



MINNESOTA STREETCAR MUSEUM TRANSPORTATION DEPARTMENT

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

Revised – April 2008

General

Refer to Crew Members Procedures & Sequence of Operations at the Excelsior Streetcar Line (ESL) for general operational instructions and crew duties and responsibilities on regularly scheduled operations at ESL

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.

Specific instructions regarding operating controls for streetcar No. 78 can be found in 2008 Foreman Recertification Document.

Forman 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, and cash pouch 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.

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 stopped the car before the mainline switch. The crew is present and ready to move car to Water Street.

Move from Car barn to Water Street Platform

Location	Foreman's Actions	Operator's Actions
Yard	<ul style="list-style-type: none"> • Set switch for entry onto the main line • After car has entered onto the main line and stopped, align the switch for main line running and lock the switch. • Move trolley pole from car barn lead wire to main line wire 	<ul style="list-style-type: none"> • At Foreman's request moves car onto main line and stop after the switch has been cleared
Location	Motorman's Actions	Conductor's Actions
From Car Barn to Water Street Platform	<ul style="list-style-type: none"> • Request clearance to proceed (2 Bells) • Follows normal sequence of operation 	<ul style="list-style-type: none"> • If it is safe to proceed answers motorman's request (2 bell) • Follows normal sequence of operation
Arrival at Water Street Platform	<ul style="list-style-type: none"> • Stop car so front door is centered on black stripe painted on the cement platform • Put controller key in neutral position. • Open gate on front of car • Do not switch controls until car is ready to proceed eastward 	<ul style="list-style-type: none"> • After car is stopped at Water Street immediately move the trolley pole to the eastbound trolley position. The pole will be trailing the car. • Pick up the controller key and take to rear controller • Welcome the passengers, collect fares as passengers enter the car • When car is loaded record count on trip sheet

Normal Sequence of Operation

Location	Motorman's Actions	Conductor's Actions
Depart Water Street Platform	<ul style="list-style-type: none"> • When conductor signals for permission to start East Bound Trip open the air transfer valve (move to up position) • Check to make sure the trolley pole is in correct trailing position • Check to make sure it is safe to move the car • Signal the Conductor it is ok to proceed. (3 Bells) 	<ul style="list-style-type: none"> • When passengers are loaded and seated and gates are securely closed, signal the Motorman for permission to begin the trip to Old Excelsior Blvd. (3 Bells) • When clearance from motorman is received close brake transfer valve(Move to down position) • Move controller key to the forward position • Release the brakes • Move controller to first notch and continue to notch up until 5th point is reached
Approaching Lyman Lumber Company Office Building and bike path crossing	<ul style="list-style-type: none"> • Watch right side bike path for bicyclist and pedestrians as car approaches bike path crossing • Be prepared to signal Conductor to stop if dangerous situation occurs 	<ul style="list-style-type: none"> • Shut off power when car passes yellow painted tie. • Watch for bicyclists and joggers/pedestrians as car approaches bike path crossing
Lyman Lumber Company Office Building Area	<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 • 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 signals for permission to proceed signal it is ok to proceed (3 Bells) 	<ul style="list-style-type: none"> • Make complete stop at Morse Avenue • When traffic on road is clear request clearance from Motorman to proceed (3 bells) • Release brake and move controller to first notch. • Move controller to 5th notch one notch at a time 2 to 3 seconds apart
Approaching Division Street Bridge	<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"> • Cut power when car passes yellow tie • Coast downhill to car barn switch • Apply brakes to slow car to 5 MPH as it passes through the mainline switch

Normal Sequence of Operation

Location	Motorman's Actions	Conductor's Actions
Passed car barn switch	<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"> Turn power on after car clears car mainline switch As you approach carbarn prepare to stop at the platform by the east end of carbarn. Platform will be on carbarn side of car
Car Barn	<ul style="list-style-type: none"> Announce carbarn tour Assist with unloading and loading of passengers, at car barn. 	<ul style="list-style-type: none"> Shut off power and coast to stop at carbarn platform, center the gate on the small platform. Move controller key to neutral position Conduct car barn tour
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 asks for permission to proceed from car barn , signal with (3 Bells) 	<ul style="list-style-type: none"> Signal the Motorman for permission to proceed (3 Bells) When permission to proceed has been received, move controller key to forward position, release the brake and move controller to 1 notch
Passing under old TCRT Row Bridge	<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"> Cut power at yellow painted tie Coast up to Old Excelsior Blvd. Platform
Arrival at Old Excelsior Blvd. Platform	<ul style="list-style-type: none"> Give end of line talk 	<ul style="list-style-type: none"> Stop car at loading platform Supervise loading and unloading of passengers Collect fares Move trolley pole to other end of car Give controller key to Motorman
Depart from Old Excelsior Blvd Platform	<ul style="list-style-type: none"> Signal Conductor for permission to start return trip When permission to proceed is received move brake lever to down position Move controller key to forward position release brake and move controller to first notch Move controller to notch 5 one notch at a time 2 to 3 seconds apart 	<ul style="list-style-type: none"> When Motorman signals for permission to proceed, move brake lever to up position. Make sure trolley pole is in correct position and all passengers are seated Answer Motorman's bell signal to proceed (2 Bells) Observe passengers to insure they are not doing anything to jeopardize their safety

Normal Sequence of Operation

Location	Motorman's Actions	Conductor's Actions
Approach ESL Car Barn	<ul style="list-style-type: none"> • Turn power off when car passes yellow painted tie just before the old TCRT Bridge • Proceed slowly past car barn, ring gong when approaching west end of car barn • Cut power when front of car passes parking area crossing in at car barn • Coast through switch at speed not to exceed 5 MPH • Move controller to first notch and continue to move one notch at a time 2 to 3 seconds apart to notch 5 	<ul style="list-style-type: none"> • Continue to observe passengers
Morse Avenue	<ul style="list-style-type: none"> • Cut power approximately 3/4ths of way from switch to Morse Avenue • Make complete stop at Morse Avenue. • When it is clear to proceed signal conductor for permission to proceed (2 bells) • When permission from conductor is received release brakes and move controller to first notch. 	<ul style="list-style-type: none"> • 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)
Lyman Lumber Company Office Building area and bike path crossing	<ul style="list-style-type: none"> • Leave controller in first notch • Be watchful for bikers and pedestrians • Move the controller to the 5th notch one notch at a time 2 to 3 seconds apart 	<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 painted tie • Ring foot gong as car starts to pass the old M&StL Depot 	<ul style="list-style-type: none"> • Watch for pedestrians on or to close to the track.

Normal Sequence of Operation

Location	Motorman's Actions	Conductor's Actions
Water Street Platform	<ul style="list-style-type: none"> • Approach platform at dead slow speed • Come to full stop with car door centered on black line on cement platform • After car comes to complete stop remove controller reverse key • Move trolley pole to other end of car • Give controller Key to Conductor 	<ul style="list-style-type: none"> • Supervise loading and unloading of passengers • Collect fares • Update trip sheet

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"> • Follow Normal sequence of operation 	<ul style="list-style-type: none"> • Follow normal sequence of operation to mainline switch • Stop before yard switch
Yard	<ul style="list-style-type: none"> • Change yard switch from mainline to yard • Move trolley pole to Yard wire and move car into yard and Stop where rails are painted yellow • Check to make sure trolley wheel is on the right wire 	<ul style="list-style-type: none"> • Assist Foreman as requested