

MINNESOTA STREETCAR MUSEUM

Transportation Department

Sequence of Operation – Excelsior Streetcar Line Duluth Street Railway No. 78 Revised – March 9, 2022

General

Foreman 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. The Foreman's checklist is posted in the ESL car barn on the Operations Bulletin Board by the N.W. entry door.

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.

Foremen should arrive at the car barn at least 30 minutes prior to the start of scheduled operations to pump up the air on the streetcar, prepare trip sheets, setup POS, etc.

This sequence of operations will assume that:

- In the Yard and on the 1st run of the day from the car barn to Old Excelsior Boulevard and then West to Water Street the Foreman will operate the car and the Operator(s) will assist as needed. Once the car is in service on the mainline the Foreman and Operator(s) will assume the Motorman and Conductor positions as directed by the shift Foreman.
- A typical ESL round trip lasts 25 minutes. It starts at the Water Street Platform, travels east to Old Excelsior Boulevard, returns west stopping at the car barn for a 5–10-minute car barn tour before returning to the Water Street Platform.

On streetcar No. 78 the number 1 end is the front of the car, the number 2 end is the rear. The numbers are painted on the window frame above the operators' position in the vestibules. In addition, the black disconnect box on the ceiling in the vestibule is on the number 1 end. An easier way to remember this is the number 1 end (front) faces east towards Old Excelsior Boulevard and the number 2 end (rear) faces west towards Water Street. In comparison both No. 265 and Winona 10 are front facing towards Water Street.

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.

Start of day move from Car barn to Water Street Platform – DSR No. 78

Location	Foreman's Actions	Operator's Actions
<p>From front of carbarn through the Yard switches and on to the main line switch</p>	<ul style="list-style-type: none"> • Check points of all switches to ensure they are set for the route the car is supposed to take. • After ringing foot gong move car slowly through yard switches making sure trolley wheel properly tracks through overhead wire frogs. • After car has entered onto the mainline and stopped, put reverser handle in the neutral position. • Align the switch for main line running and lock the switch. • Rotate trolley pole and place it on mainline wire for movement to Old Excelsior Boulevard. 	<ul style="list-style-type: none"> • Assist Foreman as requested. • Observe trolley wheel as it passes through overhead wire frogs. • Inform Foreman to stop if the trolley wheel follows wrong wire.
<p>At start of the days operation the Foreman operates the car from the mainline switch to Old Excelsior Boulevard and back to Water Street to check the rails and the overhead wire.</p>	<ul style="list-style-type: none"> • When ready to depart, put air brake transfer lever in down position. • Put reverser handle on controller. • Request permission to move car (3 rings). • When permission is received, move reverser handle to forward position. • Ring foot gong. • Release air brake and move controller to first notch. • After car attains a speed of 3-5mph, shut off power and apply a small amount of air to conduct rolling brake test. • If speed of car slows as expected ring foot gong, release air and proceed to Old Excelsior Blvd., complying with all line targets. • Ring foot gong passing carbarn and under bridge. 	<ul style="list-style-type: none"> • Put air brake transfer lever in the up position. • Answer Foreman's request to proceed using the bell signal when it is safe to do so (3 rings).

Start of day move from Car barn to Water Street Platform – DSR No. 78 (Cont.)

Location	Foreman's Actions	Operator's Actions
Arrival at Old Excelsior Blvd	<ul style="list-style-type: none"> Shut power off at yellow target. Coast to a stop at red target Put reverser handle in neutral position. Rotate trolley pole for trip to Water Street platform. Move to car end #2 for trip to Water Street 	<ul style="list-style-type: none"> Assist Foreman in rotation of trolley pole. Move to car end #1 for trip to Water Street.
Depart Old Excelsior Blvd	<ul style="list-style-type: none"> Close gate and put air brake transfer lever in down position. Request permission to move car. When permission is granted, ring foot gong, move reverser handle to forward position. Release brake and move controller to first notch. After car attains a speed of 3-5mph, shut off power and apply a small amount of air to conduct rolling brake test. If speed of car slows as expected ring foot gong, release air and proceed to Water Street, obeying all targets. Cross Morse Avenue following the regular round trip Sequence of Operations. 	<ul style="list-style-type: none"> When motorman requests permission to move car put air brake transfer lever in up position. If it is clear and safe to move car give Motorman permission to proceed (2 rings). Follow regular round trip Sequence of Operations on the trip to the Water Street platform.
Arrival at Water Street	<ul style="list-style-type: none"> Cut power at yellow target. Ring foot gong approaching the ELMHS Museum. Speed not to exceed 3 mph, ring foot gong approaching library crossing and Water Street Platform. Stop car so forward gate is centered on cement platform. Remove reverser handle and take it with you. Open forward gate for loading. Set up ticket booth signs, POS and place orange cone at front of car. Position front and back steps for passenger loading and unloading. 	<ul style="list-style-type: none"> After car is stopped at Water Street Platform rotate the trolley pole for the trip to Old Excelsior Blvd. Assist Foreman in the setup up for the first run. Interact with waiting passengers.

Regular Round-Trip Operations – DSR No. 78

Location	Motorman's Actions	Conductor's Actions
Depart Water Street Platform	<ul style="list-style-type: none"> Board passengers from forward gate at the Water Street platform. Check to make sure the trolley pole is in correct trailing position. When conductor signals for permission to start eastbound trip, move the air brake transfer lever to the up position. Check to make sure it is safe to move the car. Signal the Conductor that car is ready to proceed (3 Rings). Make announcement to passengers to remain seated while the streetcar is in motion and to keep body parts inside the streetcar. 	<ul style="list-style-type: none"> When passengers are loaded and seated and gates are securely closed, move air brake transfer lever to down position. Signal the Motorman for permission to begin the trip to Old Excelsior Blvd. (3 Rings). When clearance from Motorman is received ring foot gong, move reverser handle to the forward position. Release the air brakes and move controller to first notch. Ring foot gong passing library crossing and ELMHS Museum. After car attains a speed of 3-5 mph, shut off power and apply a small amount of air to conduct rolling brake test. If speed of car slows as expected ring foot gong, release air and proceed toward Morse Ave., complying with this SoO and other rules.
Approaching Lyman Lumber Company Office Building and bike path crossing	<ul style="list-style-type: none"> Watch the trail on the right-side bike path for bicyclist and pedestrians as No. 78 approaches bike path crossing. Be prepared to signal Conductor to stop if a dangerous situation occurs. 	<ul style="list-style-type: none"> Shut off power when car passes yellow target. Ring foot gong approaching trail crossing. Watch for bicyclists and joggers/pedestrians as No. 78 approaches the trail crossing.
Lyman Lumber Company Office Building Area SAFETY ZONE	<ul style="list-style-type: none"> Be watchful for bikers and pedestrians 	<ul style="list-style-type: none"> Coast through this area at speed not to exceed 5 MPH Ring foot gong passing the Lyman parking lot and building. Watch for and be prepared to stop for pedestrians/bicyclists
Morse Avenue	<ul style="list-style-type: none"> Make sure it is safe to proceed. When conductor requests permission to proceed, reply with 3 Rings if it is safe to proceed. 	<ul style="list-style-type: none"> Make full stop at Morse Avenue. Request permission from Motorman to proceed (3 rings). When permission is granted, and traffic on Morse Ave is clear, ring foot gong, release brakes and proceed east obeying targets.

Regular Round-Trip Operations – DSR No. 78 (Continued)

Location	Motorman's Actions	Conductor's Actions
Approaching mainline switch and ESL carbarn	<ul style="list-style-type: none"> Observe passengers to insure they are not doing anything to jeopardize their safety. 	<ul style="list-style-type: none"> Shut off power at yellow target in advance of mainline switch and slow car to 5mph within 5 feet of mainline switch. Ring foot gong and briefly apply power (no higher than 1st notch) after car clears mainline switch. Proceed slowly past car yard and carbarn. Ring gong passing by the car yard and carbarn. Slowly move the controller up to the 5th notch. Proceed to Old Excelsior Boulevard. Ring foot gong passing under bridge.
Arrival at Old Excelsior Boulevard	<ul style="list-style-type: none"> Give <u>very short</u> end-of-line talk. NOTE: Most information for the passengers will be given during the carbarn tour. Make this talk no longer than it takes for Conductor to swing the trolley pole around. 	<ul style="list-style-type: none"> Shut off power at yellow target, stop car at red target. Rotate trolley pole to the trailing position for the trip to the carbarn for the tour. Remove reversal handle and give to the Motorman.
Depart from Old Excelsior Blvd Platform – stop at carbarn for tour	<ul style="list-style-type: none"> Move air brake transfer lever to down position. Request permission to proceed (2 rings). When permission to proceed is granted, ring foot gong, move reverser handle to forward position. Release air brakes and move controller to first notch. After car attains a speed of 3-5 mph, shut off power and apply a small amount of air to conduct rolling brake test. If speed of car slows as expected ring foot gong, release air and proceed to carbarn for 5-10 minute tour. 	<ul style="list-style-type: none"> When Motorman signals for permission to proceed (2 rings), move air brake transfer lever to up position. Make sure trolley pole is in the trailing position and all passengers are seated. Answer Motorman's bell signal to proceed (2 rings) Observe passengers to insure they are not doing anything to jeopardize their safety.

Regular Round-Trip Operations – DSR No. 78 (Continued)

Location	Motorman's Actions	Conductor's Actions
Carbarn tour	<ul style="list-style-type: none"> • Shut off power and coast to a stop at the carbarn platform. • Ring foot gong approaching carbarn. • Center forward gate on the step on the wooden platform. • Remove the reverser handle key and take it with you. • Open forward gate and assist with unloading passengers. • Conduct the carbarn tour. 	<ul style="list-style-type: none"> • Announce the carbarn tour to riders. • Assist with loading and unloading riders. • Assist with the tour and selling of merchandise.
Departing the carbarn	<ul style="list-style-type: none"> • After the riders are seated signal for permission to proceed (2 rings) • Place airbrake transfer in the down position. • When permission to proceed has been signaled ring the foot gong, move the reverser handle key to forward position, release the air brake and move controller to the 1st notch. • Proceed through the mainline switch at speeds not to exceed 5 mph • Slowly move the controller up to notch 5 and proceed toward Morse Ave. • Ring foot gong under bridge. 	<ul style="list-style-type: none"> • Check to make sure riders are seated and it is clear around the outside of the car. • When Motorman asks for permission to proceed ensure the air brake transfer is in the up position. • Reply to request with 2 rings. • Count riders and post to run sheet.
Morse Avenue	<ul style="list-style-type: none"> • Shut off power at yellow target approaching Morse Ave. • Ring foot gong approaching Morse Ave. • Make full stop at Morse Ave. • Signal for permission to proceed. • When permission granted check to see it's still clear to proceed. • Ring foot gong, release brakes and move controller to 1st notch. 	<ul style="list-style-type: none"> • Check for bikers and pedestrians on the trail and automobile traffic in the street before answering signal to proceed (2 rings) • Continue to observe as car crosses the intersection.

Regular Round-Trip Operations – DSR No. 78 (Continued)

Location	Motorman's Actions	Conductor's Actions
Lyman Lumber Company Office Building area and bike path crossing	<ul style="list-style-type: none"> • Movement through this slow speed zone is not to exceed 5 mph. Be watchful for bikers and pedestrians • Ring foot gong approaching trail crossing. • After clearing trail cross over, slowly move the controller up to 5th notch. 	<ul style="list-style-type: none"> • Watch for and be prepared to signal Motorman to stop if dangerous situation occurs out of Motorman's field of vision.
Approaching Water Street Platform Approaching Water Street Platform Slow Speed Zone	<ul style="list-style-type: none"> • Shut off power when car passes yellow target. • Ring foot gong as car starts to pass the Excelsior Lake Minnetonka Historical Society Museum. • Ring foot gong and slow car (3 mph) approaching the Library crossing and Water Street Platform 	<ul style="list-style-type: none"> • Watch for pedestrians on or close to the track.
Water Street Platform Slow Speed Zone	<ul style="list-style-type: none"> • Come to full stop at orange cone with forward gate centered on boarding step. • After car comes to complete stop remove reverser handle. • Open forward gate. • Rotate trolley pole to the trailing position for next trip to Old Excelsior Boulevard,. • Give reverser handle to Conductor. 	<ul style="list-style-type: none"> • Open gate at the Museum end of the car. • Supervise unloading from the ground.

At the End of the Day's Operations

This sequence begins after the day's operations are finished. The Operator on the No. 1 (east) 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 – DSR No. 78

Location	Foreman's Actions	Operator's Actions
Return to Car Barn	<ul style="list-style-type: none"> Follow normal sequence of operation 	<ul style="list-style-type: none"> Follow normal sequence of operation to mainline switch Stop before switch
Carbarn Yard	<ul style="list-style-type: none"> Change mainline switch from mainline to yard track. Lock the switch in this position. Move trolley pole to yard wire. Ring foot gong and proceed through car yard. Stop car at painted yellow rail. Move slowly through overhead wire frogs. Just after the trolley wheel passes through the 1st overhead frog, stop car and check to make sure the trolley wheel is on the correct yard wire (when going through the frog it may put the wheel on the wrong wire). Stop as the wheel passes under the 2nd overhead wire frog and rotate the trolley pole so it points towards the carbarn. Open carbarn doors. Move car into barn and close doors. Shut overhead power off and then remove trolley pole from wire. Follow procedures and actions on Foreman's checklist. 	<ul style="list-style-type: none"> Assist Foreman as requested One Operator departs the car to observe the trolley wheel as the car passes through the overhead wire frogs to ensure they remain on the correct wire. Assist in placing trolley wheel on the proper wire if it trails onto the wrong one. Sweep out car before it enters the carbarn. Replenish brochures on car if needed.