



73-8017-250  
7/04  
Rev. 1



***Lionel  
2-6-0 Mogul  
Steam Locomotive and Tender  
Owner's Manual***

featuring

**TRAINmaster.**  
C-O-M-M-A-N-D

**RailSounds**<sup>TM</sup>

and

**DYDSEY**<sup>TM</sup>  
SYSTEM

# ***Congratulations!***

**Y**ou own one of the finest and most sophisticated model trains ever built—the Lionel TrainMaster Command Control and Odyssey System-equipped 2-6-0 Mogul steam locomotive. From its many hand-applied scale details, to the advanced technology found inside, your locomotive is ready for duty on your model railroad layout. Experience the superiority of today's Lionel.

## **Features of the 2-6-0 steam locomotive and tender**

---

- High-torque Pittman® motor
- Command reverse unit for use with the Lionel TrainMaster Command Control system
- Puffing, fan-driven smoke generator that produces clean, safe, white smoke in sync with the drivers
- Die-cast metal ElectroCoupler (rear of tender)
- Wireless Tether connection between locomotive and tender
- Odyssey System for speed control with ON/OFF switch
- Lighted cab interior
- RailSounds digital sound system with CrewTalk communication and TowerCom announcements (in Command)
- Brilliant headlight
- Illuminated classification lights
- Tire-Traction
- Flickering firebox
- Back-up light on tender

The following Lionel marks may be used throughout this instruction manual and are protected under law. All rights reserved.

*Lionel®*, *TrainMaster®*, *Odyssey®*, *RailSounds®*, *CrewTalk™*, *TowerCom™*, *DynaChuff™*, *StationSounds™*, *Pullmor®*, *ElectroCoupler™*, *Magne-Traction®*, *CAB-1® Remote Controller*, *PowerMaster®*, *Lionel ZW®*, *ZW®*, *PowerHouse®*, *TMCC®*, *Lionelville™*, *Lockon®*, *Wireless Tether™*, *LionMaster®*

*The name FasTrack® is used with permission from Pitsco, Inc.*

# ***Table of contents***

## ***Transformer operations***

Running your locomotive with a Lionel transformer	4
Locking your locomotive into a single operational state	5
Using your tender-mounted ElectroCoupler in the non-Command environment	6
Installing a Lionel Sound Activation Button	7

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

Your locomotive's RailSounds sound system—the basics	8
The RailSounds sound system in the Command environment	8-9
Experiencing the range of your locomotive's RailSounds sound system	10
Notes on the RailSounds sound system	10

## ***Odyssey System operations***

The Odyssey System	11
Odyssey System conventional (transformer) operation	11
Odyssey System Command operation	12

## ***TrainMaster Command operations***

The TrainMaster Command Control environment	13
Running your locomotive in the TrainMaster Command Control environment	14
CAB-1 Remote Controller commands for your locomotive	14
CAB-1 Remote Controller numeric keypad commands for your locomotive	15
Tuning your locomotive's performance	16
Assigning your locomotive a new ID#	17
Reprogramming the Command reverse unit to restore features	18

## ***Maintaining and servicing your locomotive***

Maintaining your locomotive's handrail antenna	19
Adding fluid to your locomotive's smoke generator	19
Lubricating your locomotive	20
Servicing your locomotive's lamps	21
Replacing your tender's lamp	22
Replacing the traction tires	23
Installing the O gauge front coupler	23
Limited Warranty/Lionel Service	24

# Transformer operations

## Running your locomotive with a Lionel transformer

---

**1**

***Place your locomotive on Lionel or Lionel-compatible 0-31 or larger track.***

**With track power OFF**, connect the drawbar between locomotive and tender as illustrated in Figure 1. That's all you have to do with the Lionel Wireless Tether, an infrared communication system that eliminates the plugs and wires of the past.

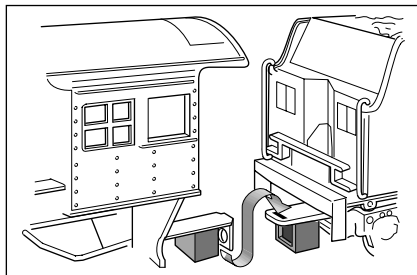


Figure 1. Drawbar connection

**2**

***Power up your locomotive with your transformer.***

**Your locomotive is designed to operate on 8-18 volts alternating current.** Virtually all Lionel and Lionel-compatible alternating-current transformers are suitable.

**Caution!**

**Do not power your locomotive with direct current (DC).** Damage to sensitive electronic components may occur.

**Note!**

**When you first power up your track, the locomotive will wait between three and eight seconds** as it “listens” for digital language from the TrainMaster Command Base (available separately). When the locomotive has determined that it's on a conventional (non-Command) railroad, the locomotive's headlight will illuminate and the RailSounds sound system will start. At this point, the locomotive is in neutral. (This occurs when placing the locomotive on your railroad for the first time. Thereafter, it will start in forward following every five-second power interruption.)

**To experience all of your locomotive's features**, we recommend using the TrainMaster Command Control system, available at your authorized Lionel dealer.

**3**

***Move 'em out!***

**Get your locomotive moving.** Press the DIRECTION button on your Lionel transformer. This sequences the Command reverse unit to the next operating state.

**Adjust track voltage** until your locomotive moves at your desired speed. To increase speed, increase track voltage. To decrease speed, reduce voltage. To stop the locomotive, turn-off track power.

**See page 5 for information on locking your locomotive in a single operational state.**

# Transformer operations

## Locking your locomotive into a single operational state

To select a single operational state for your Lionel locomotive (for example, forward only), you can deactivate the Command reverse unit's sequencing function with the Command reverse unit (PROG/RUN) switch.

Get your locomotive moving in the desired direction, then *slow it down without stopping*. Set the Command reverse unit switch to PROG. Refer to Figure 2 for the location of the switch. The locomotive is now “locked” into your chosen direction.

When you no longer want single-direction operation, just slide the Command reverse unit switch back to RUN.

**Note!** Your locomotive's reverse unit will “reset” to forward after any power interruption lasting five seconds or longer, regardless of the original locked-out direction.

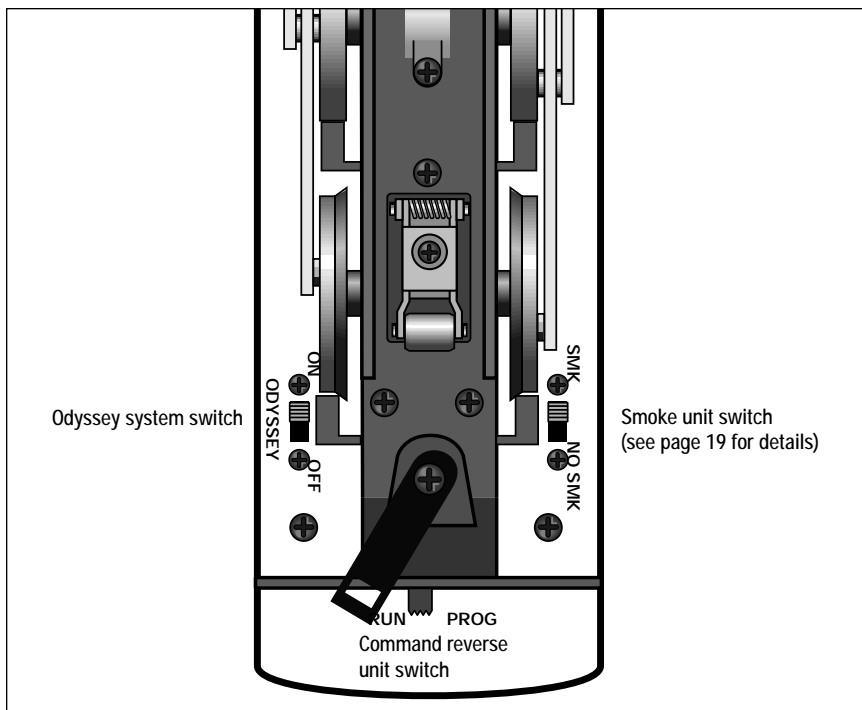


Figure 2. Switch locations

## Transformer operations

### Using your tender-mounted ElectroCoupler in the non-Command environment

---

**T**o uncouple rolling stock from your locomotive tender's ElectroCoupler in the non-Command environment, you must rely on a piece of rolling stock equipped with Lionel magnetic couplers coupled directly to your locomotive tender's ElectroCoupler. The magnetic coupler on the rolling stock will then react to the magnetic field generated by a Lionel Remote-Control Track section (available separately, 6-65530 for O gauge; 6-65149 or 6-12746 for O-27 gauge; or 6-12020 for FasTrack layouts). Place your rolling stock's coupler "trigger disc" over the central coil of a Remote-Control Track section and press UNCOUPLE on the controller. As illustrated in Figure 3, the magnetic field pulls the disc downward, and the coupler opens.

#### **Note!**

Your locomotive tender's ElectroCoupler will NOT open manually or by using a Remote-Control Track section.

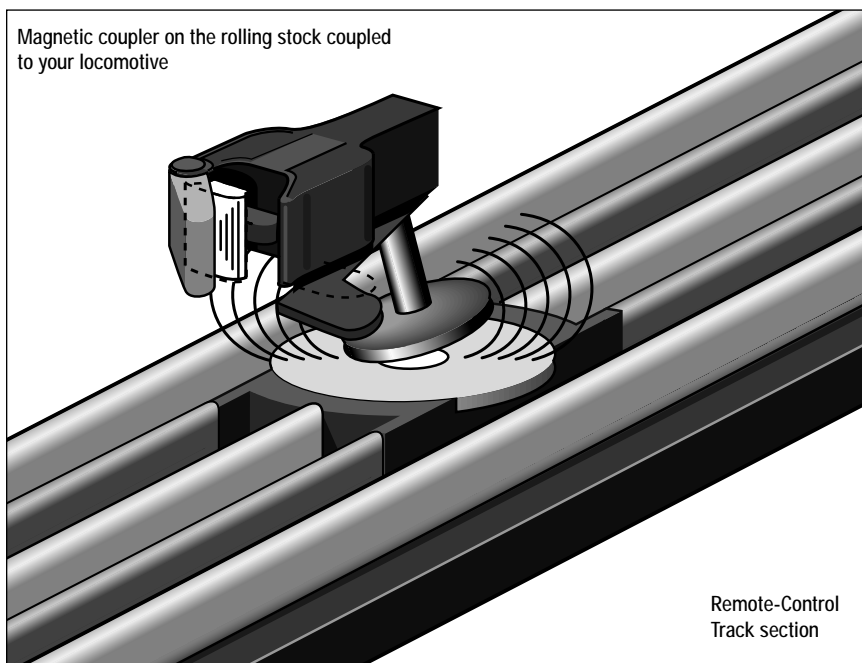


Figure 3. Trigger disc operation

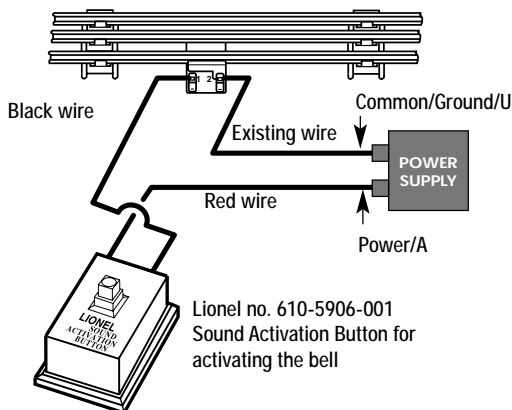
# Transformer operations

## Installing a Lionel Sound Activation Button

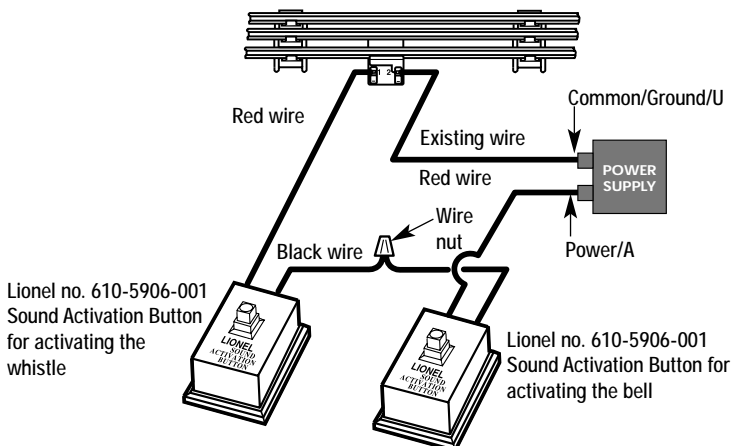
To activate the bell and whistle sounds when operating your locomotive set with conventional transformers, you may need to install Lionel no. 610-5906-001 Sound Activation Buttons (available separately) if your transformer is not equipped to activate these features. Connect the button(s) as shown below.

**Note!** All track power must feed through the Sound Activation Buttons. Do not bypass the buttons.

### For AC transformers lacking a bell button



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



**Note!** The no. 610-5906-001 button works with any Lionel AC transformer except no. 6-4690 Type MW. Transformers made by other manufacturers may not be compatible with the RailSounds sound system.

# RailSounds sound system operations

## Your locomotive's RailSounds sound system—the basics

---

**T**he Lionel RailSounds sound system is the most realistic model railroad sound system in the world. Your locomotive features digital samples from real-life steam locomotives for the *ultimate* in realism.

Begin by installing a nine-volt *alkaline* battery in the tender as illustrated in Figure 4 on page 9. This ensures interruption-free operation of the RailSounds sound system. The battery harness is located inside the tender. To access the battery harness, you must first remove the body screws from the bottom of the tender and then lift off the top of the tender. Refer to the Figure 4 on page 9 for the location of the body screws. Snap the battery harness onto the battery terminals, then slide the battery into the holder and replace the tender body, securing it with the body screws.

When you first apply track power, the locomotive's RailSounds sound system will produce the sounds of the locomotive at rest. As the locomotive moves, chuffing begins, increasing with the locomotive's speed.

To silence the steam chuffing sound (whistle/bell are unaffected), slide the RailSounds sound system switch, located on the underside of the tender (see Figure 4 on page 9 for the location), to the SIGNALSOUNDS position *before powering up the locomotive*. The whistle and bell are activated by using the lever or button on your transformer or CAB-1 Remote Controller. The volume control knob is located under the water hatch on top of the tender (see Figure 4 on page 9).

**Note!** Please remove the protective cover from the battery harness before installing the battery.

**Note!** Although the RailSounds sound system is powered by track voltage, *the battery is required* for uninterrupted operation and shutdown sequences. Use only alkaline batteries.

**Note!** Discontinue locomotive power *for ten seconds* before changing the RailSounds switch position.

**Note!** If the RailSounds sound system “drops out” during track power interruptions (during direction changes, switches, crossings, etc.), replace the battery.

## The RailSounds sound system in the Command Control environment

---

**Y**our locomotive's RailSounds sound system gives you even *more* in the TrainMaster Command Control environment.

- **DynaChuff.** Real steam locomotive chuffing depends on the locomotive's load. DynaChuff simulates both labored and relaxed chuffing sounds. Highball down the mainline and hear the labored chuffing of a locomotive battling inertia. Reduce your throttle setting, and chuffing relaxes to a more sedate sound, as though the load placed on the locomotive has decreased. Experience DynaChuff on steep grades, at yard crawls, and at speed. Another RailSounds sound system exclusive.
- **Bonus sounds** like squealing brakes with the CAB-1 Remote Controller **BRAKE** command.
- **Incidental sounds** you control with CAB-1 Remote Controller numeric keypad commands, like steam blow-off and steam release effects.



# RailSounds sound system operations

## The RailSounds sound system in the Command Control environment (continued)

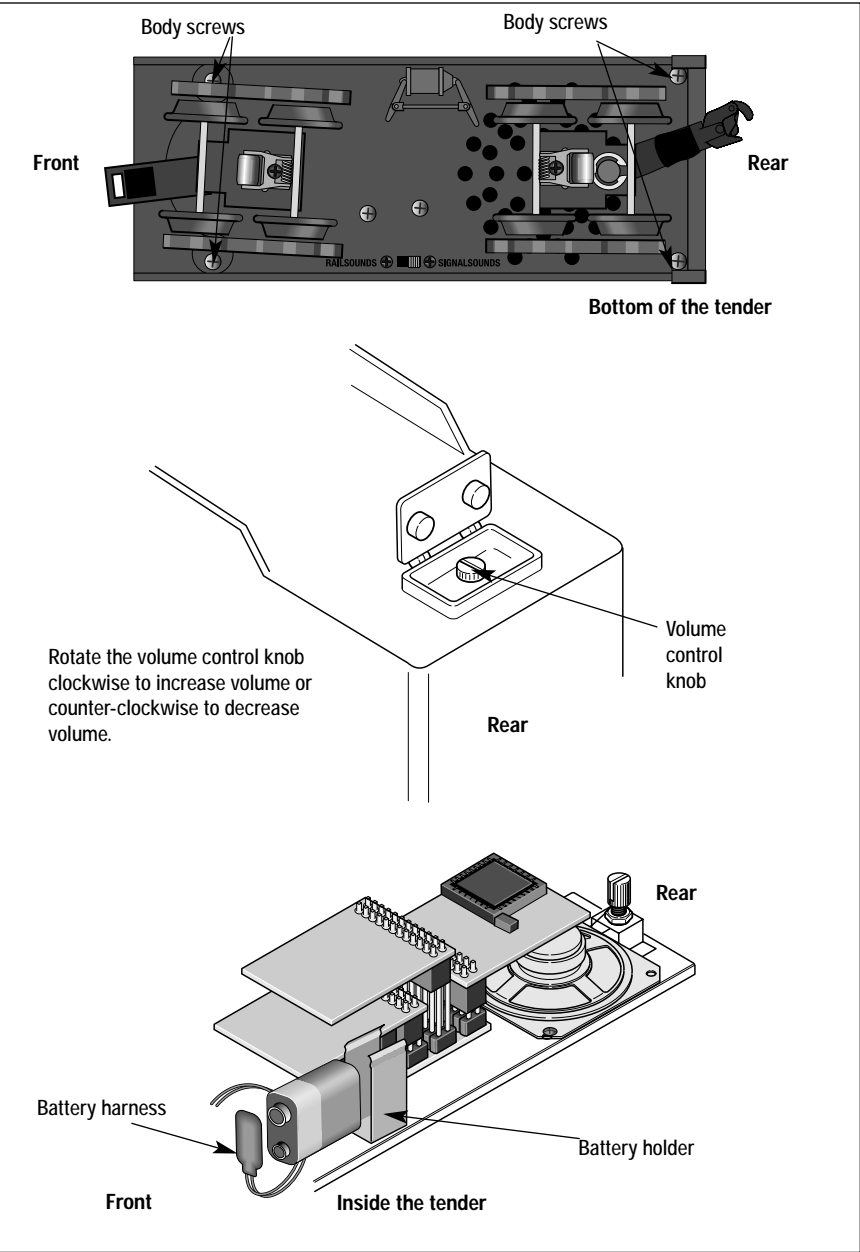


Figure 4. RailSounds sound system controls and battery installation

# *RailSounds sound system operations*

## Experiencing the range of your locomotive's RailSounds sound system

---

**W**ith the RailSounds sound system, you experience the sounds of real railroading like never before. Simply put, it's the most sophisticated, authentic model railroad sound system in the world.

- **Variable chuff rate.** The speed of your locomotive determines the steam chuff rate.
- **MultiWhistle.** Different whistles for different speeds—a RailSounds sound system exclusive.
- **Authentic bell.** Press **BELL** on your CAB-1 Remote Controller or transformer to begin the effect, again to discontinue. Even the final “hit” is muted like the real thing.
- **Reverse unit reset sound.** Power down your track, wait for three to five seconds, and listen for the air-release sound—that's the locomotive telling you its Command reverse unit has just *reset to forward operation*.
- **Shutdown sequence.** No other model railroad sound system shuts down like the RailSounds sound system. Turn off track power, and after the air-release reset sound, you have two seconds to restart your locomotive. If you're done with operations, the RailSounds sound system will commence with an authentic shutdown sequence about two seconds after the air-release reset occurs.

**Note!** A nine-volt alkaline battery must be installed for the shutdown sequence.

## Notes on the RailSounds sound system

---

- Use the volume control knob to adjust sound output. Refer to Figure 4 on page 9. Use a flat-blade screwdriver to adjust the volume level.

**Note!** Do not force the volume control knob past the point where it will easily turn, or damage to the volume control will result.

- Listen for incidental locomotive sounds during the operation of the RailSounds sound system. They're automatic and, of course, authentic.
- The nine-volt alkaline battery you installed ensures *continuous* sounds, even during short track-power interruptions. The battery must be installed for the shutdown sequence.
- Longer track-power interruptions (including locomotive derailments) cause the RailSounds sound system to shut down after about seven seconds.
- For even *more* authentic RailSounds sound system effects, operate your locomotive in the TrainMaster Command Control environment. See pages 13-16 for details.

# *Odyssey System operations*

## **The Odyssey System**

---

**T**he Odyssey System is a “cruise control” for your locomotive. Once the speed is set (see below), your locomotive will maintain a constant speed, no matter what loads the locomotive pulls or what grades you have on your layout. This digitally-controlled system also allows for extremely slow movement that will amaze any “scale” enthusiast.

## **Odyssey System conventional (transformer) operation**

---

**T**he Odyssey System is automatically operational when you operate your locomotive in conventional (non-Command Control) mode, as long as the Odyssey switch is in the ON position (see Figure 2 on page 5). 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. If you would like to deactivate the speed control feature, slide the Odyssey switch to the OFF position while the locomotive is not in motion.

**Caution!** In conventional operation, the lights in both the engine and tender 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 System.

# Odyssey System operations





## Odyssey System Command operation

---

Use your CAB-1 Remote Controller to turn the Odyssey System speed control on or off. **The position of the Odyssey switch (see Figure 2 on page 5) is the Odyssey System default setting when you power up the locomotive.** You may override the default with the following commands. The override settings will be cleared and the default settings will be restored when the locomotive is powered down.

    Turns off Odyssey System speed control.

**Note!** When you press **7**, you will activate a TowerCom announcement. This has no impact on the Odyssey System function.

    Turns on Odyssey System speed control.

**Note!** When you press **9**, you will activate the Steam blow-off sound and turn on the smoke unit (if it was off). This has no impact on the Odyssey System.

Do not wait longer than two or three seconds between pushing the buttons in each sequence. If the command is not accepted, repeat the sequence.

**Note!** The locomotive must **not** be in motion while enabling or disabling the Odyssey System speed control.

# TrainMaster Command operations

## The TrainMaster Command Control environment

---

**T**rainMaster Command Control is the advanced model railroad control system from Lionel. TrainMaster Command Control gives you the power to operate multiple Command-equipped locomotives *on the same track, at the same time*.

**To operate in Command mode, you need a Command Base (6-12911) and a CAB-1 Remote Controller (6-12868).** Find them both at your authorized Lionel retailer.

**1**

***Place your locomotive on Lionel or Lionel-compatible 0-31 or larger track.***

- **Make sure track power is OFF before placing your locomotive on the track.**
- **Make sure your Lionel Command Base is plugged-in** and its communications wire is connected to the COMMON post on your Lionel transformer *or* the U terminal on any of your installed PowerMasters.
- Once positioned on the track, **increase track voltage to FULL** (no more than 19 volts). On PowerMasters, slide the CMD/CONV switch to CMD.

**2**

***Address your locomotive using your CAB-1 Remote Controller.***

- **Press ENG and 1** on the numeric keypad of your CAB-1 Remote Controller. This command is sent by your CAB-1 Remote Controller to the Command Base, which then translates your command into digital code. That code is sent around your railroad's outside rails in the form of a digital "halo." All Command-equipped Lionel locomotives listen to this digital communication, but they do not respond until they hear their individual ID number—in this case, "1."
- **The digital language of TrainMaster Command Control—and not track power—controls the actions of Command-equipped Lionel engines.** Track power is simply like gasoline in the tank of your car—it gives you the power to go places, but it doesn't tell you where to go or how fast to get there.

### **Note!**

**All Command locomotives come factory-programmed with an ID# of "1."** To change the ID# of your locomotive, see page 17.

**3**

***Move 'em out!***

- **Throttle up or press any command button on the CAB-1 Remote Controller.** Your locomotive will respond to your every command.

# TrainMaster Command operations

## Running your locomotive in the TrainMaster Command Control environment

### Example Address Locomotive #1

Set PowerMaster to CMD or traditional power supplies to full throttle (no more than 19 volts)



Press **ENG**



Press **1** (the ID#)

Throttle up/press any command button

Your Command-equipped locomotive comes factory-programmed with an ID# of "1." To get your locomotive in action, set PowerMasters to CMD or set all power supplies on full (no more than 19 volts). Press **ENG** and **1** on your CAB-1 Remote Controller. Turn the throttle or press any command button, and your locomotive is ready for Command operations.

## CAB-1 Remote Controller commands for your locomotive

*RailSounds sound system effects are in bold italic.*



Press **F** to activate the **Coupler release sounds**.



Press **R** to activate the tender rear coupler releases. **Coupler release sounds**.



Press **AUX1** to activate the numeric keypad.



Press **AUX2** to turn your locomotive's headlight on and off.



Turn the **THRATTLE** to the right to accelerate, left to decelerate. **Speed-dependent variable steam chuffing. DynaChuff dynamic chuffing effect.**



Press **HALT** to shut down all PowerMaster electrical output on your railroad. Stops all Command-equipped locomotives in operation.

### Note!

Use **HALT** only in emergency situations.



Beneath this panel



Press **WSTL/HRN** to activate the locomotive's whistle, release to discontinue. **Multi-Whistle steam whistle sound.**



Press **BELL** once to activate the bell, again to discontinue.

**Traditional bell sound.**



Press **DIR**—the locomotive decelerates to a complete stop; turn the throttle up, and the locomotive moves in the opposite direction. There is no neutral. **Steam air-release sound.**



Press and hold **BOOST** for extra power. Release **BOOST** and return to the locomotive's previous speed. **Labored chuff.**

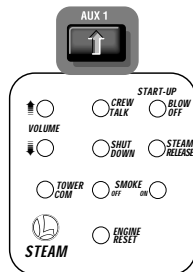


Press and hold **BRAKE** to slow down or stop. Release **BRAKE** and return to the previous speed. **Squealing brake sounds.**

# TrainMaster Command operations

## CAB-1 Remote Controller numeric keypad commands for your locomotive

When you press **AUX1** on your CAB-1 Remote Controller, you turn the numeric keypad into ten command buttons. The keypad “stays open” and gives you access to extra command features until you press any top-row button (**SW**, **ACC**, **RTE**, **TR**, or **ENG**). The CAB-1 Remote Controller keypad overlay included with your locomotive is designed to help you learn the auxiliary features specific to this classic locomotive. ***RailSounds sound system effects are in bold italic.***



**0** Stops and resets the locomotive to FORWARD. ***Headlight flickers.***

**1** Raises the volume of the RailSounds sound system. ***Sound volume increases.***

**2** CrewTalk communication is the sound of unintelligible walkie-talkie communication.

**3** Starts-up the RailSounds sound system. ***Start-up sequence commences. Steam blow-off sound.***

**4** Lowers the volume of the RailSounds sound system. ***Sound volume decreases.***

**5** Activates the RailSounds sound system steam shutdown sequence. Just like the real thing, *your locomotive must be idle for shutdown to occur.* ***Steam shutdown commences.*** Remember, the whistle and bell will not sound until you restart the RailSounds sound system. ***CrewTalk sounds\*.***

**6** ***Steam release sound.***

**7** TowerCom announcements are an audible two-part announcement that includes the locomotive’s road number and/or name. Pressing **AUX1**, **7** triggers a “hold for clearance” announcement. Press **7** again (without pressing **AUX1**), and a “cleared for departure” message plays. *There is a four second delay in this function.*

**8** Turns off the smoke generator. ***Steam release sound\*.***

**9** Turns on the smoke generator. ***Steam blow-off sound\*.***

*\* Hearing the Steam release sound, Steam blow-off sound, or the CrewTalk communication lets you know that the locomotive has received these commands.*

**Note!** **AUX1**, **8** and **9** only work if the smoke unit switch is in the ON position.

# *TrainMaster Command operations*

## **Tuning your locomotive's performance**

---

### **MOMENTUM**

TrainMaster Command Control's momentum feature simulates the labored performance of a locomotive pulling a heavy load. Press **L**, **M**, or **H** (located under the CAB-1 Remote Controller's removable panel) for light, medium, or heavy momentum. The locomotive's Command reverse unit remembers this setting until you change it. For quick locomotive response, choose **L**.

### **BRAKING AND BOOSTING**

There's more to starting and stopping than just turning the CAB-1 Remote Controller throttle. Use the **BOOST** and **BRAKE** command buttons—they give you incremental control of speed *and* are the superior way to handle grades, gradual stops-and-starts, and more. Plus, using **BRAKE** in the Command environment gives you a bonus RailSounds sound system effect—the ultra-realistic sound of squealing brakes.

### **SOUND QUALITY**

To set your maximum volume level, use the volume control knob (see Figure 4 on page 9). Turn the knob left or right to adjust the volume to your liking.

For quick remote-control of volume *below* the master setting—like muting—use the CAB-1 Remote Controller numeric keypad's volume control. Press **AUX1**, **4** on the keypad to lower overall RailSounds sound system output.

### **HIGH VOLTAGE SETTING**

Press **SET**, and the headlight will flash. Get your locomotive moving to the maximum speed you want it to run, then press **BOOST**. Use this to keep your locomotive from derailing at excessive speeds. Turn off the high voltage setting by pressing **SET**, then **BOOST**, holding each for one second.

### **STALL**

Make your locomotive feel more responsive by setting a “stall” voltage. Get your locomotive moving, then press **SET**; the locomotive will stop. Turn the throttle clockwise to get the locomotive moving, then decrease speed until the locomotive just stops. Press **SET** again; the Command reverse unit remembers the stall setting until you change it. To clear the stall setting, press **SET** twice, holding it for one second each time.

### **Note!**

These settings will be lost when you assign a new engine ID number.



# TrainMaster Command operations

## Assigning your locomotive a new ID#

**Example** Assign a new ID# to your Command-equipped locomotive

Set the Command reverse unit switch to PROG

Command Base plugged in

Place the locomotive on track

PowerMasters set to CMD or traditional power supplies ON FULL (no more than 19 volts)

Turn track power on (PowerMasters):



Press TR



Enter the PowerMaster's ID#



Press BOOST

Program the locomotive with a new ID#:



Press ENG



Press a number you choose (the ID#)



Press SET

Set the Command reverse unit switch to RUN

Your locomotive remembers its ID# forever; change it any time with these steps

As your fleet of Command-equipped Lionel locomotives grows, you'll want to give your locomotive a more individualized number. Choose from any between 1 and 99. To make things easy, use a portion of your locomotive's cab number.

Set the locomotive's Command reverse unit switch to PROG (see Figure 2 on page 5). Plug in the Command Base and place the locomotive on track, then power up. Using your CAB-1 Remote Controller, press **ENG**, the locomotive ID# that you select, and then press the **SET** button located under your CAB-1 Remote Controller's removable panel. Hear the whistle blow (or see the headlight flash if the RailSounds sound system is off); that's the Command reverse unit confirming the new ID#. Set the Command reverse unit switch to RUN. Your locomotive is ready for operations with its all-new ID#.

*We recommend that you choose an easy to remember ID# for your engine. Some possibilities are part of the engine road number, your age, or any two digit number that is not used by another engine. Write the number on a small piece of tape and put this on the bottom of the tender frame to aid in remembering.*

# *TrainMaster Command operations*

## **Reprogramming the Command reverse unit to restore features**

---

**D**ue to the inevitable derailments and static, it is possible that your Command reverse unit could someday lose its setup program. The symptom of this condition would be unresponsiveness in Command mode. This can be easily remedied by “reprogramming” your Command reverse unit using the following steps.

**STEP 1:** Move the switch on your locomotive from RUN to PROG.

**STEP 2:** Plug in your Command Base.

**STEP 3:** Place the locomotive on track, then turn on power to your track.

**STEP 4:** Press **ENG** then input the locomotive’s ID#. Press **SET**.

**STEP 5:** Press **ENG**, the ID#, **AUX1**, then press **74** for this particular locomotive.

**STEP 6:** Turn off power to your track and wait ten seconds.

**STEP 7:** Remove the locomotive from your track, and move the switch from PROG to RUN.

**STEP 8:** Place the locomotive back on track, then turn power on to the track.

**STEP 9:** Press **ENG** and the ID#, then operate as normal.

# Maintaining and servicing your locomotive

## Maintaining your locomotive's handrail antenna

---

**Y**our locomotive handrails are more than just a prototypically accurate detail—they're the Command reverse unit's antenna for receiving Command Base digital communications. *Please handle the locomotive carefully to avoid handrail damage.* To ensure optimum reception, both handrails are insulated from the die-cast metal shell. If your locomotive experiences difficulty receiving Command Base communications, check that the ends of the handrails are insulated from the cab with either an insulating bushing or an insulating handrail stanchion. Ensure that each insulator is present and in position. Finally, prevent the handrails from touching any part of the die-cast metal locomotive cab.

## Adding fluid to your locomotive's smoke generator

---

**Y**our locomotive is equipped with a smoke generator that produces safe, clean, white smoke during operation.

The smoke generator requires the periodic addition of Lionel smoke fluid in order to function. A small bottle of smoke fluid was included with this locomotive. Press down and unscrew the cap of the smoke fluid bottle, then add eight to ten drops of fluid directly into the smoke stack. Smoke production will commence momentarily, faster if you run your locomotive at speed. When smoke production decreases, add more fluid (eight to ten drops).

When you place your locomotive on the track for the first time, the smoke unit will be on. Thereafter, the smoke unit will return to its last operating state each time you power it up. For example, if you turn off the smoke unit before you power down the locomotive, the smoke unit will be off the next time you power it up. If the smoke unit was on before you powered down the locomotive, the smoke unit will be on the next time you power it up. When operating your locomotive in the TrainMaster Command Control environment, press **AUX1, 8** on your CAB-1 Remote Controller to turn off the smoke unit; press **AUX1, 9** to turn on the smoke unit.

**Note!** To control the operation of the smoke unit with your CAB-1 Remote Controller, be sure that the smoke unit switch is in the ON position. Refer to Figure 2 on page 5 for the location of the switch. Commands from the CAB-1 Remote Controller will not override the switch setting.

*Always* keep a small amount of smoke fluid in the locomotive smoke generator; the generator's element can become damaged if operated without fluid. Smoke production is greater at higher voltages and when the locomotive is pulling a heavy load or long consist.

**Note!** Always keep smoke fluid in your locomotive's smoke generator. If not, turn it off when smoke is not desired using the smoke unit switch shown in Figure 2 on page 5 or the **AUX1, 8** command if you are running in Command mode.

# Maintaining and servicing your locomotive

## Lubricating your locomotive

**H**elp your Lionel locomotive lead a long and productive life on your railroad by maintaining it properly.

We recommend that you purchase a Lionel Lubrication and Maintenance Kit (6-62927), available from your Lionel dealer. Two basic rules to keep in mind: *never* over-lubricate (a small amount will do), and avoid getting grease or oil on the locomotive wheels, contact rollers, *or* your track.

You'll know your locomotive requires lubrication when visual inspection reveals dryness on the parts indicated in Figure 5. Remove accumulated dirt and dust before lubricating, and always lubricate any locomotive emerging from prolonged storage. Also, *lightly* lubricate the locomotive side rods, drive rods, linkage, front and rear truck pivot points, and tender wheel bearings after each 25 hours of operation.

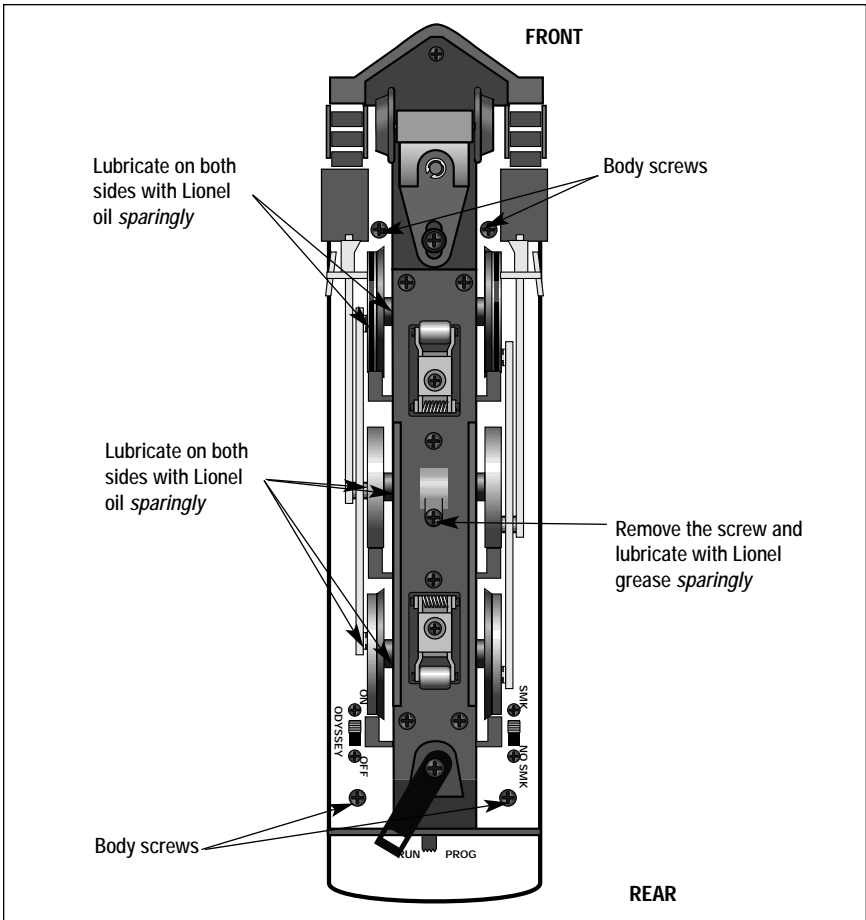


Figure 5. Lubrication points

# ***Maintaining and servicing your locomotive***

## **Servicing your locomotive's lamps**

---

**Note!** Before changing the lamps in your locomotive, be sure to check that the **AUX2** command was not used to turn off the front headlight.

Your locomotive is illuminated by various lamps. One is located in the headlight housing. A lamp illuminates the interior of the cab. Two lamps light the boiler top number boards (CN version only). During the course of normal operations, they may require replacement.

Removing the body screws as shown on page 20 will allow access to the inside of the cab and the expired lamps. However, due to the close fit of many components and the inter-connected wiring, we recommend that you take your locomotive to your authorized Lionel Service Center for any required lamp replacement.

Lamp Numbers:

Headlight (1)

610-8238-039

Cab light (1)

610-8238-039

Number board lights

610-8238-039

(CN version only)

**Note!** The green front marker lights and the flickering firebox light are LEDs (light emitting diodes), and are not user serviceable. They can be replaced by your authorized Lionel Service Center if it is ever required.

# Maintaining and servicing your locomotive

## Replacing your tender's lamp

**Y**our tender's center back-up light is illuminated by one lamp. During the course of normal operations, you may find that this lamp requires replacement.

To access the expired lamp, remove the body screws from the underside of the tender and lift away the tender body. Refer to Figure 6. Be careful with the wires that attach the body to the frame. Unplug the lamp connector from the rest of the wire harness. Carefully pull the expired lamp out of the back-up light housing.

Lamp number:

Back-up light

610-8239-038

These lamps are available from your authorized Lionel Service Center or from Lionel Service. See Lionel Service section on page 24 for more information.

Reassemble the tender in reverse order. Be sure that all wires are inside the body before you tighten the screws.

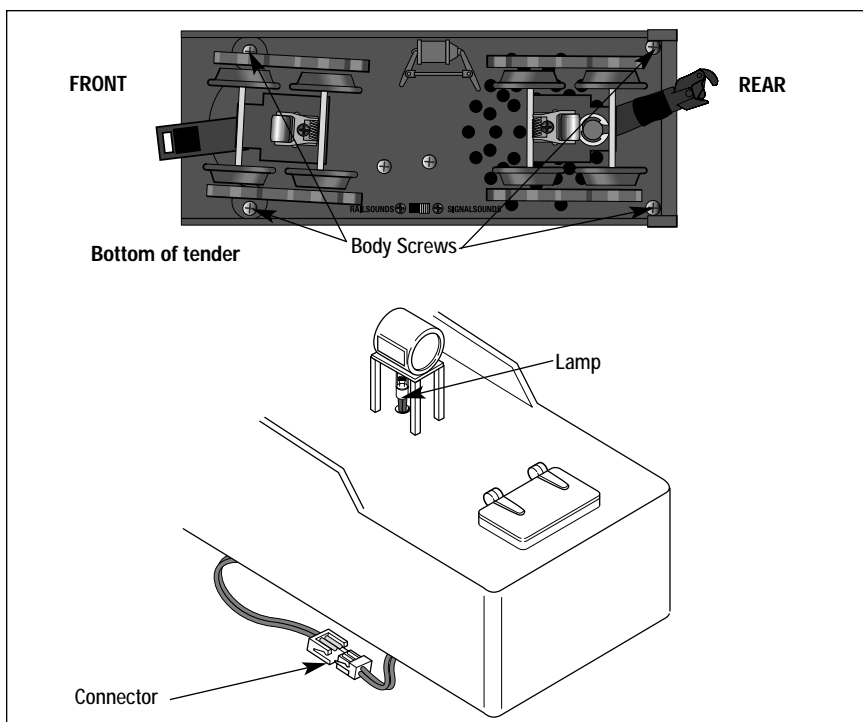


Figure 6. Tender lamp replacement

# ***Maintaining and servicing your locomotive***

## **Replacing the traction tires**

---

**T**wo of the drive wheels are fitted with rubber traction tires to enhance the locomotive's tractive effort so it can pull many cars at once.

Lionel has provided extra traction tires to replace the installed traction tires if they ever wear out. Simply unscrew the drive rod nut from the wheel using a 5mm nut driver, slip off the old traction tire and remove it from under the drive rod. Place the traction tire on the wheel and re-tighten the drive rod nut. You're now ready to pull that long freight back to the yard. You may also choose to take your locomotive to an authorized Lionel Service Center for traction tire replacement.

## **Installing the O gauge front coupler**

---

**A**n O gauge coupler (non-operating) is included with your locomotive for those who may wish to "double-head" their trains with a second 2-6-0 Mogul. Straighten out the wire coupler pin with a pair of needle nose pliers. The coupler pin runs through the scale coupler. Using a small flat-blade screwdriver, loosen and remove the screw holding the scale coupler. Remove the scale coupler. Position the O gauge coupler and secure with the previously removed screw. Refer to Figure 7.

Store the scale coupler in a safe place for possible reassembly at a later date.

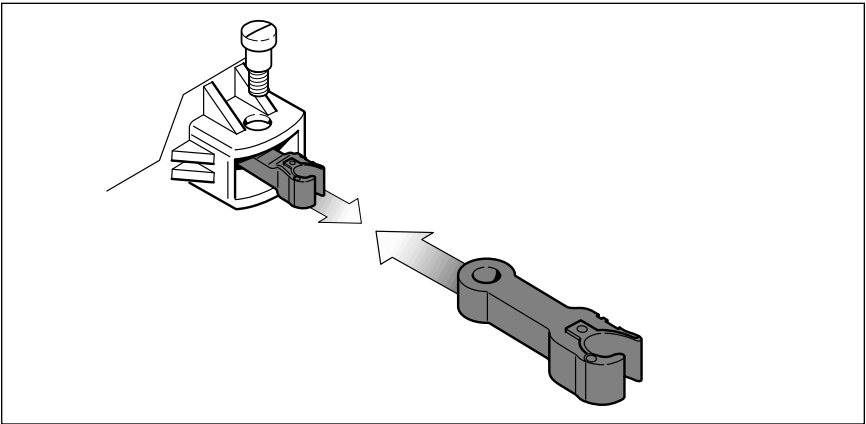


Figure 7. Coupler installation

## Limited Warranty/Lionel Service

---

**T**his Lionel product, including all mechanical and electrical components, moving parts, motors and structural components, except for light bulbs, is warranted to the original consumer-purchaser, for **one year** against original defects in materials or workmanship when purchased through an authorized Lionel merchant.

This warranty does NOT cover normal wear and tear, light bulbs, defects appearing in the course of commercial use, or damage resulting from abuse or misuse of the product by the purchaser. Transfer of this product by the original consumer-purchaser to another person voids this warranty. Modification of this product voids this warranty.

Any warranted product which is defective in original materials or workmanship and is delivered by the original consumer-purchaser to Lionel L.L.C. or an authorized Lionel L.L.C. Service Center, together with proof of original purchase will, at the option of Lionel L.L.C., be repaired or replaced, without charge for parts or labor. In the event the defective product cannot be repaired, and a replacement is not available, a refund of the original purchase price will be granted. Any products on which warranty service is sought must be sent freight or postage prepaid, as transportation and shipping charges are not covered by the warranty.

### **In no event shall Lionel L.L.C. be 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 limited 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 L.L.C. product is required, bring the item, along with your dated sales receipt and completed warranty information to the nearest Authorized Lionel Service Center. Your nearest Lionel Service Center can be found by calling 1-800-4-Lionel, or by accessing our Website at [www.lionel.com](http://www.lionel.com).

If you prefer to send your product back to Lionel L.L.C. for repair in Michigan, you must first call 586-949-4100 or FAX 586-949-5429, or write to Customer Service, P.O. Box 748, New Baltimore, MI 48047-0748, stating what the item is, when it was purchased and what seems to be the problem. You will be sent a return authorization letter and label to ensure your merchandise will be properly handled upon receipt.

Once you have received your return authorization and label, make sure that the item is packed to prevent damage during shipping and handling. We suggest that you use the product's original packaging. This shipment must be prepaid and we recommend that it be insured.

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 our Authorized Lionel Service Centers after its warranty has expired. A reasonable service fee will be charged.

### **Warranty Information**

Please complete the information below and keep it, along with your dated sales receipt. You must present this and your dated sales receipt when requesting warranty service.

Name \_\_\_\_\_

Address \_\_\_\_\_

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

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

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

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



©2004 LIONEL L.L.C., CHESTERFIELD, MI 48051-2493  
UNITED STATES OF AMERICA  
PRINTED IN CHINA