museum Collection.



Pictures in the two left columns show our progress throughout 2020 to preserve and restore the Tower while creating an additional exhibit space for members and guests to enjoy. At the time of publication, flooring in the Tower was being installed (bottom middle photo). The map at the top right highlights the route of the Boston Elevated Railway. The bottom right photo shows the exterior of Tower C in present time, with Eastern Mass Rwy 4387.

Tower C was witness to Boston's molasses tank explosion a short distance east of the tower in 1919. The explosion killed 21 people, destroyed a trolley freight station on Causeway Street and badly damaged part of the Atlantic Avenue elevated structure on Commercial Street. In the early 1920s, the BERy replaced its semaphore signals with three-color light signals. On October 1, 1938, service ended on the Atlantic Avenue line, and that line's structure was dismantled a few years later except for a short stub at Keaney Square to store trains waiting for events at nearby Boston Garden to let out. This storage track was removed in 1955, eliminating the junction at Tower C and leaving the tower without a function. So, the BERy removed the console of levers that had controlled the switches but left the tower standing. In April 1975, the MBTA, which was then Boston's transit operator, opened the new Orange Line subway to Malden, replacing the northern part of the original Main Line route running by Tower C. The elevated structure at this location was abandoned and dismantled.

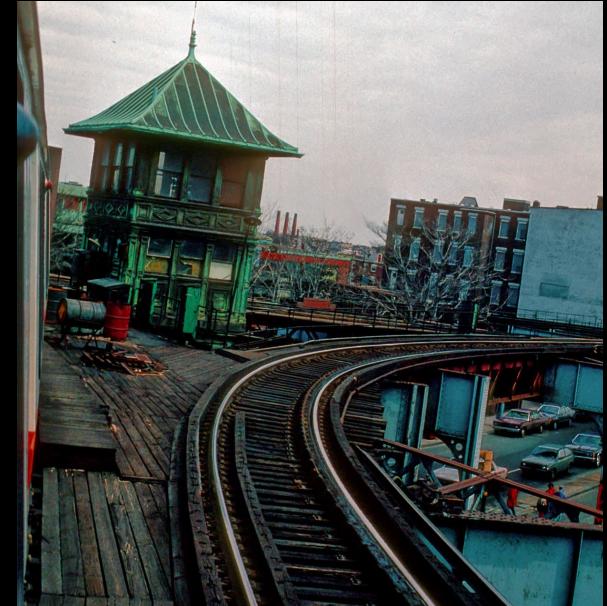
In 1974, with the impending closure of the northern part of the Main Line, Seashore began considering preserving some aspect of the elevated. The MBTA would be continuing to use the line's rolling stock, but the T agreed to donate Tower C if the museum could remove it before the elevated structure was dismantled. Seashore succeeded in coordinating the donated services of crane, trucking and barge operators and getting assistance from the Boston police. On September 7, 1975, Tower C was lifted off the elevated structure, trucked the short distance to the middle of the Charlestown bridge and lowered onto a barge. The Perini Corporation stored Tower C at its facility in East Boston until the museum could arrange transport to Kennebunkport. Tower C's size made road transport impractical. So, on November 2, 1975 a tug boat pulled Tower C on a barge to the Kennebunkport harbor. There, Seashore crews cut the tower in two just below the second floor window sills. On November 4, the two sections were trucked to the museum and reassembled.<sup>1</sup> When the MBTA donated Tower C to Seashore, it also donated an interlocking control panel. This panel came from a different tower since Tower C's control panel had been removed 20 years before.

Once installed, Seashore used Tower C as its museum office until the current Visitors Center was built. In recent years, Tower C has provided storage for some artifacts.

The museum's experience in moving Tower C to Maine became valuable when another Main Line Rapid Transit structure – Northampton Station – became available to Seashore in 1989. Northampton Station needed a longer trip over Boston streets to reach Boston harbor, but Northampton Station's barge route was similar to Tower C's.

Seashore is currently renovating Tower C with a plan to install an exhibit on the structure's first floor. In early 2020, with thanks to the McNeil Family and an anonymous donation, a contractor completed asbestos abatement and lead paint removal on the first floor. All season, museum staff have fixed the roof leaks and renovated portions of the interior and the exterior copper sheathing. Tar that had been used when the building first arrived to patch holes in the exterior has started to be removed, and holes have been repaired with more appropriate materials to ensure longer-term preservation of the building. All of the first floor windows were carefully restored—we put in the extra time to do the project "right" and were able to save all of the first floor windows, with thanks to our Master Woodworker Seth Reed. Restoration work continues this winter on fine tuning the windows as they're placed back in the Tower and the first floor's flooring.

The Tower C Fund needs an infusion of new donations this winter to keep the work going. In Phase 2, we hope to restore all of the windows on the second floor, continue repairing sections of exterior copper sheathing, and address the Tower's foundation and stairwell. Please help keep the momentum going on this project and support this exciting work by donating to Fund 987.



*From top to bottom: View of Tower C looking toward the Charlestown Bridge. The remnant of the Atlantic Avenue El is at the right. Paul Kehoe collection*

*Tower C's sister, Tower F, was located at Dudley Station (now Nubian Station). It has been rehabbed and incorporated into the bus station built once the El was torn down. Seashore Trolley Museum Collection*

*Trains continued to run past Tower F until service on the Roxbury Elevated ended on April 30, 1987. Seashore Trolley Museum Collection*

<sup>1</sup> A detailed report regarding transporting Tower C to the museum is in the *Seashore Trolley Museum 1975 Annual Report*, available on the museum website.



## Frogs, Poles & Pull-Offs: AN INTRODUCTION TO TROLLEY WIRE By Rob Drye

The classic technologies used to recreate and operate a classic electric trolley line fall into a number of categories, some on the cars and others in outside infrastructure. Technologies on the cars include the wood and/or steel body work, the electric propulsion system, the multiple brake systems, and air operated auxiliary systems. Key infrastructure technologies include track and the overhead wire systems. Each of these technologies is of vital importance to the museum as all must interact smoothly to make streetcar operation possible.

Each of these areas also provides a great opportunity for members to learn and keep historic skills alive. So it is with the construction and maintenance of classic trolley wire as was once used in virtually every trolley system across North America. In this article I will try to cover some basic principals laying the ground for more in-depth treatment in future articles. I'll also cover recent overhead wire activities at Seashore, in what has been a very busy year. And I'll welcome anyone who finds the area interesting to join me for some hands-on experience!

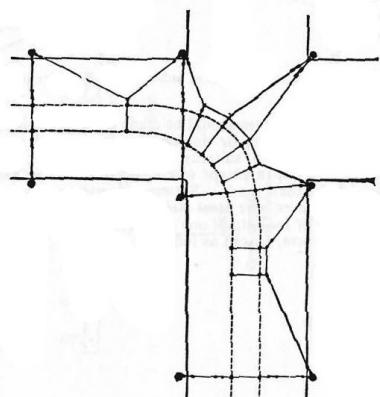
The explosion of electric trolley systems across the continent traces its origin to the pioneering work of Frank Julian Sprague who installed in Richmond, VA in 1888 the first system that featured all the defining characteristics of the thousands of systems to come: The cars were propelled by direct current motors and drew power from the overhead wire by means of a trolley pole pressed up against the wire. The current then returned to the power station via the car's steel wheels and the steel rails.

### Trolley Wire Basics

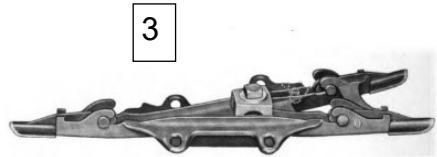
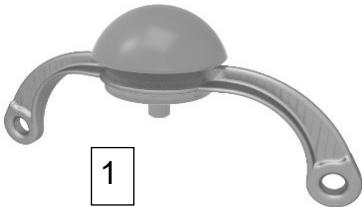
As trolley systems grew the track work especially in busy intersections could often be quite complex where multiple lines crossed and intersected. The wire over this track had two functions: one to support the wire and the second to keep the wire centered over the track so the trolley shoe would follow the correct path. The accompanying diagram shows wire over a double track 90-degree curve. The dashed lines indicate the trolley wire. The black dots represent tall line poles. The solid straight lines represent span wires that support the trolley wire. The shorter wires are pull-offs that hold the trolley wire over the rail.



Several fittings are used to connect the wires. This clamp on the left fits over the top of the wire, anchoring in grooves along the wire. The center hole is used to connect the clamp to one of two hangers or "ears" illustrated on the following page (Nos. 1 & 2) The one with two arms (to connect the span wire) and one with a single arm (for use with a pull-off).



One other important and widely used component is a “frog” (illustration 3), which is used over a switch or turnout where one line branches off. Positioning of frogs is especially important so the trolley pole doesn’t follow the wrong wire.



These are a few basic overhead components. There are many other fittings for different configurations, insulation, and electric control.

As track layouts became more complex the placement of wire became an art. One of Seashore’s founders, Ted Santarelli, was a serious student of trolley overhead and spent many hours on top of one of our line cars ensuring our wire reproduced authentic best practices.

### Overhead Wire Activities in 2020

I recently became the Museum’s Superintendent of Overhead, putting to use experience I had gained helping with wire work, but found there was much more to learn. I started out slowly, getting a feel for the parts supply and tools available. The list of work ahead was daunting: Wire in the Highwood yard needed to be raised; poles needed replacement on the main line; and steel poles awaited installation at the lower campus. All represented new challenges.

First we inventoried both special overhead tools and the parts and components acquired over the years.

Seashore has at least four types and sizes of trolley wire in use, ranging from “two ought” 2/0 (about 0.4” diameter) to “four ought” 4/0 (almost 1/2” diameter) in both round and grooved varieties. Grooved wire is drawn out with a groove on each side allowing clamps such as the one illustrated above to be placed easily. Round wire uses fittings that have to be hammered onto the wire. We have many types and sizes of clamps and ears, thanks to years of obtaining components when trolley systems closed. Furthering the above introduction, wires hung across the rails between poles are span wires, wires that are used to shape curves are backbone wires. Pull-offs go from backbones to ears on the contact wire. Some poles are fitted with bracket arms that hold an ear and don’t require a span wire.

On July 13, I received a call at work saying that a severe wind event had brought down the main line wire north of Meserve’s (Pumpkin Patch field). I made arrangements to come to Seashore the next day, and found that fortunately, the contact and messenger (top wire) were intact, but one of the bracket arms was broken. The pole holding the broken arm was one of five already planned for future replacement and very tender. We rigged up the arm with a new guy wire, which stabilized it so it could be left until the pole could be replaced.

Next was planning the pole replacement with our contractor, Private Power Services of Saco. Hector Picard showed up during the bracket arm fix so we were able to come up with a plan. I snuck in some recon trips on the line car Claremont 4 during late July and early August in between public trips.



*At the end of August 2020, we contracted with our friends at Private Power to replace six poles on the main line.*

*Photos by John Mercurio*



*From top to bottom:*

*Private Power continued to support our overhead needs this season. Photo by John Mercurio*

*The new hi-rail bucket truck helping us address a section of overhead near the Visitors Center north switch.*

*Another view of the hi-rail bucket truck.*

*The Overhead Department fleet.  
Photo by Rob Drye*

Another task arose on July 24 to remove temporarily the overhead on the Highwood lead so a crane could unload the newly delivered locomotive 150. Marty Wisniewski, James Van Bokkelen, and I, handled the wire drop. A little storm delay (for our contractor, not us) pushed the pole replacement project off to August 24 and 25. In a two-day blitz, Private Power placed five poles, transferring the wires on one pair. The steel poles on the lower campus were stood up on their bases; high voltage was moved to new poles off of the line poles; and many anchors were planted with guy wires installed or re-installed.

Since then the bracket arms on the remaining poles have been moved, allowing a speed restriction that had been in place for a long time to be lifted. Other minor repairs in various places have been done as required, requiring us to sift through stored overhead components, looking for the elusive parts we needed to erect the steel poles and bracket arms.

We also reviewed our work fleet. Our main line car, number 4 from the Claremont (NH) Railway, is around 110 years old, in generally good condition with a nice platform. It is very tight inside, requiring an agile crew. Number 4's work platform swings out about four feet over the edge of the car and can be raised to about 18 feet. As a nod to safety, it is now equipped with a clip for fall harnesses. The other line cars in the collection are out of service and are not good candidates for rebuilding as work vehicles. The museum also owns a bunch of line trucks from Boston in various states. The most recently used platform truck is showing its age, and does not have hi-rail capability (which would allow it to operate on rails). None of the other trucks could be brought back into service quickly with the resources available.

So we went shopping. It turns out that hi-rail trucks are hard to find, and hi-rail bucket trucks even harder (my daughter called it a "unicorn"), and are often in very rough shape. Working with a dealer in Tennessee, we eventually settled on an ex-Norfolk Southern signal department bucket truck. A generous member donated the purchase cost. We were able to arrange shipping to avoid COVID travel issues. The truck arrived on September 24. It looks like the truck is in even better condition than we had hoped. With two vehicles, one of which has long reach and both on- and off-rail capability, we should be able to attack projects we could only think about before. There are some places the truck can't go due to curves, so we're not giving up No. 4 yet!

This fall's projects have included:

- Completing the main line transfers
- Installing anchor guys and span wires on the new steel poles
- Planning for wire placement over the new switches on the Shop lead
- Figuring out how to tie off the wire in Fairview yard to the new barn front

The last is an example of how we have to make design and installation decisions by adapting parts not designed for trolley wire installation. The hangers used to attach the wires to the building come from the plumbing industry.

For next year we hope to:

- Complete the rebuilding of the Fairview yard
- Add "sidewalk arms" and anchor guys to the Visitors Center loop poles
- Move all attachments from the nearby wooden ones onto the steel poles
- Rework backbone and span wires around the Visitors Center loop
- Relocate poles near Highwood yard

With a few changes to the Shop yard and the Visitors Center loop, the overhead wire should be high enough everywhere to allow the movement of double-deck trams.

The Track Department has been generous with help, as both James van Bokkelen and Charlie Publicover have spent time on the line car. Chuck Griffith has helped with the Pettibone tractor. Andre Fenlason has operated the platform crank. Special thanks to Charlie Publicover for helping to transport Private Power's digger out onto the main line without incident, and to Dan Vardaro and Roger Tobin, who spent some long afternoons in the power station controlling power to keep us safe.

The Overhead Line Department is happy to accept volunteers. If you're not afraid of heights, can climb the ladder on the side of the line car, and don't weigh too much for the bucket lift, we would be glad to have you!



## Seashore Collection Spotlight: **CHICAGO SURFACE LINES CAR 225**

By Dann Chamberlin

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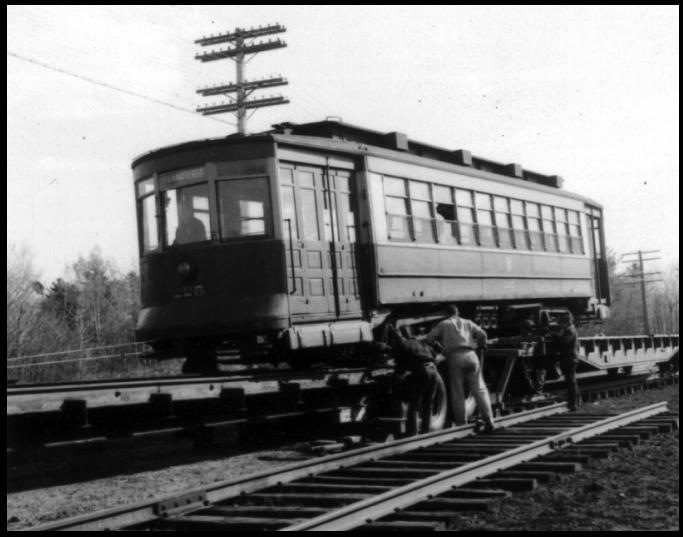
**O**ne of the many unique gems in the Museum's collection is our representative from the city that at one time had the largest streetcar system in the world. Chicago Surface Lines Car 225 was built in 1908 by none other than the world famous Pullman Company, whose extensive factory on the far south site of Chicago is now under development as a National Historic Site. It was one of a six hundred car order, which was supplemented a few years later by another order for an additional three hundred nearly identical cars. When new, these cars were "Pullman Green"(of course) with gold striping and brick red roofs. Beginning about 1921, the cars were repainted in the red and ivory colors they wore to the end of their days.

This nine hundred car fleet came to be recognized as the iconic Chicago streetcar, and proved to be as durable as they were distinctive. While other less ruggedly constructed cars came and went, the "Big Pullmans" soldiered on. The Chicago Transit Authority decided in 1953 to phase out all streetcar service, and our Car 225 and its mates made their last runs in May of 1954. This gives our Car 225 a remarkable service life of 46 years, a figure exceeded by only a very few fleets of cars in the history of the electric railway industry. Car 225 is one of only three survivors of this once-huge fleet.

Over the years, they picked up a variety of nicknames - "Big Pullmans," "Big Red Cars," "Old Pullmans" and "Red Rockets" being among them. Growing up in the western Chicago suburb of Glen Ellyn as I did, we called them the "Red Rattlers." The late George Burdick, an active Seashore member for many years also lived in Glen Ellyn for a time and likewise recalled them as "Red Rattlers." Our Car 225 is referred to as the "Red Rattler" in a 1959 Dispatch timeline covering Seashore's first 20 years. However, folks at museums in Illinois claim to have never heard of that nickname. According to them, they were "Red Rockets," which never made much sense to me inasmuch as they are not fast cars despite their 4 motors.

Car 225 came to Seashore in 1957; it was said to be a priority project of one of the museum's founders, Ted Santarelli, who worked for the Chicago Surface Lines for a year in the early 1940s. We were charged the full \$892 scrap value by the Chicago Transit Authority, plus \$250 to load the car onto a flatcar in Chicago. Bringing it to Kennebunk siding was another \$1500, for a total of \$2642. This made it our most expensive car acquisition up to that time. We had also reserved a wooden Chicago El car for preservation, but had to release it because the funds to bring it east were not forthcoming. However, no other museum outside of Illinois preserved a "Red Rattler," so our achievement in getting Car 225 all the way to Maine was and is noteworthy.

It was George Burdick who steered me to Car 225 when I was looking for a "painting project" in the mid-1970s. My Dad worked in Chicago, so I saw many of the Pullmans on trips to the Windy City, and rode them a few times as well. Some years after coming to Seashore, the car had received a paint job on its red surfaces. My job was to remove multiple layers of ivory paint on the posts and sills and repaint them and the brown window sash. I set to work with enthusiasm - little suspecting what I was getting myself in to!



From top to bottom: The "Red Pullmans" had dominated Chicago's streets for nearly half a century when the museum's No. 225 was captured on State Street on October 21, 1956. (D. Idarius photo).

Seashore's 225 shown just after its arrival on a flat car at the B&M station in Kennebunk in 1958. Seashore members carefully "watch wheels" as the car is transferred from the flat car via temporary rails onto the museum's Highway Monster trailer for the short trip to Kennebunkport. Photographer unknown

Sister car 144 is shown in Chicago at an "L" station (short for Elevated) where passengers could transfer between streetcars and rapid transit cars. Car 144 is preserved at the Illinois Railway Museum. Foster Palmer photo

The window guards had been taken off and stored due to their many coats of cracking and peeling paint, so a logical next step was taking them to one of those furniture "dip and strip" places to get rid of all the old paint. Then they had to be repaired as needed, wire-brushed, primed and painted - all 22 of them.

In the meantime, the Museum had hired a temporary employee to begin the stripping and refinishing of all the beautiful cherry and maple wood in the interior. By the time his period of employment came to an end, he had completed perhaps 20% of the interior, as well as replacing the old and deteriorated wiring in the lighting circuits. He had taken all the wood trim and other interior fittings off, and left them that way. I was sorely tempted to walk away at that point, but didn't want Car 225 to join several others in our storage barns that had work done on them which was left incomplete.

So the early and mid-1980s were spent stripping and refinishing the interior and the vestibules. Over the years, the interior had received so many coats of varnish that the varnish cracked and crawled and, when combined with Chicago coal soot, left the wood almost black. How satisfying it was to once again see the natural beauty of the wood! No attempt was made to bring it back to like-new condition, and more than one operator has remarked that the car is a favorite because of the "patina" - the wood has obviously received TLC but still looks "age appropriate" for a car dating back to 1908. (Neither of the other two preserved cars - both at the Illinois Railway Museum - has a refinished interior.)

One could say the "real fun" began in 1988 when the car was brought into the shop for rebuilding of the end platforms. Donald Curry was in charge of this, and so much rust was knocked off the steelwork supporting both ends that a five gallon pail was filled. This was displayed on the visitors gallery for several years, as a dramatic example of the true meaning of the term "rust bucket."

Fred Maloney pointed out to me that the car needed new roof canvas. When I said that I had no idea how to go about re-canvassing a streetcar roof, Fred exclaimed "Oh, it's easy. We'll teach you!" What he didn't tell me was that it is hundreds of hours of work. So parts of the next five summers were spent on Car 225's roof, where I got lots of valuable help from my son Jeff, who was in high school by then.

In the meantime, the wheels were sent out for re-profiling, new pinion gears were made, the bearings were re-babbitted, the controllers were overhauled and the main motor wiring was replaced. I prepped the red surfaces for re-painting and in 1995 the late Dick Lane sprayed them all in the correct "Rangoon Red" - a 1971 Ford truck color! That same year, the car was featured on an FX TV show.

The motors were sent out for cleaning, dipping and baking, and things came together to completion in 1998. In August the car was the star of a "Completion Party" for the sponsor's friends and Seashorians who had contributed in so many ways to the car's restoration. In the fall the car was dedicated on Members Day - in a day-long pouring rainstorm. All that new roof canvas was put to the test, with just one small leak noted.

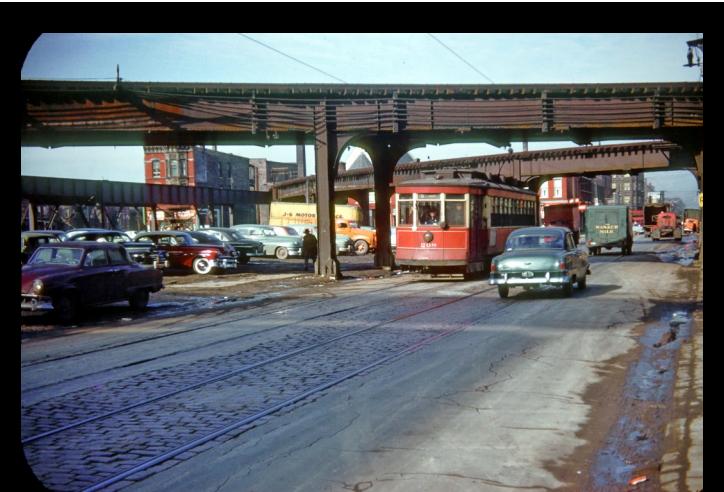
The car ran in regular service for the next few years, and if I was up in the shop working on the CA&E car, I would head to Morrison Hill when I saw Car 225 leave the Visitors Center, and hop aboard for the ride. I'd explain to the riders at Talbott Park what had been done to the car, and how virtually every car they would ride or see in an exhibit barn was restored by a great deal of hard work on the part of both paid employees and volunteers. To see the car operate and being enjoyed by our visitors was very satisfying to say the least.

However, problems with the four motors began to crop up after a few years. When Car 225's motors were cleaned, dipped and baked, we had not yet connected with AC Electric. Hindsight being 20/20, it would have been best had they gone there in the first place, but we didn't know of AC Electric and, in any event, funding was not available for more than the work that was done at that time.

Two of the motors spent time at Bruce Thain's shop in Connecticut, for work on armature shafts and bearings. The other two motors went for a thorough overhaul at AC Electric. Then several years after that, one of the motors that did not get the "AC Treatment" failed when the car was taken out for a main line run contrary to shop instructions. Fortunately, there are identical spare motors in some of the trucks that were obtained for the Narcissus, and over the next several years one of those motors and the other motor from Car 225 that has not been at AC, will be sent there for overhaul. Then our "Red Rattler" should be reliable for many years to come.

Oh yes - that "Red Rattler" nickname came in part from loose window glass in the vestibules. That was dealt with by pressing the glass inward and putting brown caulk between the glass and the frame. However, rest assured that this did not make our "Red Rattler" a quiet car. It continues to make all those good noises one expects from a streetcar built before World War I.

Time marches on, and after 25 years some of that beautiful "Rangoon Red" paint has faded and chipped. On the financial end of things, the car has its own Endowment Fund, invested as with the Museum's Endowment, meaning that donations stay in the 225 Fund forever and the income from those donations helps to pay for repairs to the car. Needless to say, donations to the Car 225 Endowment Fund 306 are always welcome!



Sister Pullman 208 running below curving "L" tracks amidst an array of 1950s automobiles. Foster Palmer photo

## THE SEASON OF GIVING (AND RECEIVING!)

We know your decision to support Seashore Trolley Museum comes from the heart because you believe our mission matters. But there are also many ways you can benefit from your generosity. Consider how you can get more from your year-end giving.

**Make a cash gift.** As part of the Coronavirus Aid, Relief, and Economic Security (CARES) Act passed earlier this year, cash contributions to qualified nonprofits such as Seashore Trolley Museum can be deducted up to 100% of your adjusted gross income for the 2020 calendar year. The Act also expanded charitable giving incentives and allows taxpayers who take the standard deduction to make up to \$300 of charitable contributions to qualified nonprofits this year. To qualify, you must **make your gift before December 31**.

**Contribute to your donor advised fund.** If you have a donor advised fund, you can **contribute to it before December 31** and enjoy tax savings in that amount when you itemize on your tax return in the spring. When you're ready, you recommend distributions be made to support the organizations you care about most.

**Questions?** We are always happy to help you find the best gift option to meet your charitable goals and maximize your tax benefit. Contact our Executive Director Katie Orlando at (207) 967-2800 x101 or [director@trolleymuseum.org](mailto:director@trolleymuseum.org) if there is any way we can assist you. If you have already included us in your estate plan, we thank you!



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# From the **TOWN HOUSE SHOP**

By Randy Leclair

## Restoration work:

Portland-Lewiston Interurban 14 Narcissus – The first side-sill beam has been mortised and is in the process of getting other various holes drilled to accommodate assembly. Master Woodworker Seth Reed is pictured sanding the left sill, below. (Fund 816)

Lexington & Boston 41 – Wiring continues in the car, with most roof and cab wiring in place, including choke coil, lightning arrester, and fuse block getting refurbished for installation. One of several truck parts are being cast for the car at Mystic Valley Foundry and should be installed by the time you read this. We are making patterns for other parts as well as we gain strength in our 3D modeling. (Fund 754)

Nagasaki 134 – Work continued on rebuilding the vestibules on both ends of the car. (Fund 773)

Providence and Worcester 150 – In late July, Seashore took delivery of Providence & Worcester 150, a 25-ton General Electric “critter” built in 1945. We replaced its four 8V starting batteries (which starts the diesel engine by “motoring” the traction generator), changed several filters, reoriented the chain oilers, topped off essential fluids, and started getting various lights working. We also rewound a failed string band on the generator. While the generator was being serviced, repairs were made to one of the brush holders, which had a broken spring. We still have to do remedial repairs on its fuel system and it will need winterizing soon. (Fund 821)

Chicago Aurora & Elgin 434 – One of the first major projects locomotive 150 was involved in was the installation of the 434’s air compressor just outside of Highwood barn. The locomotive was able to position the car precisely for the waiting Pettibone Speedswing to maneuver the tested and rebuilt compressor under the car. Although “434-C” has not yet been tested with the reinstalled compressor, it is hoped that the car can be made operable in the near future. (Fund 617)



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Boston & Maine Railroad 500 – Work began in earnest to get the car in running condition. The car was moved by trailer from its repose behind Shop 1 and returned to rail in the shop yard. The Waukesha-replacement Dodge “Slant 6” power plant now runs well, the shifters work, the charging system charges the battery, and the seats are in the car. Wiring is getting sorted and most of the gauges now work. We still need to install an exhaust system, source and install a gas tank (my 1962-vintage Mercury outboard motor gas tank currently fills this role), and the frame, roof, and sheathing all need refurbishment. Finally, the vacuum brake system needs to be reassembled and tested. (Fund 539)

Lehigh Valley Transit 1030 – The 1030 is in the shop, receiving an initial inspection to determine the depth of restoration needed to return the car to operation. This car is part of our five-year restoration plans. (Fund 732)

Connecticut Company 1160 – Shop employees and volunteers tackled re-canvassing the top roof of the 1160. New tack strips were mortised and installed, and the canvas stretched and tacked in place. The canvas now has been completely stained and the roof cleats and trolley boards are ready to be reinstalled. Other work included fixing headlight mounts and reshaping a newly-babbitted bearing (borrowed by 303 earlier this season). (Fund 640)

Toronto 2890 – Bearings on the #1 truck were rebabbitted and are being shaped for installation. Work continues on its door mechanism wiring. (Fund 865)

Bay State 4175 – We reassembled the first truck and are working on painting and refurbishing the second truck. We found four journal bearings had serious issues with babbitt delamination; these will need to be addressed before the car can enter service. Also, several wear plates in the second truck will need refurbishment. (Fund 528)

#### Maintenance:

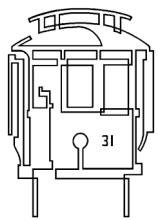
Throughout the second half of the summer, shop activities continued to support operations, including servicing Connecticut 303, Eastern Mass 4387, and Boston Elevated 5821, for usage during Pumpkin Patch Trolley. These three cars, along with a few appearances from DC Transit 1304, provided all of the passenger service for what would turn out to be the museum's most successful Pumpkin Patch to date.

Although it was hoped Twin Cities 1267 would provide service during the event, inspection revealed badly-worn components in the car's trucks and braking system. Similar issues with another mainstay of the fleet, Dallas 434, resulted in its being sidelined for the event as well (although the car was able to make a brief appearance at Member's Day). Plans are currently being formulated for the repair of both of these popular cars. (Fund 201)



From top to bottom: Asst. Restoration Shop Director Brian Tenaglia works in the pit on Wheeling, WV 639; Restoration Technician builds controllers for Lexington & Boston 41; Former 60+ year employee and current Volunteer Donald Curry and Restoration Technician David Rogers build resister grids for Bay State 4175.

*Left: It is tedious work getting the sills ready for the Narcissus; our Master Woodworker Seth Reed has been doing great work! It took the Museum over 5 years to track down the two Southern yellow pine sills we needed for the project. Both were milled from one vintage timber; they are 12"x 12" x 39' and came from an 1870s brass foundry in Connecticut. The work on the left sill is finished and fitted in its steel channel, and work on the pictured right sill is well underway.*



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