

# **MINNESOTA STREETCAR MUSEUM**

## **TRANSPORTATION DEPARTMENT**

### Sequence of Operation – Excelsior Streetcar Line Duluth Street Railway No. 78

Revised – May 1, 2015

#### **General**

Forman must adhere to the Excelsior Streetcar Line Foreman's checklist for general procedures to prepare car No. 78 at the beginning of the day's operations and for putting the car away at the end of the day's operations.

At the beginning of each operating season the Passenger Traffic Manager publishes instructions and information regarding general passenger operations in the annual General Procedures Memorandum.

This sequence of operations will assume that:

(1) a typical ESL round trip starts at the Water Street Platform, travels east to the Old Excelsior Boulevard platform and then returns to the Water Street Platform with a 5-10 minute stop at the ESL car barn for a short car barn tour; and,

(2) in the Yard the Foreman will control the operation of the car and the operator will assist as requested. Once the car is on the main line the Foreman and Operator will then assume the Motorman and Conductor positions as directed by the shift Foreman.

On streetcar No. 78 the number 1 end is the front of the car. This number is painted on the window frame above the operators' position. In addition the black disconnect box on the ceiling in the vestibule is on the number one end.

## At the Beginning of the Day's Operations

This sequence begins after the Foreman has brought the car out of the barn and performed all the start of shift actions as listed in the ESL Foreman's checklist. The crew is present and ready to start day's operation. The streetcar is ready to leave the yard to approach the mainline switch.

### Move from Car barn to Water Street Platform

Location	Foreman's Actions	Operator's Actions
<b>From car barn into Yard and then to main line switch</b>	<ul style="list-style-type: none"> <li>• Move car slowly through yard switches making sure trolley wheel properly tracks through overhead wire frogs</li> <li>• Check points of <b>all switches</b> to ensure they are set for the route the car is supposed to take</li> <li>• After car has entered onto the main line and stopped, align the switch for main line running and lock the switch</li> <li>• Move trolley pole from car barn lead wire to main line wire</li> </ul>	<ul style="list-style-type: none"> <li>• Assist Foreman as requested</li> <li>• Observe trolley wheel as it passes through overhead wire frogs</li> </ul>
<b>From mainline switch to Old Excelsior Blvd. (At Start of Day's operation)</b>	<ul style="list-style-type: none"> <li>• Move trolley pole to front of car facing Water street</li> <li>• Put Controller in neutral</li> <li>• Put air brake transfer lever in up position</li> <li>• Give key to Conductor</li> <li>• Answer Conductor's request to proceed using the bell signal, providing it is safe to do so (3 Bells)</li> </ul>	<ul style="list-style-type: none"> <li>• Put air brake transfer lever in down position</li> <li>• Put key on controller</li> <li>• Request permission to move car (3 bells)</li> <li>• When permission is received move controller key to forward position</li> <li>• Ring foot gong</li> <li>• Release brake and move controller to first notch</li> <li>• Proceed to old Excelsior Blvd.</li> </ul>
<b>Arrival at Old Excelsior Blvd</b>	<ul style="list-style-type: none"> <li>• Assist Conductor to put out sandwich board and step stool.</li> </ul>	<ul style="list-style-type: none"> <li>• Put controller reverser key in neutral position</li> <li>• Move Trolley Pole to Rear of car facing Old Excelsior Blvd.</li> <li>• Put out Sandwich board on sidewalk</li> <li>• Put step stool out in loading area</li> </ul>

## Move from Car barn to Water Street Platform – Continued

<b>Location</b>	<b>Motorman' Actions</b>	<b>Conductor's Actions</b>
<b>Depart Old Excelsior Blvd</b>	<ul style="list-style-type: none"> <li>• Put air brake transfer lever in down position</li> <li>• Request permission to move car.</li> <li>• When permission is received move controller key to forward position</li> <li>• Release brake and move controller to first notch</li> <li>• Before reaching boats lined up just before Morse Avenue grade crossing, stop car to be sure there is adequate clearance for car to pass</li> <li>• Cross Morse Avenue following sequence of operations</li> </ul>	<ul style="list-style-type: none"> <li>• Close gate.</li> <li>• Give Key to Motorman</li> <li>• When motorman requests permission to move car put air brake transfer lever in up position</li> <li>• If it is clear to move car give Motorman permission. (2 bells)</li> </ul>
<b>Arrival at Water Street</b>	<ul style="list-style-type: none"> <li>• Stop car so front gate is centered on cement platform</li> <li>• Move controller key to neutral position</li> <li>• Open front gate</li> <li>• Do not switch controls until Conductor asks for permission to move car</li> </ul>	<ul style="list-style-type: none"> <li>• After car is stopped at Water Street Platform move Trolley Pole to front of car facing Water Street</li> <li>• Supervise loading of passengers and collect fares and update trip sheet</li> </ul>

## Regular Round-Trip Operations

<b>Location</b>	<b>Motorman's Actions</b>	<b>Conductor's Actions</b>
<b>Depart Water Street Platform</b>	<ul style="list-style-type: none"> <li>• When conductor signals for permission to start eastbound trip, move the air brake transfer lever to up position</li> <li>• Check to make sure the trolley pole is in correct trailing position</li> <li>• Check to make sure it is safe to move the car</li> <li>• Signal the Conductor that car is ready to proceed (3 Bells)</li> <li>• Make announcement to passengers to remain seated while the streetcar is in motion and to keep body parts inside the streetcar</li> </ul>	<ul style="list-style-type: none"> <li>• When passengers are loaded and seated and gates are securely closed, move air brake transfer lever to down position</li> <li>• Signal the Motorman for permission to begin the trip to Old Excelsior Blvd. (3 Bells)</li> <li>• When clearance from Motorman is received move controller key to the forward position</li> <li>• Release the air brakes</li> <li>• Move controller to first notch, one notch at a time, 2 to 3 seconds apart and continue to notch-up until 5<sup>th</sup> notch is reached</li> </ul>
<b>Approaching Lyman Lumber Company Office Building and bike path crossing</b>	<ul style="list-style-type: none"> <li>• Watch right side bike path for bicyclist and pedestrians as car approaches bike path crossing</li> <li>• Be prepared to signal Conductor to stop if dangerous situation occurs</li> </ul>	<ul style="list-style-type: none"> <li>• Shut off power when car passes yellow painted tie.</li> <li>• Watch for bicyclists and joggers/pedestrians as car approaches bike path crossing</li> </ul>
<b>Lyman Lumber Company Office Building Area</b>	<ul style="list-style-type: none"> <li>• Be watchful for bikers and pedestrians</li> </ul>	<ul style="list-style-type: none"> <li>• Coast through this area at speed not to exceed 5 MPH</li> <li>• Watch for and be prepared to stop for pedestrians/bicyclists</li> </ul>
<b>Morse Avenue</b>	<ul style="list-style-type: none"> <li>• Make sure it is safe to proceed</li> <li>• When conductor signals for permission to proceed, signal it is OK to proceed (3 Bells)</li> </ul>	<ul style="list-style-type: none"> <li>• Make complete stop at Morse Avenue</li> <li>• When traffic on Morse Ave. is clear, request clearance from Motorman to proceed (3 bells)</li> <li>• Release brake and move controller to first notch and then up to 5th notch in usual manner</li> </ul>
<b>Approaching Division Street Bridge</b>	<ul style="list-style-type: none"> <li>• Observe passengers to ensure they are not doing anything to jeopardize their safety</li> </ul>	<ul style="list-style-type: none"> <li>• Cut power when car passes yellow tie</li> <li>• Coast downhill to car barn switch</li> <li>• Apply brakes to slow car to 5 MPH as it passes through the main line switch</li> </ul>

## Regular Round-Trip Operations – Continued

Location	Motorman's Actions	Conductor's Actions
<b>Passed carbarn switch</b>	<ul style="list-style-type: none"> <li>Observe passengers to insure they are not doing anything to jeopardize their safety</li> </ul>	<ul style="list-style-type: none"> <li>Turn power on to 1<sup>st</sup> notch after car clears mainline switch</li> <li>As you approach carbarn prepare to stop at the platform by the west end of carbarn.</li> </ul>
<b>Carbarn</b>	<ul style="list-style-type: none"> <li>Announce carbarn tour</li> <li>Assist with unloading and loading of passengers, at carbarn.</li> </ul>	<ul style="list-style-type: none"> <li>Shut off power and coast to stop at carbarn platform</li> <li>Center the gate on the platform.</li> <li>Move controller key to neutral position and remove key from controller</li> <li>Conduct car barn tour</li> </ul>
<b>Departing Carbarn</b>	<ul style="list-style-type: none"> <li>Check to make sure passengers are seated and it is clear around the outside of the car to proceed</li> <li>When Conductor asks for permission to proceed from carbarn , signal with (3 Bells)</li> </ul>	<ul style="list-style-type: none"> <li>Signal the Motorman for permission to proceed (3 Bells)</li> <li>When permission to proceed has been received, move controller key to forward position, release the brake and move controller to 1<sup>st</sup> notch</li> </ul>
<b>Passing under old TCRT Bridge</b>	<ul style="list-style-type: none"> <li>Observe passengers to insure they are not doing anything to jeopardize their safety</li> </ul>	<ul style="list-style-type: none"> <li>Cut power at yellow painted tie</li> <li>Coast up to Old Excelsior Blvd. Platform</li> </ul>
<b>Arrival at Old Excelsior Blvd. Platform</b>	<ul style="list-style-type: none"> <li>Give <u>very short</u> end of line talk</li> <li><b>NOTE:</b> Most information to passengers will be given during the carbarn tour. Make this end-of-line talk no longer than it takes for Conductor to swing trolley pole around</li> </ul>	<ul style="list-style-type: none"> <li>Stop car at loading platform</li> <li>Supervise loading and unloading of passengers</li> <li>Collect fares</li> <li>Move trolley pole to other end of car</li> <li>Give controller key to Motorman</li> </ul>
<b>Depart from Old Excelsior Blvd Platform</b>	<ul style="list-style-type: none"> <li>Move air brake transfer lever to down position</li> <li>Request permission to proceed</li> <li>When permission to proceed is received, move controller key to forward position</li> <li>Release air brake and move controller to first notch</li> <li>Move controller to notch 5 one notch at a time 2 to 3 seconds apart</li> </ul>	<ul style="list-style-type: none"> <li>When Motorman signals for permission to proceed, move air brake transfer lever to up position.</li> <li>Make sure trolley pole is in correct position and all passengers are seated</li> <li>Answer Motorman's bell signal to proceed (2 Bells)</li> <li>Observe passengers to insure they are not doing anything to jeopardize their safety</li> </ul>

## Regular Round-Trip Operations – Continued

<b>Location</b>	<b>Motorman's Actions</b>	<b>Conductor's Actions</b>
<b>Approach ESL Car barn</b>	<ul style="list-style-type: none"> <li>• Turn power off when car passes yellow painted tie just before the old TCRT Bridge</li> <li>• Proceed slowly past car barn, ring foot gong when approaching west end of car barn</li> <li>• Cut power when front of car passes parking area crossing in at car barn</li> <li>• Coast through switch at speed not to exceed 5 MPH</li> <li>• Move controller to first notch and continue to move one notch at a time 2 to 3 seconds apart to 5<sup>th</sup> notch</li> </ul>	<ul style="list-style-type: none"> <li>• Continue to observe passengers</li> </ul>
<b>Morse Avenue</b>	<ul style="list-style-type: none"> <li>• Cut power approximately 3/4ths of way from switch to Morse Avenue (at yellow tie)</li> <li>• Make complete stop at Morse Avenue.</li> <li>• When it is clear to proceed signal conductor for permission to proceed (2 bells)</li> <li>• When permission from conductor is received release brakes and move controller to first notch.</li> </ul>	<ul style="list-style-type: none"> <li>• Check for bikers or pedestrians on right side and auto traffic on left side of car before answering Motorman's signal to proceed (2 Bells)</li> </ul>
<b>Lyman Lumber Company Office Building area and bike path crossing</b>	<ul style="list-style-type: none"> <li>• Leave controller in first notch</li> <li>• Be watchful for bikers and pedestrians</li> <li>• After clearing path cross over Move the controller up one notch at a time 2 to 3 seconds apart</li> </ul>	<ul style="list-style-type: none"> <li>• Watch for and be prepared to signal Motorman to stop if dangerous situation might occur out of Motorman's field of vision to the right</li> </ul>
<b>Approaching Water Street Platform</b>	<ul style="list-style-type: none"> <li>• Shut off power when car passes yellow painted tie</li> <li>• Ring foot gong as car starts to pass the old M&amp;StL Depot</li> </ul>	<ul style="list-style-type: none"> <li>• Watch for pedestrians on or to close to the track.</li> </ul>

## Regular Round-Trip Operations – Continued

Location	Motorman's Actions	Conductor's Actions
Water Street Platform	<ul style="list-style-type: none"> <li>Approach platform at dead slow speed</li> <li>Come to full stop with front gate centered on cement platform</li> <li>After car comes to complete stop remove controller reverse key</li> <li>Open Front gate</li> <li>Move trolley pole to other end of car</li> <li>Give controller key to Conductor</li> </ul>	<ul style="list-style-type: none"> <li>Move to open gate at front of the car</li> <li>Supervise loading and unloading of passengers from the ground</li> <li>Collect fares of new passengers</li> <li>Update trip sheet</li> </ul>

### At the End of the Day's Operations

This sequence begins after the day's operations are finished. The Operator on the No. 2 end of No. 78 will operate the car from the Water Street platform and stop the car approximately 10 feet before the mainline switch. The crew is present and both are ready to move the car in the yard and the carbarn.

### Move from Water Street platform to carbarn

Location	Foreman's Actions	Operator's Actions
Return to Car Barn	<ul style="list-style-type: none"> <li>Follow Normal sequence of operation</li> </ul>	<ul style="list-style-type: none"> <li>Follow normal sequence of operation to mainline switch</li> <li>Stop before yard switch</li> </ul>
Yard	<ul style="list-style-type: none"> <li>Change yard switch from mainline to yard. Lock the switch in this position.</li> <li>Move trolley pole to Yard wire and move car into yard and stop where rails are painted yellow</li> <li>Swing trolley pole around 180 degrees so it points towards the carbarn.</li> <li>Open carbarn doors. Move car into barn and close doors.</li> <li>Shut overhead power off and then remove trolley pole from wire.</li> <li>Follow Foreman's checklist.</li> </ul>	<ul style="list-style-type: none"> <li>Assist Foreman as requested</li> <li>Observe trolley wheel as it passes through overhead wire frogs</li> </ul>