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# *Lionel* **MTA R27 Subway Owner's Manual**

Featuring

**LEGACY**  
R-A-I-L-S-O-U-N-D-S



**ODYSSEY**<sup>TM</sup>  
SYSTEM

# ***Congratulations!***

**C**ongratulations on your purchase of the Lionel R27 Subway set. Under license from the New York City Metropolitan Transportation Authority, the set features cars with operating doors, prototypical lighting and destination boards, and RailSounds announcements of the stops along the line that serviced Lionel's New York City offices.

## **Features of this locomotive**

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- **LEGACY Control System equipped—able to run with the new LEGACY Control System, in the TrainMaster Command Control environment, or in the conventional environment with only a standard transformer**
- **Odyssey II Speed Control with ON/OFF switch**
- **LEGACY RailSounds sound system with StationSounds announcements**
- **Hinged roof panels on the top of each car houses interior light switch and door lock switches for easy adjustments without having to remove the car from the track**
- **Operator-controlled opening side doors on all cars**
- **Authentically detailed interiors**
- **Interior lighting in all cars**
- **Directional lighting including prototypical marker lights, headlights, and destination signs**
- **Dual powerful maintenance-free motors with momentum flywheels**

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## Quick Start

**Note!** Power your Subway Set with an alternating-current (AC) transformer only. Using a direct-current (DC) transformer, or in excess of 19 volts AC, may result in damage to sensitive electronic components.

### LEGACY Control operations

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**F**or the finest operating experience, your Subway is fully compatible with the new LEGACY Control System.

To operate in LEGACY mode, you need a LEGACY Command Base and LEGACY CAB-2 Remote Controller. Both products are offered together in the LEGACY Command Set, 6-14295.

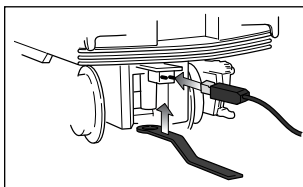


Figure 1. Connections

1. Turn off track power and plug in the LEGACY Base.
2. Place your Subway Set on Lionel or Lionel-compatible 0-36 or wider track and connect the drawbar and tether between the cars as illustrated in Figure 1. Note that the tether is 'keyed' and will plug in only one way. Connection is marked "UP" for clear identification.
3. Increase track power voltage to full power (no more than 19 volts AC).
4. Press ENG and 1 to address your Subway Set with your LEGACY CAB-2 Remote Controller.
5. Throttle up and move 'em out.

### TrainMaster Command Control operations

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**T**o operate your Subway in the Command Control environment, you need a Command Base (available separately, 6-12911) and a CAB-1 Remote Controller (available separately, 6-12868).

1. Turn off track power and plug in the Command Base.
2. Place your Subway Set on Lionel or Lionel-compatible 0-36 or wider track and connect the drawbar and tether between the cars as illustrated in Figure 1. Note that the tether is 'keyed' and will plug in only one way. Connection is marked "UP" for clear identification.
3. Increase track voltage to full power (no more than 19 volts AC).
4. Press ENG and 1 to address your Subway Set with your CAB-1 Remote Controller.
5. Throttle up and move 'em out.

### Transformer operations

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1. Place your Subway on Lionel or Lionel-compatible 0-36 or wider track and connect the drawbar and tether between the cars as illustrated in Figure 1. Note that the tether is 'keyed' and will plug in only one way. Connection is marked "UP" for clear identification.
2. Power your Subway Set at 12-18 volts with your alternating current (AC) transformer.
3. Wait three to eight seconds until the Subway's headlights illuminate and the LEGACY RailSounds sound system starts up.
4. Move 'em out! Press the DIRECTION button on your controller, then throttle up.

# LEGACY Control System operations—overview

**Please note that not all LEGACY products have all the features mentioned in this section.**

**Note!** This section is a brief overview of the LEGACY Control System. For a more in depth explanation of the LEGACY Control System features, please see your LEGACY Control System Operations Manual.

## GET READY TO RUN

**G**et your engine running now by following the instructions in this guide. We'll power up the track, "address the engine" so it can be controlled by your CAB-2 remote and learn to use the Velocity Throttle, Whistle, Bell, Brake and Direction commands.

### Power Up The Track

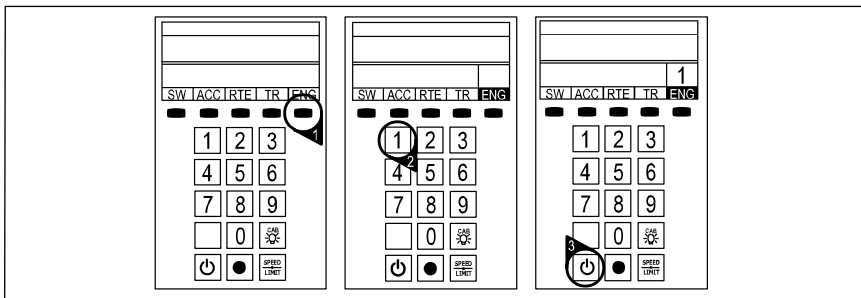
Refer to PowerMaster, TPC, or ZW manual for the correct method to power up. With your locomotive on the track and ready to roll, power-up your track to a constant 18 volts. If a circuit breaker trips when you turn on the Lionel power supply, check the wheels of your locomotive to make sure they are all securely on the track. Check to make sure the track is free of all metals that may cause a short circuit.

### Address Your Engine

First, you must address the engine. This "tells" your CAB-2 which locomotive you want to control. This is important when you have more than one engine on your layout.

To address an engine:

1. Press ENG
2. Press 1
3. Press Start Up



See reference numbers 1, 2, and 3

## Start 'Er Up

Now it is time to start up your engine's sound system.

To start the engine's Railsounds system, press Start on the touch-screen or any action key (Whistle, Bell, Velocity Throttle, etc.).

Your engine sound system will start up and the Touch-screen Control Panel will appear.

# LEGACY Control System operations—overview

## The LEGACY CAB-2 Remote Controller

### Main Display

Displays real-time information about your railroad system. Displays real-time feedback of operation.

### Scroll Button

Navigates through the entire list of Engines, Trains, Switches, etc.

### Select Button

Performs addressing by 3-4 digit road number.

### Touch Screen Key Pad

A group of touch sensitive keys with icons for each function. These keys serve many purposes and their icons change accordingly.

### Train Brake Slider

This slider is used to increase or decrease the amount of Train Brake effecting the engine or train.

### Train Link Button

For future use.

### AUX-1/Thru Button

Press to view the Control Panel while operating. Controls switch direction.

### AUX-2/Out Button

Controls switch direction.

### Emergency Halt Button

Stops everything on layout, also stops recording playback.

### Record Button

Used to record and playback events.

### Velocity Throttle

Throttle control over engines, also used to navigate thru info/options.

### Set Button

Used to set Engine address and for programming.

### Info Button

Used to enter/view the info/options of selected components.

### CTC Button

Turns the Remote Control ON and OFF. Used to enter the Remote and Base options. Pressing CTC while in a menu will always bring you back to main screen.

### Soft Keys

These keys directly correlate to the 5 selection boxes located at the bottom of the main screen. These are also used in the info/options menus to select options.

### Warning Sound Controller

Warning Bell and Variable Whistle/Horn control. Pull down to sound Whistle/Horn. Push up and release to trigger Warning Bell.

### Official R.R. Speed Control Bar

Toggles the touchscreen display of R.R. preset speeds and control panel.

### Multi Controller

Boost, Brake, and Direction control. Rock forward for Boost, rock backward for engine brake, and press down for direction change. Click-hold-and rock for absolute direction select.

### Front & Rear Coupler Buttons

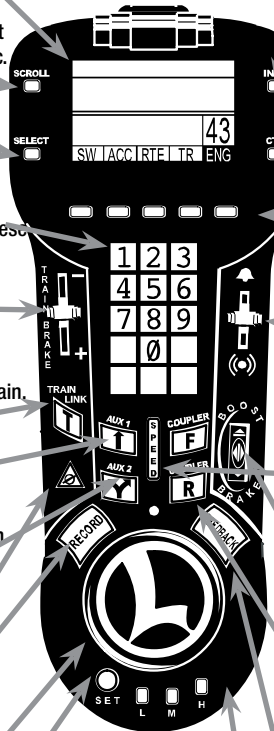
Fire couplers.

### Feedback Buttons

Toggle ON/OFF the vibration feedback feature in the CAB-2 Remote.

### Low, Medium, High Momentum Buttons

Used to select the desired momentum of your addressed engine/train/accessory.



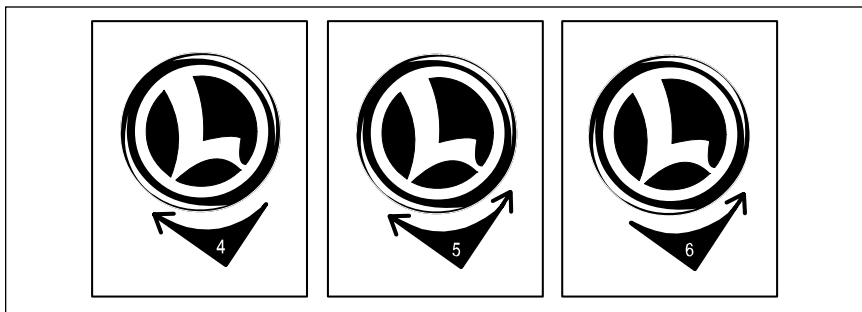
# LEGACY Control System operations—overview

## THE VELOCITY THROTTLE

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**T**he Velocity Throttle (that big red rotary knob in the middle of your Lionel remote) is used to start your engine moving, slow it down or speed it up. Use it simply by turning it clockwise (speed up) or counter-clockwise (slow down).

4. Turn the Velocity Throttle clockwise a small amount. Your engine will begin to move.
5. Experiment with the engine's response to the Velocity Throttle. Turn the Velocity Throttle clock-wise and counter-clock-wise.
6. Slow and stop your engine by turning the Velocity Throttle counter-clockwise.



See reference numbers 4, 5, and 6

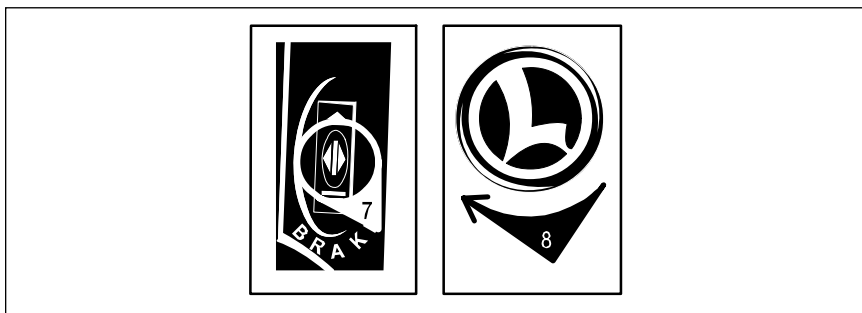
## THE MULTI-CONTROLLER

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### **Direction**

The direction of your engine toggles between forward and reverse at the touch of the Multi-Controller.

7. Press the Multi-Controller once. Your engine's lights will change directions.
8. Turn the Velocity Throttle clockwise a small amount. Your Engine will reverse directions and travel in the opposite direction.



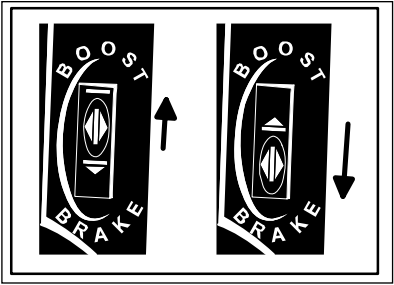
See reference numbers 7, and 8

# LEGACY Control System operations–overview

## THE MULTI-CONTROLLER (continued)

### Boost & Brake

Boost and brake give you another way to control the speed of your train. Boost gives your loco a temporary increase in tractive power, and returns to the previous speed when you release the control, while the brake command slows you down quicker than the Velocity Throttle alone and holds your speed at the adjusted level.



9. Experiment with Boost and Brake. Notice how your engine responds to the Multi-Controller. See reference number 9

## THE TRAIN BRAKE SLIDER

**A** Train Brake is used to slow down and limit the top speed of your train by adding a load. The more the Train Brake is applied by pulling the Train Brake Slider down, the more laboring is heard from the engine. Eventually Train Brake application will slow down the train and it is even possible to stop a train by pulling the Train Brake Slider all the way down. A tremendous amount of laboring can be heard whenever you apply the Train Brake in a large amount.

10. Experiment with the Train Brake. Try a small amount of the Train Brake when your engine is moving down the rails at a medium speed. Notice the effect the Train Brake has on sound and speed. Try adding more Train brake and notice that the Train Brake can limit the top speed available to your engine.

Try adding even more Train Brake and notice that the Engine sounds like it is working harder and harder as the Train Brake is applied more.



See reference number 10



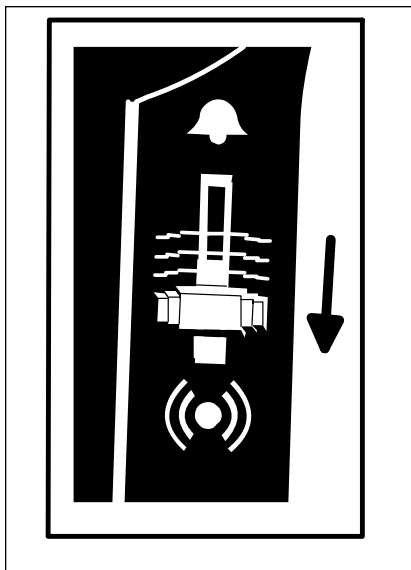
# ***LEGACY Control System operations—overview***

## **THE WARNING SOUND CONTROLLER**

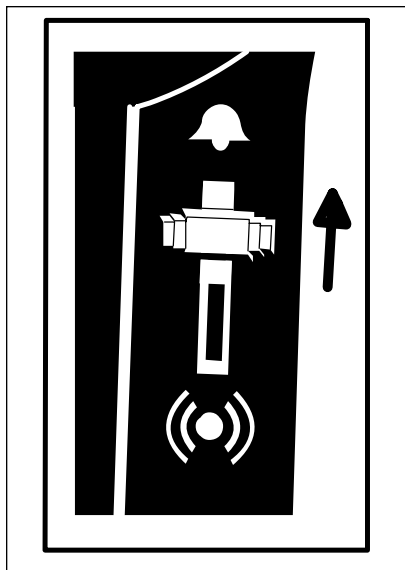
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**W**arning sounds are an important part of Lionel Railroading. Your Lionel Legacy Control System equipped engines have a real-time variable "quilling" whistle and horn, while Lionel TMCC engines do not have this feature.

11. Blow the Horn/Whistle by pulling down on the Warning Sound Controller.
12. Try pulling down the Warning Sound Controller various amounts and listen. Notice the difference in intensity of the Whistle or Horn.
13. Push the Warning Sound Controller up once and quickly release. Notice that the bell rings once.
14. Push the Warning Sound Controller up and hold it for 1.5 seconds. Notice that the Bell is sounding continuously.
15. Push the Warning Sound Controller up once. Notice that the continuous Bell stops.
16. Experiment with ringing the Bell in your own rhythm or continuously, depending on how you push the Warning Sound Controller



See reference numbers 11, and 12



See reference numbers 13, 14, 15, and 16

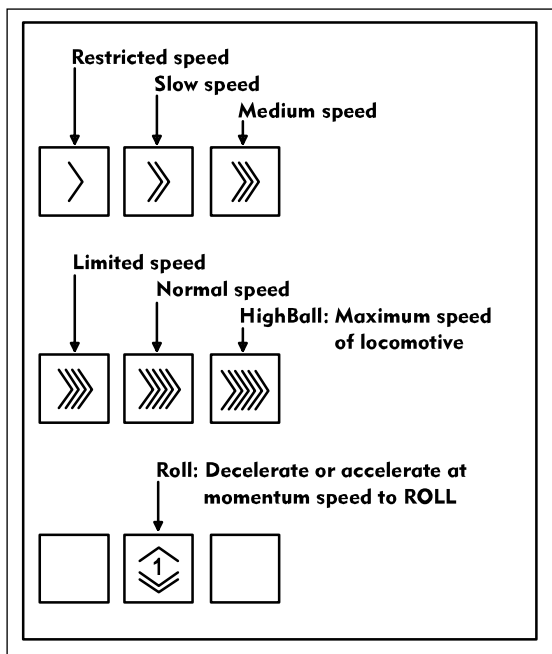
# LEGACY Control System operations—overview

## THE SPEED BAR

### Selection of Pre-set Speeds

**T**he Speed Bar is used to select a new touch-screen Icon Control set. This set of touch-screen keys is used to select Pre-set Speeds. Two additional controls, "High Ball," (Top Speed) and "Brake to Roll," (speed step one) are possible with this Touch-Screen set of controls. Pressing AUX-1 returns you to the standard control panel.

17. Press, hold and release the Pre-set Speed icons one by one. Experiment.
18. The speed of the engine changes with each press and release of a different Pre-set Speed key.
19. You can also use the Velocity Throttle and other action controls in this mode and continue to use Pre-set speeds at the same time.
20. Repeat step 17.
21. Press AUX-1 to leave the Pre-set speed mode and return to the standard mode and return to the standard control panel.
22. Press the speed bar to toggle between the Pre-set Speed Control Panel and the Standard Control Panel.



See reference numbers 17, 18, 19, 20, 21 and 22

At this point you know the basics of how to operate. There is a lot of fun waiting as you experience the interaction of the controls and the touch-screen.

Be sure to read the entire Lionel Legacy Control System Manual to get the most from your Lionel products.

**Note!** Your Subway has a different "Speed Profile" than your LEGACY steam or diesel road engines for more prototypical operation. It is not meant to "Lash-Up" to another locomotive.

# LEGACY Control System operations–overview

## OPERATING THE CAR DOORS IN THE LEGACY ENVIRONMENT

Each car features a lighted interior and opening doors. In the LEGACY environment, the doors are opened and closed using the CAB-2. Press the doors OPEN and CLOSE icon on the CAB-2 after loading the Subway module. See Figure 2.

Additionally, the doors can be opened and closed using the AUX1 and AUX2 and **F** and **R** coupler buttons, if you have not loaded the module to the CAB-2.

To open the left side doors, press **AUX1**, **F**. To closed the doors, press **AUX2**, **F** then **AUX2**. To open the right doors, press **AUX1**, **R**. To close the doors, press **AUX2**, **R** then **AUX2**. You may choose to lock the doors from opening on a certain side using the switches located under the roof-top hatch on each car. The switches are illustrated in Figures 3 on page 12.

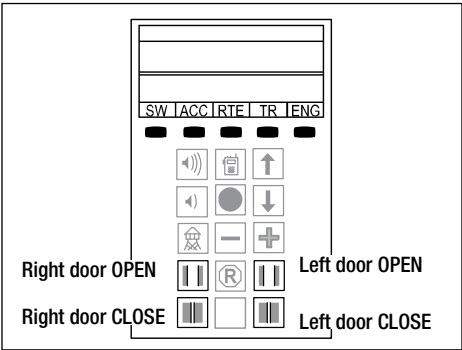


Figure 2. OPEN and CLOSE icon on the CAB-2

**Note!** Any open door will close automatically as the train begins to move, unless they are locked in the open position.

**Note!** As the Subway begins to move, the interior lights will dim

**Note!** A door error will occur any time that the doors try to move (either open or close) and do not complete the cycle after three tries. If this error occurs, the interior lights will begin to flash. This can be reset by using the **R** button on the CAB2 or **AUX1**, **O** on either the CAB1 or CAB2.

The doors can be locked out to continue to operate without the door function. If the problem persists, contact Lionel Service or your Lionel Authorized Service Station.

### STATION ANNOUNCEMENTS

A special feature of this MTA R27 Subway set are station announcements that follow the actual route of the subway from Coney Island to Astoria. The subway starts Northbound from Coney Island. In order to advance the stations announcement, stop the subway, open the doors, close the doors, (or start the subway in motion), press the **2** key and the next station will be announced. Once at the Astoria end of the route, reverse direction of the Subway and hear the station announcement going Southbound toward Coney Island.

# Locomotive switch function overview

## Switch overview

### Command Reverse Unit Switch

Used to assign an ID# and reprogram the Subway in LEGACY and Command operation when the switch is in the “PROG” position. Also used to “lock” your Subway in a single direction, or neutral, in conventional operation when the switch is placed in the “PROG” position.

### Odyssey II Speed Control System Switch

Used to turn the Odyssey II Speed Control System “on” and “off”. See page 19.

### RailSounds (RS) SignalSound (SS) Switch

Used to select RailSounds or SignalSounds. In the RailSounds position, all sounds are provided. In the SignalSounds position, only the Horn and Signal Buzzer are heard.

### Interior Lights Switch

This switch can be used to turn the lights off in the interior of the cars. This switch will not turn the lights on if they have been turned off with the CAB1 or CAB2.

### Volume Control Adjustment

Raises or lowers the overall volume of RailSounds, if RailSounds are on.

### Door Lock Switches

Used to lock the doors in the open or closed position. Move the door to the position desired and then move the switch to lock. The door will maintain that position until it is unlocked.

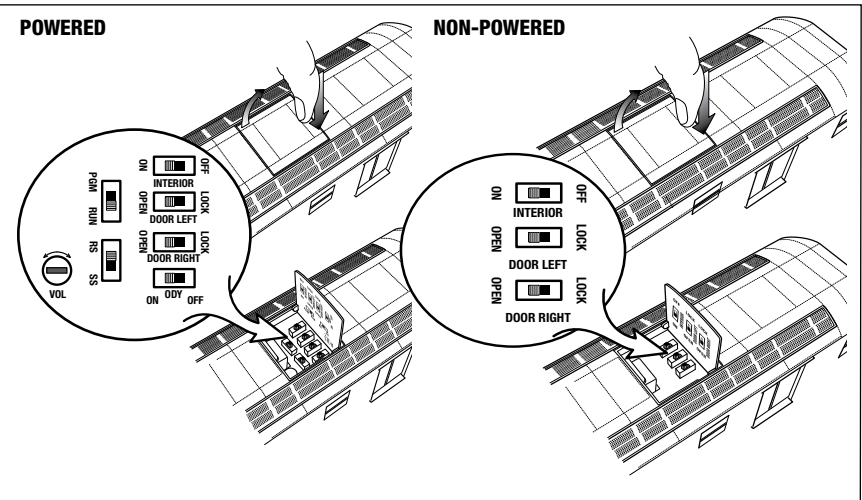


Figure 3. Switch locations

**Note!** Some switches are only located on the powered unit.

# ***TrainMaster Command Control operations***

## **TrainMaster Command Control operations**

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**I**n addition to your transformer, to operate your Subway set in the Command Control environment, you need a Command Base (available separately, 6-12911) and a CAB-1 Remote Controller (available separately, 6-12868).

Your commands are sent by the CAB-1 Remote Controller to the Command Base, which then translates the command into digital code. That code is sent through the outside rails to your locomotive, which will not respond until it recognizes its unique ID#. TrainMaster Command Control gives you the power to operate multiple Command-equipped locomotives on the same track at the same time.

## **Operating your locomotive in the Command Control environment**

---

- 1. Turn off track power and plug in the Command Base.** Be sure that the Command Base is connected to the outside rail or to the Common/Ground/U terminal on your track power supply.
- 2. Place your Subway set on Lionel or Lionel compatible 0-36 or larger track.**
- 3. Increase track voltage to full power (no more than 19 volts AC).** On PowerMasters, slide the CMD/CONV switch to CMD. Program Track Power Controllers to Command Control operation. **Do not power with 50 HZ AC.**

**Caution!** Power your Subway set with an alternating-current (AC) transformer only. Powering your Subway set with a direct-current (DC) transformer, or in excess of 19 volts AC, may result in damage to sensitive electronic components.

- 4. Press ENG and enter the ID# to address your Subway with your CAB-1 Remote Controller.** All Lionel Subway sets come factory-programmed as ID# 1. To change the ID#, see page 16.
- 5. Throttle up and move 'em out!** Your Subway set will respond to every command from your CAB-1 Remote Controller.

## **Operating the car doors in the TMCC environment**

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**E**ach car features a lighted interior, and opening doors. In the TMCC environment, the doors are opened and closed using the CAB-1 Remote Controller. To open the left side doors, press **AUX1** and **F**. To open the right side doors, press **AUX1** and **R**. To close the doors, press **AUX2, F, AUX2**. You may choose to lock the doors from opening on a certain side using the switches located under the roof-top hatch on each car. The switches are illustrated in Figure 3 on page 12.

**Note!** Any open door will close automatically as the train begins to move, unless they are locked in the open position.

# TrainMaster Command Control operations

## CAB-1 Remote Controller commands

The CAB-1 Remote Controller commands are detailed below. *The corresponding RailSounds sound system effects are in bold italic type.*



Activates the numeric keypad.

***Air let off sound.***



Toggles the headlight, taillights, marker lights, route board, and destination board lights on and off.



Accelerates the Subway with a clockwise rotation. Decelerates the Subway with a counter-clockwise rotation.



Activates the Subway's horn. Release the button to discontinue the sound. ***Horn sound.***



Changes the Subway's direction. The Subway decelerates to a stop and continues in the opposite direction when you increase the throttle.

***Mechanical clank.***



Increases the Subway's speed while the button is pressed. Release the button to return to the initial speed.



Decreases the Subway's speed while the button is pressed. ***Squealing brake sounds.***



Shuts down all PowerMasters on your railroad. Stops all TrainMaster Command Control-equipped locomotives in operation. Use **HALT** only in "emergency" situations.












L = 32 speed steps  
M = 100 speed steps  
H = 100 speed steps  
with momentum.

# ***TrainMaster Command Control operations***

## **CAB-1 Remote Controller numeric keypad commands**

---

**W**hen you press the **AUX1** button on your CAB-1 Remote Controller, you turn the numeric keypad into ten command buttons. After you press the **AUX1** button, you will be able to press any numbered button until you address a different product. ***The corresponding RailSounds sound system effects are in bold italic type.***

-  Stops and resets the Subway. Resets the Subway's direction to forward. Resets the RailSounds sound system and resets flashing lights from a door movement error. ***Horn sound.***
-  Raises the volume of the LEGACY RailSounds sound system background sounds. The horn and dialog are unaffected. The default is full volume. The volume setting is retained when track power is turned off. ***Sound volume increases.***
-  Conductor announces direction of Subway and upcoming stops (see page 21). ***Station announcements.***
-  Starts the RailSounds sound system if the Subway was previously shutdown.
-  Lowers the volume of the LEGACY RailSounds sound system background sounds. The horn, and dialog are unaffected. The volume setting is retained when track power is turned off. ***Sound volume decreases.***
-  Activates the LEGACY RailSounds sound system shutdown sequence when stopped. ***Shut down announcements.***
-  Sounds Signal Buzzer. ***Buzzer sound.***
-  Turns interior lights off
-  Turns interior lights on if switches in cars are in the ON position.

# ***TrainMaster Command Control operations***

## **Assigning your Subway a new ID#**

---

**A**s your roster of TrainMaster Command Control-equipped locomotives grows, you will want to give each unit a unique ID#. The unit will respond to commands associated with its ID# while all other units will disregard these commands.

1. Slide the Command reverse unit switch on your Subway to the PROG position. See Figure 3 on page 12.
2. Place the Subway on the track.
3. Connect the Command Base and plug it in.
4. Power up the track.
5. Press **ENG**.
6. Enter the unique ID#. Choose any number from 1 to 99 that has not been assigned to another locomotive (**ENG**). We recommend using a part of your Subway's cab number.
7. Press **SET**. The Subway's horn will sound, if the RailSounds sound system is on.
8. Slide the Command reverse unit switch back to the RUN position.

The Subway's ID# has been set. Be sure to record the new ID# for your reference.

## **Reprogramming your Subway to restore features**

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**I**f your Subway is unresponsive to your commands in the TrainMaster Command Control environment, we recommend that you follow this procedure to reset your Subway. All factory default settings will be restored when you reprogram the Subway.

1. Slide the Command reverse unit switch to the PROG position.
2. Plug in and connect your Command Base.
3. Place your Subway on the track, then power up the track.
4. Press **ENG** and enter the Subway's ID#.
5. Press **SET**.
6. Press **ENG** and enter the Subway's ID# again.
7. Press **AUX1**.
8. Enter **2** for this particular locomotive.
9. Turn off track power and wait ten seconds.
10. Slide the Command reverse unit switch back to the RUN position.

At this point, your Subway has been reset. Restore power to the track and operate the Subway as usual. Be sure to use the ID# entered in Step 4.



# ***Conventional transformer operations***

## **Operating your Subway in the conventional environment**

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**Y**our Subway is capable of operating in the conventional environment with nothing more than a standard Lionel alternating-current (AC) transformer.

- 1. Place your Subway on Lionel or Lionel-compatible 0-36 or larger track.**
- 2. Power your Subway at 12-18 volts with your alternating current (AC) transformer.**

**Caution!** Power your Subway with an alternating-current (AC) transformer only. Powering your Subway with a direct-current (DC) transformer, or in excess of 19 volts AC, may result in damage to sensitive electronic components. 60 HZ AC is required. **Do not power with 50 HZ AC.**

- 3. Wait three to eight seconds as your Subway determines whether it is in a conventional environment or a TrainMaster Command Control environment.**

When the Subway has determined that a TrainMaster Command Base is not connected to the track, the LEGACY RailSounds sound system will start. You are ready for operation in the conventional environment.

- 4. Move 'em out!**

Press the **DIRECTION** button on your transformer to sequence your Subway through the repeating pattern of operations: forward, neutral, reverse, neutral, and so on. You may also briefly turn off track power to advance the Subway to the next operating state. Adjust the throttle until your Subway moves at your desired speed.

**Note!** When placing your Subway on your layout for the first time, it will start out in neutral. Thereafter, it will start in forward after every power interruption lasting five seconds or longer.

Use the **HORN** button on your transformer to sound the horn. Refer to page 25 if your transformer is not equipped with these buttons. Adjust the volume using the volume control knob located under the hatch on the roof of the powered unit. Refer to Figure 3 on page 12.

**We recommend that you operate your LEGACY Subway with The Odyssey II Speed Control System turned on.** You may choose to operate your Subway without speed control by placing the Odyssey II Speed Control System switch to the OFF position. See Figure 3 on page 12.

# ***Conventional transformer operations***

## **Locking your Subway into a single direction**

---

**W**hen the Command reverse unit switch is in the RUN position, your Subway sequences through a repeating pattern of operations: forward, neutral, reverse, neutral, and so on.

To “lock” your Subway into a single direction (for example, to operate in forward only), you can deactivate the Command reverse unit’s sequencing function.

1. Use your transformer’s **DIRECTION** button or interruptions in track power to get your Subway moving in the desired direction or into neutral.
2. Slow the Subway down without stopping (reduce the throttle without turning off track power).
3. Slide the Command reverse unit switch to the PROG position. At this point, the Subway is “locked” into your chosen direction. See Figure 3 on page 12 for the location of this switch.

To restore the forward-neutral-reverse sequence, just slide the Command reverse unit switch back to the RUN position.

## **Operating the car doors in the conventional environment**

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To open the doors in the conventional environment, use the bell button on your transformer. A short bell will open the doors on the left side of the car. A second bell will close the doors. To open the doors on the right hand side of the cars, you will need to lock out the left hand doors using the switches under the roof hatch.

A long bell (2 to 3 seconds) will open the door and additionally trigger the station announcement. A second bell will close them. See pages 24 on how to advance the station announcements.

**Note!** Moving a door switch will lock the doors into their current position, either open or closed.

For proper operation, the doors require a voltage range of 8 to 18 volts (AC).

# ***Odyssey II Speed Control system operations***

## **Odyssey II Speed Control system operations**

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**T**he Odyssey II Speed Control system is “cruise control” for your Subway. Once the speed control is set, your Subway will maintain a constant speed, no matter what load is placed on the Subway or what grades you have on your layout. The Odyssey II Speed Control system also allows for extremely slow movement that will amaze any scale enthusiast.

## **Odyssey II Speed Control System LEGACY Control operation**

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**I**n LEGACY Control System CAB-2 mode, Odyssey II Speed Control system provides 0-199 speed steps. For a more in depth explanation of the LEGACY Control System features, please see your LEGACY Control System operations manual.

## **Odyssey II Speed Control system TrainMaster Command Control operation**

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**W**hen Odyssey II Speed Control system is activated, changes in the speed of the locomotive will correspond to each signal from the Command Base. For example, when you address the locomotive and slowly turn the throttle knob, the first flash of the red light on the Command Base corresponds to the first speed step, which is the slowest speed of the locomotive. The Subway will maintain that speed until you increase or decrease the throttle.

In TrainMaster Command Control CAB-1 mode, Odyssey II Speed Control System now provides selectable resolution and momentum. L=32 speed steps, M= 100 speed steps, and H= 100 speed steps with momentum. See page 14.

## **Odyssey II Speed Control system conventional transformer operation**

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**T**he Odyssey II Speed Control system is automatically operational when you operate your Subway in conventional (non-Command Control) mode, as long as the Odyssey II Speed Control system switch is in the ODY position (see Figure 3 on page 12). This means that your Subway will maintain a constant speed, compensating for grades, loads, and turns. Simply use your transformer's throttle to adjust the speed of your Subway.

**Caution!** In conventional operation, the lights in the locomotive are connected directly to track power. Do not exceed 14-16 volts for extended periods. Doing so will reduce the life of your lamps.

**Note!** Because of the way that speed control operates in conventional mode, you will notice a slight delay between adjusting your transformer throttle and the change in the speed of your Subway. If you desire instantaneous response to throttle changes, turn off the Odyssey II Speed Control system using the Odyssey switch under the hatch on the powered unit.

**Note!** Your Subway has a different “Speed Profile” than your LEGACY steam or diesel road engines for more prototypical operation. It is not meant to “Lash-Up” to another locomotive.

# ***LEGACY RailSounds sound system operations***

## **LEGACY RailSounds sound system operations**

---

**Y**our Subway is equipped with the Lionel LEGACY RailSounds sound system, the most realistic model railroad sound system in the world. The LEGACY RailSounds sound system brings the sounds of the railroad to your layout through high quality sound recordings of real locomotives.

When you operate your Subway in the conventional environment. You can sound the horn. When you are through with operations and power down the track, your Subway's LEGACY RailSounds sound system starts a realistic shutdown sequence.

When you operate your Subway in the TrainMaster Command Control environment, you gain additional control of the LEGACY RailSounds sound system, including the horn and buzzer sounds. Use the **BRAKE** button, and listen for the sound of squealing metal. You can also trigger announcements. Whenever you choose to shutdown your Subway, the realistic shutdown sequence commences (a nine-volt battery is required for the operation of the LEGACY RailSounds sound system when the track is powered down).

Operating your locomotive with the LEGACY Control system provides you control of all the features mentioned as well as greater control of the horn sound.

# ***LEGACY RailSounds sound system operations***

## **Station Announcements**

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**T**he Lionel R27 Subway provides Station announcements that you would hear when traveling this subway line from Coney Island to Astoria. RailSounds keeps track of each station as the subway proceeds along the line. Once it reaches the end of the line you can change direction and head back to Coney island and the stops will be announced in reverse order. If you decide to stop in the middle of the route and head in the other direction, Station announcements will continue from the turn around point with the next appropriate station.

The Stations along the route are:

- **Stillwell Ave Coney Island**
- **West 8th St**
- **Ocean Parkway**
- **Brighton Beach**
- **Sheepshead Bay**
- **Neck Road**
- **King's Highway**
- **Avenue M**
- **Newkirk Ave**
- **Cortelyou Road**
- **Church Ave**
- **Parkside Ave**
- **Prospect Park**
- **7th Ave**
- **Atlantic Ave**
- **Dekalb Ave**
- **Lawrence Street**
- **Court Street**
- **Whitehall, Manhattan**
- **Cortlandt St.**
- **City Hall**
- **Canal Street**
- **14 Street, Union Square**
- **23rd Street Lionel Trains Headquarters at 15 East 26th St.**
- **28th Street**
- **34th Street**
- **Times Square**
- **49th Street**
- **57th Street**
- **5th Avenue**
- **Lexington Ave**
- **Queensboro Plaza**
- **39th Ave, Beebee Ave**
- **Astoria Blvd, Hoyt Ave**
- **Astoria DITMARS Blvd**

# ***LEGACY RailSounds sound system operations***

## **Installing the battery**

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In the LEGACY and TMCC environments the RailSounds sound system is powered through the track. Having the battery installed will prevent any possible interruptions when going over a switch or a dirty section of track. It will also allow the shutdown sequence to play after track power has been switched off.

One of the special features of this Subway set are the consecutive station announcements. In the Conventional environment, these announcements are triggered in part by using the direction button to interrupt track power. It is necessary to have the battery installed in order to keep the announcements advancing properly. Without the battery installed, the subway will continue to announce the first station.

Follow these steps to install the battery.

1. Remove the body screws from the underside of the body. Refer to Figure 5 for the location of the screws.
2. Lift the body off the frame.
3. Remove the protective cover from the battery harness.
4. Snap the battery harness onto the nine-volt alkaline battery's terminals.
5. Slide the battery into place.
6. Replace the body on the frame and secure it with the body mounting screws. Be careful to avoid pinching wires between the body and the frame.

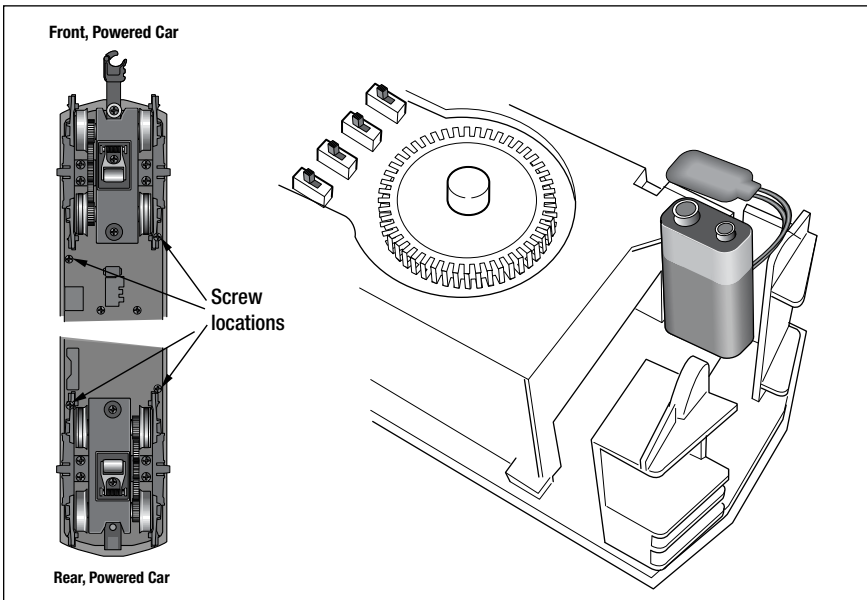


Figure 5. Installing the battery in the powered car

# ***LEGACY RailSounds sound system operations***

## **Using the LEGACY RailSounds sound system in the TrainMaster Command Control environment**

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**O**perating in the TrainMaster Command Control environment allows you access to many of the features of the LEGACY RailSounds sound system. The CAB-1 Remote Controller activates many features. Refer to pages 14 and 15 to learn how the LEGACY RailSounds sound system is integrated into TrainMaster Command Control operations.

In the TrainMaster Command Control environment, you will experience these features of the LEGACY RailSounds sound system.

- **Horn.**
- **Squealing brakes.** Press the **BRAKE** button and listen for the squealing of the locomotive's brakes as the locomotive slows down.
- **Station announcements.** The conductor will announce the direction of the Subway and the upcoming stops.
  - With the subway stopped and the doors closed, a push of the **2** key will trigger an announcement stating the name of the subway line and the direction of travel.
  - With the subway stopped and the doors open, a press to the **2** key will provide the name of the current station.
  - Pressing the **2** key when the subway is in motion will trigger a “next stop” announcement.Repeating this sequence will advance the announcement to the next station.
- **Signal Buzzer.** Used for communication between the conductor and motorman. The Signal Buzzer is sounded by pressing the **AUX1, 7** keys.
- **Reverse unit reset sound.** Power down your track, wait three seconds, and listen for the air-release sound—that's the Subway telling you that its Lionel Command reverse unit has reset to forward. (A nine-volt alkaline battery is required.)
- **Shutdown sequence.** When you turn off track power, you have two seconds to power up again after you hear the reverse unit reset sound. If you do not restore power, you will hear the realistic shutdown sequence. Because track power is off, a battery is required for this sequence to function.

# ***LEGACY RailSounds sound system operations***

## **Using the LEGACY RailSounds sound system in the conventional environment**

---

**W**hen you first power up your Subway, you will hear the sounds of the Subway's generator. In the conventional environment, the horn sound is activated by your transformer button.

To silence the background sounds, slide the LEGACY RailSounds sound system switch located under the hatch on top of the powered unit to the SIGNALSOUNDS position before you power up the locomotive or after the locomotive has been powered down for a minimum of ten seconds. The horn sound and station announcements will still be active. To adjust the volume, use the volume control knob located under the hatch.

In the conventional environment, you will experience several features of the LEGACY RailSounds sound system.

- **Horn.**
- **Station announcements.** When moving, pushing the bell button on your transformer triggers a "next stop" announcement. See page 19 for information on how to operate the doors in the conventional environment.
- **Note! Advancing the station announcements.**

You must have the battery installed for the station announcements to work.

To advance:

- Place the subway in motion.
- Press the direction button to stop.
- Press the bell button to open doors, (long bell).
- Press bell button again to close doors.
- Press the direction button **THREE** times to start the subway moving in the original direction.

Each repetition of this process will advance the station announcement to the next station.

- **Reverse unit reset sound.** Power down your track, wait three seconds, and listen for the air-release sound, which is the locomotive telling you that its Lionel Command reverse unit has reset to forward.
- **Shutdown sequence.** When you turn off track power, you have two seconds to power up again after you hear the reverse unit reset sound. If you do not restore power, you will hear the realistic shutdown sequence. Because track power is off, a battery is required for this sequence to function.



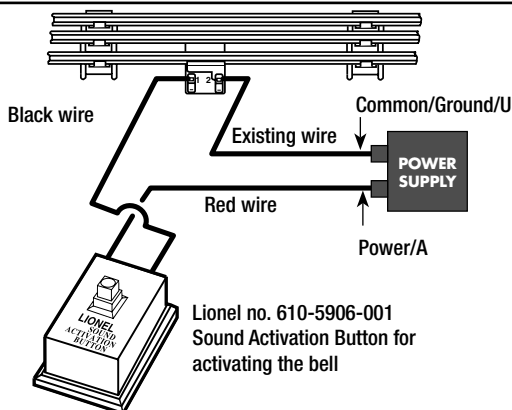
# LEGACY RailSounds sound system operations

## Installing a Lionel Sound Activation Button for conventional operation

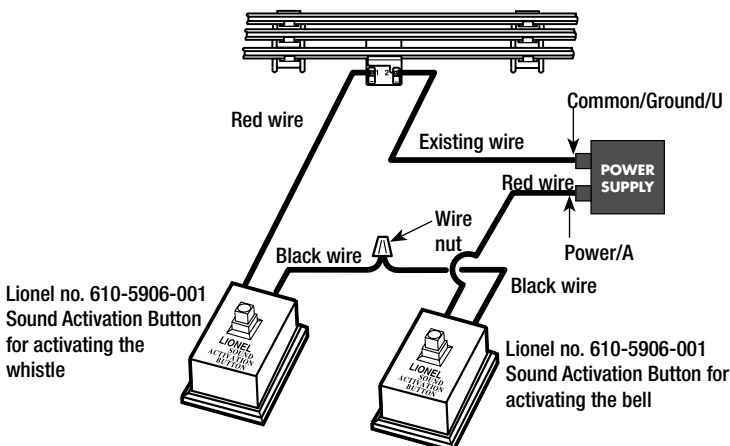
If your transformer lacks **WHISTLE** and **BELL** buttons, you will need to install Lionel no. 610-5906-001 Sound Activation Buttons (available separately) to activate the Subway's horn sounds.

Connect the buttons as shown below. Be sure that all track power passes through the Sound Activation Button(s). Do not bypass the buttons.

### For AC transformers lacking a bell button



### For AC transformers lacking bell and horn/whistle buttons



# Maintaining and servicing your locomotive

## Lubricating your Subway

**H**elp your Lionel Subway lead a long and productive life on your railroad by maintaining it properly. To keep your Subway lubricated, we recommend that you purchase a Lionel Lubrication and Maintenance Kit (6-62927), available from your authorized Lionel dealer.

When you find that the lubrication points illustrated in Figure 6 appear dry, lubricate your Subway after you have removed any accumulated dirt and dust. There are two basic rules to keep in mind when you are lubricating your Subway: use only a small amount of lubrication and avoid getting grease or oil on your Subway's wheels, roller pick-ups, or the track.

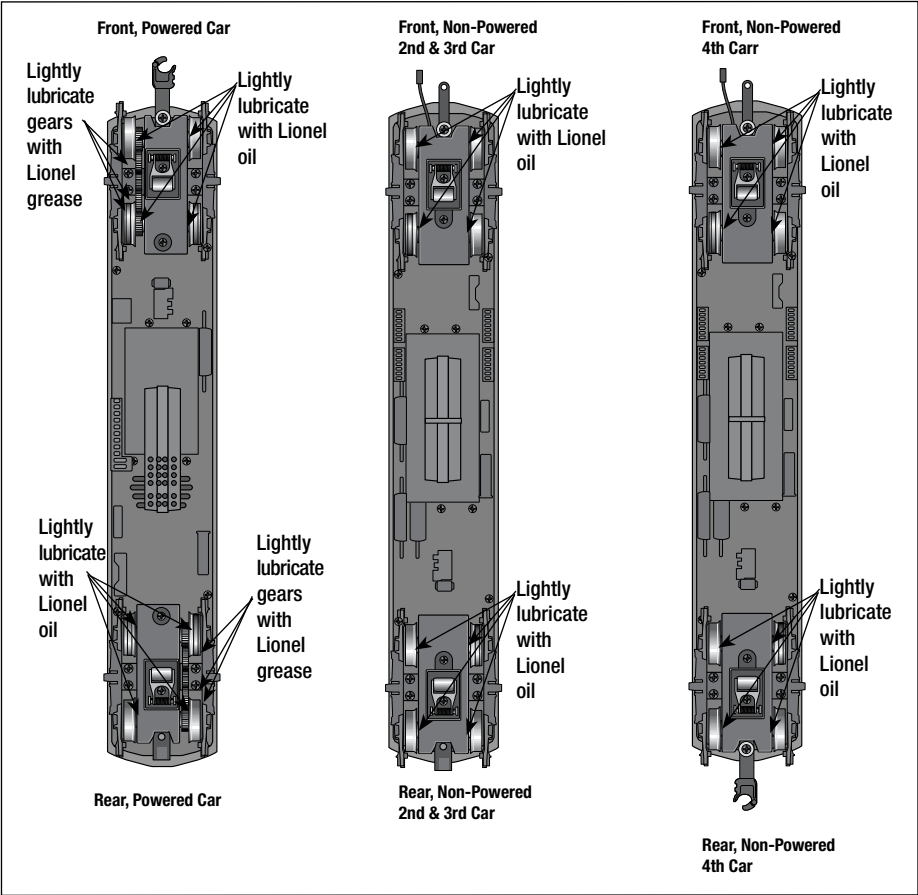


Figure 6. Lubrication points

# Maintaining and servicing your locomotive

## Servicing your Subway's lamps

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**M**any lights are used throughout the Subway cars to provide the prototypical lighting of an actual subway. Note that all lights on the ends and sides of the cars, (headlamps, marker lights, destination boards) are LEDs and are designed to last for the life of the product.

General internal lighting in the cars is provided by two types of incandescent bulbs. Removing the screws as shown in Figure 5 on page 22 will allow access to the interior of the cars. Due to the complexity of the disassembly required, we recommend that you take your Subway to your authorized Lionel Service Center for any lamp replacement.

Lamp Numbers:

Powered unit lighting, six assemblies (two lamps each)	630-1751-300
Non-powered unit lighting (four required in each car)	610-8049-300

## Tire-Traction

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**Y**our Subway is equipped with traction tires. This means that two of the drive wheels on each truck on the powered unit are fitted with rubber traction tires to enhance tractive effort.

The traction tires can easily be replaced by removing the two screws that hold the truck side. Remove the truck side, slide the old tire off the wheel and slip the new tire into place. Replace the truck side and replace the two screws.

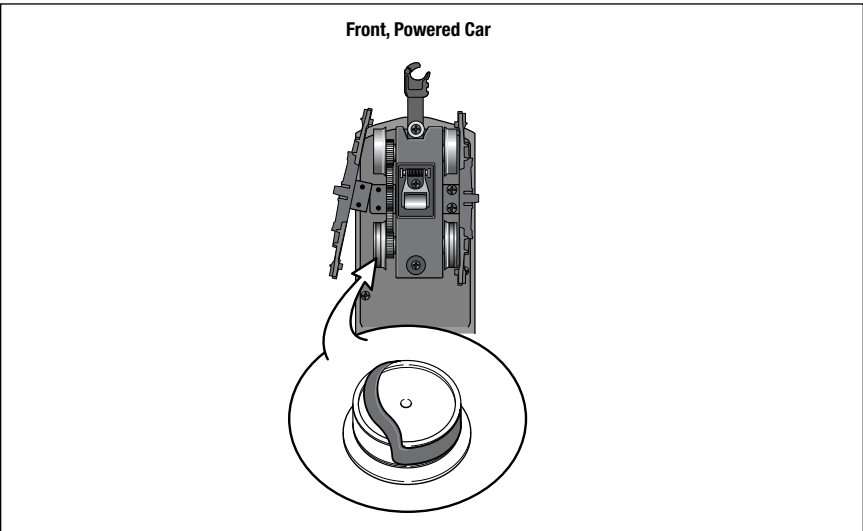


Figure 7. Traction tires

## Lionel Limited Warranty Policy & Service

**T**his Lionel product, including all mechanical and electrical components, moving parts, motors and structural components, with the exception of LIGHT BULBS & LED's are warranted to the original owner-purchaser for a period of **one year from the original date of purchase** against original defects in materials or workmanship when purchased through a **Lionel Authorized Retailer\***.

This warranty does **NOT** cover the following: Normal wear and tear, Light bulbs or LED's, Defects appearing in the course of commercial use, or Damage resulting from abuse/misuse of the product.

Transfer of this product by the original owner-purchaser to another person voids this warranty in its entirety. Modification of this product in any way; visually mechanically or electronically, voids the warranty in its entirety.

Any warranted product which is defective in original materials or workmanship and is delivered by the *original owner-purchaser* (this warranty is non-transferrable) to Lionel LLC or any Lionel Authorized Service Station **MUST** be accompanied by the original receipt for purchase (or copy) from an **Lionel Authorized Retailer\***, will at the discretion of Lionel LLC, be repaired or replaced, without charge for parts or labor. In the event the defective product cannot be repaired, and a suitable replacement is not available, Lionel will offer to replace the product with a comparable model (**determined by Lionel LLC**), if available. In the event a comparable model is not available the customer will be refunded the original purchase price (requires proof of purchase from the **Lionel Authorized Retailer\*** it was originally purchased). Any products on which warranty service is sought must be sent freight or postage prepaid (Lionel will refuse any package when postage is due). **Transportation and shipping charges are not covered as part of this warranty.**

**NOTE: Products that require service that do not have a receipt from an LIONEL AUTHORIZED RETAILER\* will be required to pay for all parts required to repair the product (labor will not incur a charge) providing the product is not older than 5 years from date of manufacture and is within 1 year from date of purchase. A copy of the original sales receipt is required.**

***In no event shall Lionel LLC be held liable for incidental or consequential damages.***

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply to you.

This warranty gives you specific legal rights and you may have other rights which vary from state to state.

### Instructions for Obtaining Service

If service for this Lionel LLC product is required; bring the item, along with your DATED sales receipt and completed warranty information (at the bottom of this page) to the nearest Lionel Authorized Service Station. Your nearest Lionel Service Station can be found by calling 1-800-4-LIONEL or by accessing the website at [www.lionel.com](http://www.lionel.com).

If you prefer to send your Lionel product directly to Lionel, for repair you must FIRST call 586-949-4100 extension 9105 or FAX Lionel at 586-949-5429 or write to Customer Service, 50625 Richard W. Blvd, Chesterfield, MI 48051-2493. Please have the 6-digit Lionel product number, the date of original purchase, the dealer where the item was purchased and what seems to be the problem. You will receive a Verbal return authorization (RA) number to ensure your merchandise will be properly tracked and handled upon receipt at Lionel LLC.

Once you have your Return Authorization (RA) number, make sure the item is packed in its original Styrofoam inner container which is placed inside the original outer display box (this will help prevent damage during shipping and handling). This shipment MUST be prepaid and we recommend that it be insured with the carrier of your choice.

Please make sure you have followed all of the above instructions carefully before returning any merchandise for service. You may choose to have your product repaired by one of Lionel LLC's Authorized Service Stations after its warranty has expired. A reasonable service fee should be expected once the product warranty has expired.

### Warranty Information

Please complete the information below and keep it, along with your **DATED ORIGINAL SALES RECEIPT**. You MUST present this form **AND** your **DATED SALES RECEIPT** when requesting warranty service.

\*A complete listing of Lionel Authorized retailers can be found by calling 1-800-4-LIONEL or by visiting our website at [www.lionel.com](http://www.lionel.com).

*Products that are more than 5 years old, from date of manufacture, are not applicable for warranty coverage, even if they have never been sold prior to this date. (Under no circumstance shall any components or labor be provided free of charge.)*

Name \_\_\_\_\_

Address \_\_\_\_\_

Place of Purchase \_\_\_\_\_

Date of Purchase \_\_\_\_\_

Product Number \_\_\_\_\_

Product Description \_\_\_\_\_



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