

MINNESOTA STREETCAR MUSEUM

OPERATIONS DEPARTMENT

Sequence of Operation – Excelsior Streetcar Line for **Duluth Street Railway No. 265**

Revised – May 12, 2019

General

Foreman must adhere to the Excelsior Streetcar Line Foreman's checklist for general procedures to prepare the streetcars at the beginning of the day's operations and when the car is put away at the end of the day's operations. Checklist is posted in ESL 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.

Foreman should arrive at the ESL car barn at least 30 minutes prior to start of scheduled operations to pump up the air on the streetcar and to prepare trip sheet, coin changer etc.

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.

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	Conductor's Actions
<p>From front of car barn through yard switches to mainline switch</p>	<ul style="list-style-type: none"> • Move car slowly through yard switches making sure trolley wheel properly tracks through overhead wire frogs • Check points of all switches to ensure they are set for the route the car is supposed to take • After car has entered onto the main line and stopped, align the switch for main line running and lock the switch. 	<ul style="list-style-type: none"> • Assist Foreman as requested. • Observe trolley wheel as it passes through overhead wire frogs. • Assist Foreman if the trolley wheel de-wires. • Move trolley pole from car barn wire to mainline wire after car is stopped on mainline.
<p>From mainline switch to Old Excelsior Blvd. (At Start of the Day's operation)</p>	<ul style="list-style-type: none"> • After request to proceed signal from Conductor is received (3 buzzes): <ol style="list-style-type: none"> 1. Move the control transfer lever to rear movement position and ensure it is fully engaged for rearward movement. Ensure that it is fully engaged. 2. Move the reverser handle to reverse position; 3. Place controller in 1st notch. • Answer Conductor's request to proceed using the buzzer signal, providing it is safe to do so (3 buzzes). • Leave controller in 1st notch while Conductor conducts rolling brake test. • After successful rolling brake test, advance controller slowly to fifth notch. • When Conductor shuts off power, shut off controller. 	<ul style="list-style-type: none"> • When ready to depart: <ol style="list-style-type: none"> 1. Unfold brake handle and put it in full apply position (all the way to the right). 2. Ring three times to request permission to proceed towards Old Excelsior Blvd. • When Foreman/Motorman grants permission to proceed east towards Old Excelsior Blvd., and when it is safe to move car, release the air and push START switch. When car attains speed of 3-5 mph, push OFF switch, and conduct rolling brake test by applying a small amount of air • If speed of car slows as expected, release air, push START switch and proceed to Old Excelsior Blvd., obeying all overhead targets. • If power does not shut off when OFF switch is pushed, immediately apply brakes by placing brake lever in full emergency position (all the way to the right).

Move from Car barn to Water Street Platform – Continued

Location	Motorman's Actions	Conductor's Action
Arrival at Old Excelsior Blvd.	<ul style="list-style-type: none"> • Upon arriving at Old Excelsior Blvd., put reverser handle in neutral position. • Assist Conductor with sign placement if necessary. 	<ul style="list-style-type: none"> • Signal the Motorman to open the rear doors (one buzz) • Set Sandwich Board sign on sidewalk.
Departing Old Excelsior Blvd	<ul style="list-style-type: none"> • When ready to move to Water Street, move control transfer lever to forward movement position; ensure control transfer lever is fully set for forward movement. • Request permission to move car (2 buzzes). • When permission to move car is granted from Conductor, place reverser handle in forward position. • When it is safe to move car release the air brake and move controller to first notch. • After car attains speed of 3-5 mph, shut off power and apply a small amount of air to conduct rolling brake test. • When car slows and it's apparent that the brakes are functioning, release the air and proceed west complying with this SoO and the overhead targets. • Follow normal sequence of operation when proceeding to the Water Street platform. 	<ul style="list-style-type: none"> • Signal Motorman to close rear doors (2 buzzes). • When request for permission to proceed is received from Motorman, fold-up rear brake handle and put it in stowed position. • Give Motorman permission to proceed (2 buzzes) if it is safe to move car.
Arrival at Water Street	<ul style="list-style-type: none"> • Stop car so front doors are centered on cement platform. • Move reverser handle to neutral position. • Open front doors. • Supervise insertion of tokens from passengers into farebox. • Do not switch controls until Conductor asks for permission to move car. • Remove reverser handle from controller and take it if Motorman leaves the front. 	<ul style="list-style-type: none"> • Assist Motorman as necessary. • Prepare the car for rearward movement.

Regular Round-Trip Operations – TCRT No. 1239

Location	Motorman's Actions	Conductor's Actions
<p>Depart Water Street Platform</p>	<ul style="list-style-type: none"> • Passengers board at the front. • Close front doors and rear doors on signal from Conductor (2 buzzes) • After request to proceed signal from Conductor is received (3 buzzes): <ol style="list-style-type: none"> 1. Move control transfer lever to rear movement position; ensure that the control transfer lever is fully set for rearward operations. 2. Move reverser handle to reverse position. 3. Place controller in 1st notch. • Answer Conductor's request to proceed using the buzzer signal, providing it is safe to do so (3 buzzes). • Leave controller in 1st notch until Conductor successfully conducts the rolling brake test. • After the successful rolling brake test is completed, and after the front end of the car has passed the west end of the old M&StL depot, watch the voltmeter and ammeter and when current drops to approximately 70 amps, advance the controller one notch at a time 2 to 3 seconds between each notch until it is in the 5th notch. 	<ul style="list-style-type: none"> • Signal Motorman to close rear door if they're open (2 short buzzes). • Make announcement to passengers to remain seated while the streetcar is in motion and to keep body parts inside the streetcar. • When ready to depart: <ol style="list-style-type: none"> 1. Unfold brake handle and place in full apply position (all the way to the right). 2. Buzz 3 times to request permission to proceed towards Old Excelsior Blvd. • After permission to proceed is granted, check front and sides of car for passengers and obstructions. • When it is safe to move car, push START switch. When car attains speed of 3-5 mph, push OFF switch, and conduct rolling brake test. • If speed of car slows as expected, release air, push START switch and proceed to Old Excelsior Blvd., following this SoO and overhead targets. • If power does not shut off when OFF switch is pushed, apply brakes immediately by placing brake lever in full emergency position.
<p>Approaching Lyman Lumber Company Office Building and bike path crossing</p>	<ul style="list-style-type: none"> • Shut off controller and move it to first notch when conductor shuts off power. • Watch right side bike path for pedestrians as car approaches bike path crossing. • Signal Conductor to stop if needed. 	<ul style="list-style-type: none"> • Shut off power when car reaches yellow target. • Slow car to 5mph or less when car reaches red target. • Watch for bicyclists, joggers/pedestrians as car approaches bike/hiking path crossover.

Regular Round-Trip Operations TCRT No. 1239 – Continued

Location	Motorman's Actions	Conductor's Actions
Lyman Lumber Company Office Building Area	<ul style="list-style-type: none"> • Leave controller in 1st notch. • Be watchful for bikers and pedestrians. 	<ul style="list-style-type: none"> • Coast through this area at speed not to exceed 5 MPH. • Watch for and be prepared to stop for pedestrians and Bicyclists.
Morse Avenue	<ul style="list-style-type: none"> • Shut off controller when car stops. • After conductor buzzes for permission to proceed (3 buzzes), put controller in 1st notch. • Answer Conductor's bell signal if it is OK to proceed. • After car has moved across Morse Ave., watch the ammeter and when current drops to approximately 70 amps advance the controller up one notch at a time until it is at the 5th notch. 	<ul style="list-style-type: none"> • Make complete stop at Morse Ave. • When traffic on Morse Avenue is clear, request permission from Motorman to proceed (3 buzzes). • When permission is received, release brake and push <u>START</u> button.
Approaching Division Street Bridge	<ul style="list-style-type: none"> • Shut off controller when conductor shuts off power at yellow target. • Move controller to 1st notch. 	<ul style="list-style-type: none"> • Cut power when car reaches yellow target. • Coast downhill to mainline switch. • Apply brakes to slow car to 5 MPH as it passes through mainline switch
Passed Car barn Switch	<ul style="list-style-type: none"> • Leave controller in first notch in preparation for stop at car barn. 	<ul style="list-style-type: none"> • Turn power on after car clears mainline switch if necessary. • As you approach car barn, prepare to stop at the platform by the west end of car barn.
Car barn	<ul style="list-style-type: none"> • When Conductor has stopped car at car barn platform, turn controller off and move reverser handle to neutral position. • Announce the car barn tour to the passengers. • Remove reverser handle from controller and take it if the Motorman leaves the car. 	<ul style="list-style-type: none"> • Shut off power and coast to stop at car barn platform, aligning the rear door on the middle of platform on gate side of car. • Signal Motorman to open rear doors (1 buzz). • Conduct car barn tour. NOTE: Either the Motorman or the Conductor can conduct the car barn tour.

Regular Round-Trip Operations TCRT No. 1239 – Continued

Location	Motorman's Actions	Conductor's Actions
Departing Car barn	<ul style="list-style-type: none"> • Check to make sure passengers are seated and it is clear outside car to proceed. • When Conductor requests permission to proceed from car barn, move reverser handle to reverse position, and move controller to first notch • Answer Conductor's request to proceed (3 buzzes). • Advance controller slowly to 5th notch. 	<ul style="list-style-type: none"> • Signal Motorman to close rear doors (2 buzzes). • Signal the Motorman for permission to proceed (3 buzzes). • When permission to proceed has been granted, release the air brake and push <u>START</u> switch.
Passing under old TCRT bridge	<ul style="list-style-type: none"> • Shut off controller when conductor shuts off power at yellow target. 	<ul style="list-style-type: none"> • Shut off power at yellow target just beyond the old TCRT bridge. • Coast to Old Excelsior Blvd. Platform.
Arrival at Old Excelsior Blvd. Platform	<ul style="list-style-type: none"> • Put reverser handle in neutral position. • Open front doors if passengers are entering or alighting. • Collect fares and issue tokens from entering passengers. • Note the amount received for tokens and report same to the agent in the ticket booth. • Give very short end of line talk. NOTE: Most information to passengers will be given during the car barn tour. If an end of line talk or Q&A session occurs at all, <u>it should be very short.</u> 	<ul style="list-style-type: none"> • Slow down streetcar about 150 feet prior to Old Excelsior Blvd., platform. • Stop car at platform.

Regular Round-Trip Operations TCRT No. 1239 – Continued

Location	Motorman's Actions	Conductor's Actions
<p>Depart from Old Excelsior Blvd Platform</p>	<ul style="list-style-type: none"> • Move control transfer lever to forward movement position. Ensure that the control transfer lever is fully placed in its forward movement position. • Signal Conductor for permission to proceed forward (2 buzzes) • When permission to proceed is granted, put reverser handle into forward position. • Release air brake and put controller in first notch. • After car attains speed of 3-5 mph, shut off power and apply a small amount of air to conduct rolling brake test. • When car slows and brakes are functioning as intended, release the air and proceed west obeying this SoO and the overhead targets. 	<ul style="list-style-type: none"> • When request for permission to proceed is received from Motorman, fold-up rear brake handle and place it in stowed position. • Answer Motorman's buzzer signal to proceed if it is safe to do so (2 buzzes). • Observe passengers in main compartment to ensure their safety.
<p>Approach ESL Car Barn</p>	<ul style="list-style-type: none"> • Proceed slowly past carbarn, ring foot gong when approaching west end of car barn. • Cut power when front of car passes parking area crossing in front of car barn. • Coast through mainline switch at speed not to exceed 5 MPH. • After passing switch, move controller to first notch, and when current drops to approximately 70 amps move controller handle one notch at a time until it is in the 5th notch. 	<ul style="list-style-type: none"> • Continue to observe passengers. • Record passenger count on trip Sheet.

Regular Round-Trip Operations TCRT No. 1239 – Continued

Location	Motorman's Actions	Conductor's Actions
Morse Avenue	<ul style="list-style-type: none"> • Cut power at yellow target approaching Morse Avenue. • Make full stop at Morse Avenue. • When it is clear and safe to proceed, signal conductor for permission to proceed (2 buzzes). • When permission from conductor is granted and it is safe to proceed, release brakes and move controller to first notch. 	<ul style="list-style-type: none"> • Check for bike riders or pedestrians on right side and auto traffic on left side of car. • Give Motorman permission to proceed if the way is clear and safe (2 buzzes).
Lyman Lumber Company Office Building area and bike path crossing	<ul style="list-style-type: none"> • Leave controller in first notch. • Be watchful for bike riders and pedestrians that might cross in front of car. • After car has passed bike path crossover, and current drops to approximately 70 amps, advance controller one notch at a time until it is in the 5th notch. 	<ul style="list-style-type: none"> • 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.
Approaching Water Street Platform	<ul style="list-style-type: none"> • Shut off power when car passes yellow target; ring foot gong as car starts to pass the old M&StL Depot • Before the M&StL depot, apply air to slow down the car. Approach Water Street platform at dead slow speed (3mph). • Come to full stop with front door centered on cement platform. • Open rear doors when Conductor signals (1 buzz). 	<ul style="list-style-type: none"> • After car comes to complete stop, signal Motorman to open rear doors (1 buzz). • Supervise unloading of passengers.

At the End of the Day's Operations

This sequence begins after the day's operations are finished. The Conductor 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	Motorman's Actions	Conductor's Actions
Return to carbarn	<ul style="list-style-type: none"> Follow normal sequence of operation to mainline switch into carbarn yard. 	<ul style="list-style-type: none"> Follow normal sequence of operation. Stop Car before mainline switch. Signal Motorman to open rear doors.
Location	Foreman's Actions	Operator's Actions
Carbarn Yard	<ul style="list-style-type: none"> Change switch from mainline to yard. Lock the switch in this position. Move trolley pole to yard wire. Move car into yard and through the overhead wire frog. Just after the trolley wheel passes through the overhead wire frog, stop car and check to make sure the trolley wheel is on the correct yard wire (when going through the frog it usually puts the wheel on the wrong wire) Stop car about 15 feet from carbarn door. Open carbarn door and move car into carbarn. Follow all procedures contained in the Foreman's checklist. 	<ul style="list-style-type: none"> Assist Foreman as requested. Sweep out car before car is put into carbarn. Check supply of brochures and replenish the supply in the brochure rack on the car.