Canadian National Coal Train Set Owner’s Manual
Congratulations!

Congratulations on your purchase of the Lionel Canadian National Coal Train Set. This set includes a sophisticated SD70M-2 diesel locomotive that features numerous prototypical details and expert decoration in your favorite livery. Inside the body, this locomotive is equipped with some of the most advanced sounds and controls in model railroading. This locomotive pulls a long coal drag that consists of six bathtub gondolas.

Features of the locomotive

- 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
- LEGACY RailSounds sound system with intelligible CrewTalk dialog and TowerCom announcements, each with different scenarios depending on whether the locomotive is in motion or stopped
- Odyssey II Speed Control with ON/OFF switch
- Directional lighting including operating LED headlights
- Two ElectroCouplers
- Dual powerful maintenance-free motors with momentum flywheels
- Four traction tires
- Fan-driven smoke unit
- Ground lights
- Lighted number boards
- Lighted cab interior
- Minimum curve: 0-36

Features of the bathtub gondolas

- Dual rotary couplers (front car only)
- Single rotary couplers
- Operating End-of-Train Device (rear car only)

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Quick Start

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

LEGACY Control operations

For the finest operating experience, your locomotive 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.

1. Turn off track power and plug in the LEGACY Base.
2. Place your locomotive on Lionel or Lionel-compatible O-36 or larger track.
3. Increase track power voltage to full power (no more than 19 volts AC).
4. Press ENG and 1 to address your locomotive with your LEGACY CAB-2 Remote Controller.
5. Throttle up and move ‘em out.

TrainMaster Command Control operations

To operate your locomotive 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 locomotive on Lionel or Lionel-compatible O-36 or larger track.
3. Increase track voltage to full power (no more than 19 volts AC).
4. Press ENG and 1 to address your locomotive with your CAB-1 Remote Controller.
5. Throttle up and move ‘em out.

Transformer operations

1. Place your locomotive on Lionel or Lionel-compatible O-36 or larger track.
2. Power your locomotive at 12-18 volts with your alternating current (AC) transformer.
3. Wait three to eight seconds until the locomotive’s headlight illuminates 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**

Get 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/option 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

The 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
**LEGACY Control System operations—overview**

**THE MULTI-CONTROLLER**

*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

*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
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
Warning 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 Official Rail Road Speeds*

The Speed Bar is used to select a new touch-screen Icon Control set. This set of touch-screen keys is used to select official Railroad 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 RR Speed icons one by one. Experiment.
18. The speed of the engine changes with each press and release of a different RR Speed key.
19. TowerCom dialog occurs each time you press and hold a RR speed key.
20. The Engineer dialog responds and the speed of the engine changes as soon as you release the RR speed key.
21. If you touch a RR speed key and release it quickly, a speed change is enabled with no dialog scene.
22. You can also use the Velocity Throttle and other action controls in this mode and continue to use Official RR speeds at the same time.
23. Repeat step 17.
24. Press AUX-1 to leave the RR speed mode and return to the standard mode and return to the standard control panel.
25. Press the speed bar to toggle between the Official RR Speed Control Panel and the Standard Control Panel.

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.
LEGACY Control System operations—overview

GROUND LIGHT CONTROL

Your locomotive is equipped with functional Ground Lights. There is one Ground Light located on each side of the frame, near the center of the front truck. Prototypically, it is difficult to determine when a diesel locomotive is moving at very slow speeds in extreme low light, or darkness. When operating the locomotive under these conditions, the Ground Lights provide the engineer and fireman with a visual reference to the ground and allow them to more accurately judge the motion of the locomotive.

AUTO MODE is the default operation of the Ground Lights. In AUTO MODE, the Ground Lights are ON when the locomotive is stopped and they remain ON when the locomotive is in motion through speed step 24. At speed step 25 and above, the Ground Lights are OFF. When the locomotive slows to speed step 24, the Ground Lights will turn ON. In the Legacy environment, you may activate the Ground Lights when the locomotive is in motion at speed step 25 and above using the icon shown below to turn the Ground Lights ON. When the locomotive comes to a stop by either throttling down or by pressing the DIRECTION button, the Ground Lights will default to AUTO MODE. You may also set the Ground Lights so that they will remain OFF when the locomotive is stopped or in motion by using the icon shown below to turn the Ground Lights OFF. When the Ground lights are set to OFF, The AUTO MODE is de-activated.

**Note!** For optimal effect of the functional Ground Lights, operate your locomotive in low light conditions.
**Locomotive switch function overview**

**Switch overview**

**Command Reverse Unit Switch**
Used to assign an ID# and reprogram the locomotive in LEGACY and Command operation when the switch is in the “PGM” position. Also used to “lock” your locomotive in a single direction, or neutral, in conventional operation when the switch is placed in the “PGM” position. See pages 21, 22, 23, and 26.

**Smoke Unit Switch**
Used to turn the smoke unit function “on” and “off”. See page 37.

**LEGACY RailSounds Sound System Switch**
Used to select RailSounds (RS) or SignalSounds (SS). In the RailSounds position, all sounds are provided. In the SignalSounds position, only the Horn and Bell are heard. See page 30.

**Odyssey II Speed Control System Switch**
Used to turn the Odyssey II Speed Control System “on” and “off”. See pages 25, and 27.

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**Note!** Carefully lift up and remove the radiator vent to access the switches.

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**Figure 1. Switch locations**
TrainMaster Command Control operations

In addition to your transformer, to operate your locomotive 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.

Keep in mind that track power is like gasoline in the tank of a car—it gives you the power to go places, but it doesn’t tell you where to go or how fast to get there.

Ground lights

Your locomotive is equipped with functional Ground Lights. There is one Ground Light located on each side of the frame, near the center of the front truck. Prototypically, it is difficult to determine when a diesel locomotive is moving at very slow speeds in extreme low light, or darkness. When operating the locomotive under these conditions, the Ground Lights provide the engineer and fireman with a visual reference to the ground and allow them to more accurately judge the motion of the locomotive.

The Ground Lights function automatically and are not user controlled. With the Momentum set to “L”, the Ground Lights are ON when the locomotive is stopped and they remain ON when the locomotive is in motion through speed step 4. At speed step 5 and above, the Ground Lights are OFF. When the locomotive slows to speed step 4, the Ground Lights will turn ON.

With the Momentum set to “M” or “H”, the Ground Lights are ON when the locomotive is stopped and they remain ON when the locomotive is in motion through speed step 12. At speed step 13 and above, the Ground Lights are OFF. When the locomotive slows to speed step 12, the Ground Lights will turn ON.

Note! For optimal effect of the functional Ground Lights, operate your locomotive in low light conditions.
TrainMaster Command Control operations

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 locomotive on Lionel or Lionel-compatible O-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.

   Caution! Power your locomotive with an alternating-current (AC) transformer only. Powering your locomotive 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 locomotive with your CAB-1 Remote Controller. All Lionel locomotives come factory-programmed as ID# 1. To change the ID#, see page 21.

5. Throttle up and move 'em out! Your locomotive will respond to every command from your CAB-1 Remote Controller.
TrainMaster Command Control operations

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

Releases the front coupler. **Coupler release sound.**

Releases the rear coupler. **Coupler release sound.**

Activates the numeric keypad. **Air release sound.**

Toggles all directional lighting on and off.

Toggles the interior cab light on and off when the locomotive is either stopped or in motion.

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

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

Activates the locomotive’s horn. Release the button to discontinue the sound. **Multihorn diesel born sound.**

Toggles the bell sound on and off. **Mechanical bell sound.**

Changes the locomotive’s direction. The locomotive decelerates to a stop and continues in the opposite direction when you increase the throttle. **Air release sound.**

Increases the locomotive’s speed while the button is pressed. Release the button to return to the initial speed.

Decreases the locomotive’s speed while the button is pressed. **Squealing brake sounds.**
TrainMaster Command Control operations

CAB-1 Remote Controller numeric keypad commands

When you press the AUX1 button on your CAB-1 Remote Controller, you turn the numeric keypad into ten command buttons. These commands are specific to your locomotive, and an overlay is included to help you learn these functions. After you press the AUX1 button, you will be able to press any numbered button until you address a different Command Control equipped product. The corresponding LEGACY RailSounds sound system effects are in bold italic type.

8 Stops and resets the locomotive. Resets the locomotive's direction to forward. **Horn blows. RPM sounds return to automatic.**

1 Raises the volume of the LEGACY RailSounds sound system background sounds, such as RPM sounds and let-off sounds. The horn, bell and dialog are unaffected. The default is full volume. The volume setting is retained when track power is turned off. **Sound volume increases.**

Engineer begins radio dialog, dispatcher replies (see pages 34 and 35). **CrewTalk communication.**

5 Enters manual RPM mode and increases the RailSounds sound system RPM level (see page 19). If the LEGACY RailSounds sound system is shut down (see 5 key below), AUX1, 3 activates a full LEGACY RailSounds sound system start-up while the locomotive is stopped after pressing AUX1, 5 with track power on.

7 Lowers the volume of the LEGACY RailSounds sound system background sounds, such as RPM sounds and let-off sounds. The horn, bell, 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. Activates the emergency stop feature while in motion. Note that in the shutdown sequence, the smoke unit does not turn off if it was already on. To turn off the smoke unit, press AUX1, 8 or use the smoke unit SMK/NO SMK switch.

2 Enters manual RPM mode and lowers the LEGACY RailSounds diesel motor RPM level (see page 19).

6 Dispatcher begins radio dialog, engineer replies (see pages 34 and 35). **TowerCom announcement.**

9 Turns off the smoke unit. **Air release sound.**

6 Turns on the smoke unit if the smoke unit switch is in the SMK position. Be sure to add smoke fluid before turning on the smoke unit to prevent damage to your locomotive. **Steam generator blow-off sound.**

**Note!** AUX1, 8 and 9 function only if the locomotive's smoke unit switch is in the SMK position. Sounds will be active in both switch positions.
The 3, 5, and 6 keys on your CAB-1 can perform several different functions when controlling your locomotive. These functions include:

- Starting up and shutting down the engine sounds.
- Controlling the engine RPM sounds manually ("Manual RPM Mode").

If you press AUX1 immediately before you press the 3, 5 or 6 button, its function will be modified. The following table summarizes the functions of these CAB-1 Remote Controller buttons for your locomotive.

<table>
<thead>
<tr>
<th>Key Command</th>
<th>LEGACY RailSounds sound system</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>If the LEGACY RailSounds sound system is shut down, engine sounds start up. If the LEGACY RailSounds sound system is running, engine enters manual RPM mode and revs up RPM one level with each press.</td>
</tr>
<tr>
<td>AUX1, 3</td>
<td>(same as above)</td>
</tr>
<tr>
<td>5</td>
<td>If locomotive is stopped, engineer announces &quot;shut down,&quot; engine sounds turn off. If the locomotive is moving, the dispatcher instructs, “Go to restricted speed.”</td>
</tr>
<tr>
<td>AUX1, 5</td>
<td>If the locomotive is moving, the dispatcher instructs, “Emergency stop!”</td>
</tr>
<tr>
<td>6</td>
<td>If the locomotive is moving, engine enters manual RPM mode and revs down RPM one level with each press.</td>
</tr>
<tr>
<td>AUX1, 6</td>
<td>(same as above)</td>
</tr>
</tbody>
</table>
TrainMaster Command Control operations

Tuning your locomotive’s performance

TrainMaster Command Control allows you to fine-tune the performance of your locomotive. Use your CAB-1 Remote Controller to make these adjustments. See page 16.

Note! These settings will be lost if you assign a new ID#.

RPM RUN LEVEL

Your locomotive has eight levels of RPM sounds, corresponding to the eight run levels in a real diesel locomotive. The three ways in which you can control your locomotive’s RPM sounds are discussed below.

Automatic RPM Mode

In Automatic RPM Mode, your locomotive’s RPM run level is controlled by movements of the throttle on your CAB-1 Remote Controller. A small clockwise motion of the throttle knob will cause the RPM sounds to ramp up one run level, while a small counter-clockwise motion of the throttle knob will cause the RPM sounds to ramp down one run level.

While the locomotive is ramping between run levels, it will ignore additional throttle movements. Once the RPMs have finished ramping to the next run level, additional throttle motions will again trigger another RPM ramp. This feature will allow you to “fine-tune” your RPM run level, regardless of the locomotive’s speed, using only the throttle knob. This mode is the default setting for your locomotive on power up.

Manual RPM Mode

In Manual RPM Mode, you can set your locomotive’s RPM run level to a constant value by pressing the AUX1, 3 or AUX1, 6 key sequences on your CAB-1 Remote Controller. When your locomotive is in this mode, its RPM run level will not vary with throttle movements or with the speed of the locomotive.

To enter Manual RPM Mode, press the AUX1, 3 key sequence while the locomotive is stopped, or press either the AUX1, 3 or AUX1, 6 key sequence while the locomotive is moving. Pressing AUX1, 3 will cause your locomotive to enter Manual RPM Mode and ramp up one RPM run level; pressing AUX1, 6 will cause your locomotive to enter Manual RPM Mode and ramp down one RPM run level. You may then press the 3 or 6 key additional times to ramp your locomotive’s RPMs through all the run levels. Once you set your locomotive’s RPM run level it will remain there until you change it with the 3 or 6 keys, or until you exit Manual RPM Mode.

You may cause your locomotive to exit Manual RPM Mode in several ways: reset the locomotive with AUX1, 0 key sequence; enter the shutdown sequence with the AUX1, 5 key sequence; or turn off the track power and allow the locomotive to reset.

Speed RPM Mode

In Speed RPM Mode, your locomotive’s RPM run level is controlled only by the actual speed of the locomotive.
**TrainMaster Command Control operations**

**Tuning your locomotive’s performance (continued)**

**Speed RPM Mode (continued)**

To enter Speed RPM Mode, press the **AUX1, BRAKE** key sequence while the locomotive is stopped. A distinctive “clunk” sound will be heard. Once your locomotive is in Speed RPM Mode, the RPMs will ramp up and down through its eight run levels depending on how fast the locomotive is moving on the track. (Note that this is how your locomotive’s RPMs are controlled when it is running in Conventional Mode.)

To exit Speed RPM mode, reset the locomotive with **AUX1, 0** key sequence or turn off the track power and allow the locomotive to reset.

**ADJUSTING THE SPEED**

The **BRAKE** and **BOOST** buttons give you incremental control of your locomotive’s speed while you press and hold these buttons, allowing you to make small, gradual adjustments around curves and over grades. The locomotive will resume its initial speed when the buttons are released. Listen for the squeal of your locomotive’s brakes when you use the **BRAKE** button.

**SOUND LEVEL**

Press **AUX1, 1 or 4** on your CAB-1 Remote Controller to raise and lower the volume of the background locomotive sounds, such as RPMs and air release or let-offs. The horn, bell and dialog will be unaffected. Note that this setting is preserved through power down and system reset. Remember that the sounds will be silent when you power up your locomotive if the sounds were turned down previously. To set the maximum volume of both the background and foreground sounds, we recommend that you adjust your locomotive’s volume control knob (see Figure 3 on page 29 for the location).
Assigning your locomotive a new ID#

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

**Note!** To restore your locomotive’s functions, see page 23.

1. Slide the Command reverse unit switch on your locomotive to the PGM position.
2. Place the locomotive 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 locomotive’s cab number.
7. Press **SET**. The locomotive’s horn will sound if the RailSounds sound system is on and the headlights will flash.
8. Slide the Command reverse unit switch back to the RUN position.

The locomotive’s ID# has been set. Be sure to record the new ID# for your reference.
TrainMaster Command Control operations

Building a lash-up

TrainMaster Command Control allows you to couple your Command Control-equipped locomotives together, forming a multiple unit lash-up. Just like with the real railroads, lash-ups allow you to pull longer trains and climb steeper grades. You will find that the lighting operates prototypically—the lead unit’s headlight and interior lights are illuminated when the train is in forward, and the rear unit’s headlight and interior lights are on when the train is in reverse. For more information, refer to your TrainMaster Command Control manual.

To build a lash-up, assign a unique engine (ENG) ID# to each unit. Arrange the units on the track and couple them together. The Command reverse unit switch must be set to RUN. See Figure 1 on page 13.

Note! If you press a wrong button, start over with that particular unit. The assignment isn’t saved until you press SET.

Start with the lead (front) unit
1. Press TR and enter your lash-up ID# (1-9) on your CAB-1 Remote Controller. No other lash-up or track should share this ID#.
2. Enter the unique ID# of the lead unit.
3. Press F.
4. Press SET on the CAB-1 Remote Controller.

Add the middle units, one at a time
1. Press TR and enter the lash-up ID# (1-9) on your CAB-1 Remote Controller.
2. Enter the unique ID# of the middle unit.
3. Press the DIRECTION button if the unit is facing rearward.
4. Press SET on the CAB-1 Remote Controller.
5. Repeat these steps for any additional middle units.

Complete the lash-up by adding the rear unit
1. Press TR and enter the lash-up ID# (1-9) on your CAB-1 Remote Controller.
2. Enter the unique ID# of the rear unit.
3. Press R.
4. Press the DIRECTION button if the unit is facing rearward.
5. Press SET on the CAB-1 Remote Controller.

You are now ready to operate your locomotive as a lash-up. Simply press TR and enter the lash-up ID#, then use your CAB-1 Remote Controller to operate your locomotives. To operate an individual unit within the lash-up, press ENG and enter the ID# for that particular unit.
TrainMaster Command Control operations

Reprogramming your locomotive to restore features

If your locomotive is unresponsive to your commands in the TrainMaster Command Control environment, we recommend that you follow this procedure to reset your locomotive.

1. Slide the Command reverse unit switch to the PGM position.
2. Plug in and connect your Command Base.
3. Place your locomotive on the track, then power up the track.
4. Press ENG and enter the locomotive’s ID#.
5. Press SET.
6. Press ENG and enter the locomotive’s ID# again.
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 locomotive has been reset. Restore power to the track and operate the locomotive as usual. Be sure to use the ID# entered in Step 4.
Conventional transformer operations

Ground lights

Your locomotive is equipped with functional Ground Lights. There is one Ground Light located on each side of the frame, near the center of the front truck. Prototypically, it is difficult to determine when a diesel locomotive is moving at very slow speeds in extreme low light, or darkness. When operating the locomotive under these conditions, the Ground Lights provide the engineer and fireman with a visual reference to the ground and allow them to more accurately judge the motion of the locomotive.

The Ground Lights function automatically and are not user controlled. In Conventional transformer operation, the Ground Lights are ON when the locomotive is stopped and they remain ON as the locomotive starts to move. As the locomotive gains speed, the Ground Lights will turn OFF. As the speed of the locomotive slows, the Ground Lights will turn ON.

Note! For optimal effect of the functional Ground Lights, operate your locomotive in low light conditions.

Operating your locomotive in the conventional environment

Your locomotive is capable of operating in the conventional environment with nothing more than a standard Lionel alternating-current (AC) transformer.

In the conventional environment, your locomotive cycles through a repeating pattern of operations: forward, neutral, reverse, neutral, and so on. To advance to the next operation, press the DIRECTION button on your transformer. Alternately, you could use the throttle to briefly turn off track power so that the locomotive advances to the next operation when power is restored.

Once you cycle the locomotive into forward or reverse, you control your locomotive’s speed by varying track voltage with the transformer’s throttle. To increase the speed of the locomotive, you increase track voltage. To decrease the speed, you decrease track voltage. To stop the locomotive and to change directions (or to enter neutral), track voltage is turned off or interrupted.

Use the HORN and BELL buttons on your transformer to activate these features. If your transformer is not equipped with these controls, separate buttons are available (610-5906-001). Please refer to page 31 of this manual.
Conventional transformer operations

Operating your locomotive in the conventional environment (continued)

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

**Caution!** Power your locomotive with an alternating-current (AC) transformer only. Powering your locomotive 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 locomotive determines whether it is in a conventional environment or a TrainMaster Command Control environment.

When the locomotive has determined that a TrainMaster Command Base is not connected to the track, the locomotive’s headlight will illuminate and 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 locomotive through the repeating pattern of operations: forward, neutral, reverse, neutral, and so on. You may also briefly turn off track power to advance the locomotive to the next operating state. Adjust the throttle until your locomotive moves at your desired speed.

**Note!** When placing your locomotive 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.

We recommend that you operate your LEGACY diesel locomotive with The Odyssey II Speed Control System turned on. You may choose to operate your locomotive without speed control by placing the Odyssey II Speed Control System switch to the “NO ODY” position. See Figure 1 on page 13.

Use the HORN and BELL buttons on your transformer to activate those features. Refer to page 31 if your transformer is not equipped with those buttons. Adjust the volume using the volume control knob located under the rear radiator vent. Refer to Figure 3 on page 29.
Conventional transformer operations

Locking your locomotive into a single direction

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

To “lock” your locomotive 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 locomotive moving in the desired direction or into neutral.
2. Slow the locomotive down without stopping (reduce the throttle without turning off track power).
3. Slide the Command reverse unit switch to the PGM position. At this point, the locomotive is “locked” into your chosen direction. See Figure 1 on page 13 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.

Uncoupling your locomotive in the conventional environment

Your locomotive features two ElectroCouplers that are released by remote control at any point around your layout in the TrainMaster Command Control environment.

In the conventional environment, the ElectroCouplers will not open manually or by using a Remote-Control Track section. To couple your locomotive in the conventional environment, you must rely on a piece of rolling stock equipped with a magnetic coupler. Simply release the magnetic coupler and couple the rolling stock to the locomotive, even if the ElectroCoupler is closed.

Keep in mind that you may still make use of Lionel Remote-Control Track sections (6-65530 for O gauge; 6-12746 and 6-65149 for O-27 gauge; and 6-12020 and 6-12054 for FasTrack layouts) with the magnetic couplers on the rolling stock. Place the trigger disc on the magnetic coupler over the central coil on the Remote-Control Track section, then press UNCOUPLE on the track section’s controller. As illustrated in Figure 2, the magnetic field pulls the disc downward, releasing the coupler.

Figure 2. Magnetic coupler operation
**Odyssey II Speed Control system operations**

The Odyssey II Speed Control system is “cruise control” for your locomotive. Once the speed control is set, your locomotive will maintain a constant speed, no matter what load is placed on the locomotive 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**

In 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**

When 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 locomotive 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 16.

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

The Odyssey II Speed Control system is automatically operational when you operate your locomotive in conventional (non-Command Control) mode, as long as the Odyssey II Speed Control system switch is in the ODY position (see Figure 1 on page 13). This means that your locomotive will maintain a constant speed, compensating for grades, loads, and turns. Simply use your transformer’s throttle to adjust the speed of your locomotive.

**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 locomotive. If you desire instantaneous response to throttle changes, turn off the Odyssey II Speed Control system using the Odyssey switch on the bottom of the locomotive.
Your locomotive 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 locomotive in the conventional environment, you get the realistic sounds of the diesel motor, which automatically revs up as the speed of the locomotive increases. You can sound the locomotive’s horn or activate the ringing of the mechanical bell. CrewTalk dialog and TowerCom announcements are triggered with the horn button on your controller. When you are through with operations and power down the track, your locomotive’s LEGACY RailSounds sound system starts a realistic shutdown sequence (a nine-volt alkaline battery is required, see Figure 3 on page 29).

When you operate your locomotive in the TrainMaster Command Control environment, you get full control of the LEGACY RailSounds sound system. In addition to the horn and bell sounds, the locomotive’s RPM sounds automatically rev up, and you can also set a particular RPM level using your CAB-1 Remote Controller. In the Command Control environment, the release of the ElectroCouplers is accompanied by a coupler release sound. Use the BRAKE button, and listen for the sound of squealing brakes. You can also trigger CrewTalk dialog and TowerCom announcements, which simulate the interaction between the locomotive crew and the dispatcher. Whenever you choose to shutdown your locomotive, the realistic shutdown sequence commences. A nine-volt alkaline battery is required for the shutdown sequence, if track power is turned off. Refer to Figure 3 on page 29.

Operating your locomotive with the LEGACY Control system provides you control of all the features mentioned above as well as access to the new quilling horn and single hit bell sounds.
**LEGACY RailSounds sound system operations**

**Installing the battery**

While the LEGACY RailSounds sound system is powered through the track, we recommend that you install a nine-volt alkaline battery to prevent the sound system from shutting down during track power interruptions (for example, at a switch or a dirty section of track). Follow these steps and refer to Figure 3 as you install the battery.

**Note!** If the LEGACY RailSounds sound system turns off during interruptions in track power, you may need to replace the battery.

1. Carefully lift up and remove the rear radiator vent.
2. Remove the protective cover from the battery harness.
3. Snap the battery harness onto the nine-volt alkaline battery’s terminals.
4. Slide the battery into the battery clip.
5. Replace the rear radiator vent.

![Diagram](image_url)  
Figure 3. Battery installation and volume control knob location
LEGACY RailSounds sound system operations

Using the LEGACY RailSounds sound system in the conventional environment

When you first power up your locomotive, you will hear the sounds of the locomotive at rest. As the locomotive set moves, the RPM sounds automatically increase with the locomotive’s speed. In the conventional environment, the horn and bell sounds are activated by your transformer controls.

To silence the motor sounds, slide the LEGACY RailSounds sound system switch located on the underside of the locomotive to the SS (SignalSounds) position (see Figure 1 on page 13 for the location of this switch) before you power up the locomotive or after the locomotive has been powered down for a minimum of ten seconds. The horn and bell sounds will still be active. To adjust the volume, use the volume control knob located under the rear radiator vent. Refer to Figure 3 on page 29.

**Note!** When the LEGACY RailSounds sounds system switch is in the SS position, the CrewTalk dialog and TowerCom announcements are inactive.

**Note!** For proper operation of the LEGACY RailSounds sound system during track power interruptions and for the locomotive shutdown sequence, you must install a nine-volt alkaline battery. Refer to Figure 3 on page 29.

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

- **Eight levels of diesel motor RPM.** The level of diesel motor RPM automatically varies with your throttle adjustments.

- **MultiHorn.** A different horn sound at different speeds—a LEGACY RailSounds sound system exclusive.

- **Mechanical bell.** Press BELL on your transformer to begin the effect, then press BELL a second time to discontinue the effect.

- **CrewTalk dialog and TowerCom announcements.** CrewTalk dialog is triggered by your transformer’s HORN button. See page 32.

- **Reverse unit reset sound.** Power down your track, wait three seconds, and listen for the air-release sound—that’s the locomotive telling you that its Lionel Command reverse unit has reset to forward. Because the track is powered down, a nine-volt alkaline battery is required for this feature. Refer to Figure 3 on page 29.

- **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 diesel shutdown sequence. Because track power is off, a nine-volt battery is required for this sequence to function. Refer to Figure 3 on page 29.
LEGACY RailSounds sound system operations

Installing a Lionel Sound Activation Button for conventional operation

If your transformer lacks HORN and BELL buttons, you will need to install Lionel no. 610-5906-001 Sound Activation Buttons (available separately) to activate the locomotive’s horn and bell 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
LEGACY RailSounds sound system operations

Activating the CrewTalk dialog and TowerCom announcements in the conventional environment

In the conventional environment, CrewTalk dialog and TowerCom announcements are triggered by short horn blasts and vary with the state of the locomotive.

- If the locomotive has been stopped for less than 15 seconds, a short horn blast triggers a “please standby” dialog.
- If the locomotive has been stopped for longer than 15 seconds, a short horn blast triggers a “cleared outbound” dialog.
- If the locomotive is moving, a short horn blast triggers an “all clear ahead” dialog.
- If the locomotive is moving with the bell activated, a short horn blast triggers a “slow to caution” dialog.
LEGACY RailSounds sound system operations

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

To access the LEGACY RailSounds sound system features listed below, you must operate your locomotive in the TrainMaster Command Control environment. The CAB-1 Remote Controller/Command Base is required to activate these features. Refer to pages 14-23 to learn how the LEGACY RailSounds sound system is integrated into TrainMaster Command Control operations.

**Note!** For proper operation of the LEGACY RailSounds sound system during track power interruptions and for the locomotive shutdown sequence, you must install a nine-volt alkaline battery. Refer to Figure 3 on page 29.

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

- **Eight levels of diesel motor RPM.** Your CAB-1 Remote Controller throttle automatically determines the level of the diesel motor RPM. You may also set the RPM sounds to a particular level manually using your CAB-1 Remote Controller.
- **MultiHorn.** A different horn sound at different speeds—a LEGACY RailSounds sound system exclusive.
- **Mechanical bell.** Press BELL on your CAB-1 Remote Controller to begin the effect, then press BELL a second time to discontinue the effect.
- **Squealing brakes.** Press the BRAKE button and listen for the squealing of the locomotive’s brakes as the locomotive slows down.
- **Coupler release sounds.** Use your CAB-1 Remote Controller to release an ElectroCoupler, and you get the sounds of the coupler opening.
- **CrewTalk dialog and TowerCom announcements.** Use your CAB-1 Remote Controller to trigger conversations between the dispatcher and locomotive engineer. You’ll hear “hold for clearance,” “cleared for departure,” and many other exchanges. See pages 34 and 35.
- **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 diesel shutdown sequence. Because track power is off, a nine-volt alkaline battery is required for this sequence to function. Refer to Figure 3 on page 29. You may also trigger the shutdown sequence without powering down the track using the **AUX1, 5** command when the locomotive is stopped and the diesel RPM sounds are at their lowest level.
Activating the CrewTalk dialog and TowerCom announcements in the Command Control environment

With the LEGACY RailSounds sound system, CrewTalk dialog and TowerCom announcements feature a variety of brief radio conversations between the engineer and dispatcher. All dialog is intelligible, and each comment is followed by at least one automatic response.

CrewTalk dialog is an engineer-initiated radio conversation with the dispatcher. TowerCom announcements are a dispatcher-initiated radio conversation with the engineer. Be sure to listen for the different combinations of words and phrases that comprise these exchanges.

Refer to Table 1 below for the dialog commands. The dialog in the table provides examples of the conversations you can trigger. The actual phrasing will vary.

<table>
<thead>
<tr>
<th>Locomotive</th>
<th>Commands</th>
<th>Example dialog</th>
</tr>
</thead>
</table>
| Stopped    | AUX1, 2  | Crew: Can we go?  
             |          | Tower: No, please standby |
|            | AUX1, 7  | Tower: Stand by for clearance.  
             |          | Crew: Roger. |
|            | 2        | Crew: Can we go?  
             |          | Tower: Roger, you are clear. |
|            | 7        | Tower: You are clear for departure.  
             |          | Crew: Roger, we are clear. |
|            | AUX1, 5  | Crew: Signing off!  
             |          | Shutdown sequence |
|            | AUX1, 2* | Crew: Train is arriving.  
             |          | Tower: Roger, you are clear inbound. |
|            | AUX1, 7* | Tower: You are clear for arrival.  
             |          | Crew: Roger. |
| Moving     | 2        | Crew: Are we clear ahead?  
             |          | Tower: You are all clear. |
|            | 7        | Tower: You are all clear.  
             |          | Crew: Roger. |
|            | AUX1, 5  | Tower: Come to an immediate stop.  
             |          | Crew: We are stopping now. |
|            | 5        | Tower: Slow to caution speed.  
             |          | Crew: Roger, slowing now. |

* Activating either AUX1, 2 or AUX1, 7 while the locomotive is in motion enables a “train has now arrived” conversation for 15 seconds. If the train stops within this time, pressing 2 or 7 will play this special conversation.

Table 1. CAB-1 Remote Controller dialog commands
LEGACY RailSounds sound system operations

LEGACY RailSounds sound system dialog on a round trip

Refer to Figure 4 for a sample dialog script for the locomotive’s round trip.

**TOWER-INITIATED DIALOG**
The actual dialog will vary.

AUX1, 7 - “Stand by.”
7 - “You are clear.”

5 - “Slow to caution speed.”
AUX1, 5 - “Come to a full stop.”

7 - “Welcome back, stand by.”

7 - “All clear ahead.”
AUX1, 7 - “You are clear inbound.”

**ENGINEER-INITIATED DIALOG**
The actual dialog will vary.

AUX1, 2 - “Are we clear?”/”No, stand by.”
2 - “Can we go yet?”/”Yes, you are clear.”

2 - “Still clear ahead?”/
“Roger, you are clear.”

7 - “we have arrived and
we are standing by.”

AUX1, 2 - “We are arriving.”/
“OK, you are clear inbound.”

Figure 4. LEGACY RailSounds sound system dialog on a round trip
Help your Lionel locomotive lead a long and productive life on your railroad by maintaining it properly. To keep your locomotive 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 5 appear dry, lubricate your locomotive after you have removed any accumulated dirt and dust. There are two basic rules to keep in mind when you are lubricating your locomotive: use only a small amount of lubrication and avoid getting grease or oil on your locomotive’s wheels, roller pick-ups, or the track.

Figure 5. Underside details and lubrication points
**Maintaining and servicing your set**

**Adding fluid to your locomotive’s smoke generator**

Your locomotive is equipped with a smoke generator that produces a safe, clean, white smoke during operation. In order to function, the smoke generator requires the periodic addition of Lionel smoke fluid. A small bottle of smoke fluid is included with your locomotive.

To add smoke fluid, press down and unscrew the cap of the smoke fluid bottle. Pierce the tip of the nozzle with a pin. Then add 10 to 15 drops of fluid into the stack of your locomotive as illustrated in Figure 6. Power up your locomotive, and smoke production will start momentarily. Smoke production will start faster if you operate your locomotive at higher speeds. Smoke production is greatest at high voltages and when the locomotive pulls a heavy load. When smoke production decreases, add four to eight additional drops of smoke fluid.

If you prefer to operate your locomotive without smoke, locate the smoke unit switch on the underside of the locomotive and slide it to the NO SMK position. Refer to Figure 1 on page 13 for the location of this switch.

When the smoke unit switch is in the SMK position, always keep a small amount of smoke fluid in the smoke unit. Operating your locomotive’s smoke unit without smoke fluid will cause damage to the heating element.

**Caution!** Always operate your locomotive’s smoke unit with the addition of smoke fluid to prevent damage to the heating element.

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*Figure 6. Stack location*
Maintaining and servicing your set

Adjusting the smoke output

Your locomotive features an improved smoke unit with variable smoke output. In the TrainMaster Command Control environment, you may select low, medium, or high smoke output using your CAB-1 Remote Controller. Your locomotive is shipped from the factory in the medium smoke output setting.

To adjust the smoke output, bring the locomotive to a stop, press AUX1, AUX2, 9, then press L for low smoke, M for medium smoke, or H for high smoke. Press AUX2 again to complete the setting. See page 16 for the location of these buttons on the CAB-1 Remote Controller.

Your locomotive will remember its new setting until you change it again.

Note! It may take up to a minute for the smoke unit to heat up or cool down to the new setting.

Note! In the conventional environment, smoke output is always at the medium level. Smoke output is not variable in the conventional environment.

Note! Adjusting the variable smoke unit output using the L, M, or H buttons will also effect the locomotives speed step/momentum setting (see page 16). After changing the smoke unit output, simply reset the speed step/momentum to your preferred setting by pressing the L, M, or H button once again.

Replacing your locomotive’s LEDs and lamps

Your locomotive is illuminated by several LEDs and lamps. During the course of normal operations, they may require replacement.

We recommend that you have the LED and lamp replacement done at an authorized Lionel Service Center. See the Lionel Service section on page 40 for more information.

Replacing the traction tires

Your locomotive is equipped with traction tires (Lionel part no. 620-8815-206) to increase the tractive effort of your locomotive and allow it to pull more cars at once.

During the course of normal operations, the traction tires may become worn out. To replace the traction tires, remove the side frame screws from the underside of the trucks and lift away the side frame. Remove the worn tire, then slip the replacement around the wheel. Reposition the side frame on the truck and secure it with the two screws.
**Maintaining and servicing your set**

**Operating your bathtub gondolas**

For prototypical operation, the dual rotary coupler-equipped bathtub gondola should be the lead gondola. Following this car, position the single rotary coupler-equipped bathtub gondolas on the track with their rotary couplers towards the front of the train. Be sure that the flashing End-of-Train Device is at the rear of the train.

**Note!** Before dumping the cars in the Lionel Coal Tipple (6-32910), be sure that each rotary coupler is joined to a fixed coupler, except for the dual rotary coupler-equipped gondola.

Refer to Lionel Coal Tipple owner’s manual for information about operating your bathtub gondolas with that accessory.

**Caution!** Do not place other cars between the bathtub gondolas when using the Coal Tipple.

**Servicing the End-of-Train Device**

The flashing End-of-Train Device is illuminated by one LED. The LED is expected to last for the lifetime of the car and is not user serviceable. Visit your authorized Lionel Service Center or Lionel Service if service is required.
Lionel Limited Warranty Policy & Service

This 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-transferable) 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.

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.

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__________________________