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Lionel
#13138 "Majestic"
Electric Freight
Owner's Manual

featuring

TRAINmaster
C · O · M · M · A · N · D

and

RailSounds

Congratulations!

Congratulations on your purchase of the #13138 “Majestic” Electric Freight! Pulled by a TrainMaster Command Control equipped GG-1 locomotive, this train set features seven classic Lionel freight cars, including two flatcars with operating Harnischfeger equipment.

SET INCLUDES:

- **#2360 Pennsylvania GG-1**
- **#6464-725 New Haven boxcar**
- **#6828 Harnischfeger construction crane car**
- **#6416 Boat loader**
- **#6827 Harnischfeger power shovel car**
- **#6315-60 Lionel Lines single dome tank car**
- **#6436-110 Lehigh Valley 4-bay hopper**
- **#6437 Pennsylvania porthole caboose**

LOCOMOTIVE FEATURES:

- **TrainMaster Command Control equipped**
- **RailSounds sound system with CrewTalk communication and TowerCom announcements**
- **Directional lighting including operating headlights and marker lights**
- **Dual ElectroCouplers**
- **Dual powerful Pullmor motors**
- **Magne-Traction track gripping system**
- **Operating metal pantographs**

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

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Quick Start

Transformer operations

1. **Place your train set on Lionel or Lionel-compatible 0-31 or larger track.**
2. **Power your train set at 8-18 volts with your alternating current (AC) transformer.**

Note! Do not power your train set with a direct-current (DC) transformer. Damage to sensitive electronic components may occur.

3. **Wait three to eight seconds as your locomotive determines whether it is in a conventional environment or a TrainMaster Command Control environment.**
4. **Move 'em out! Press the DIRECTION button on your controller, then throttle up.**

TrainMaster Command Control operations

To operate your train set in the Command Control environment, you need a Command Base (available separately, 6-12911) and a CAB-1 Remote Controller (available separately, 6-12868). The Command Base and CAB-1 Remote Controller are available together in the Command Set (6-12969).

1. **Turn off track power and plug-in the Command Base.**
2. **Place your train set on Lionel or Lionel-compatible 0-31 or larger track.**
3. **Increase track voltage to full power (no more than 19 volts AC).**

Note! Do not power your train set with a direct-current (DC) transformer. Damage to sensitive electronic components may occur.

4. **Press ENG and 1 to address your locomotive with your CAB-1 Remote Controller.**
5. **Throttle up and move 'em out.**

Conventional transformer operations

Conventional operations

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 (or separate buttons if your transformer is not equipped with these controls) to activate these features.

To experience all of your locomotive's features, we recommend operating in the TrainMaster Command Control environment. With a simple one-wire connection, you can use the CAB-1 Remote Controller to access all of the functions of your locomotive. Refer to pages 14-21 to see how to operate your locomotive in the TrainMaster Command Control environment.

Conventional transformer operations

Operating your train set in the conventional environment

1. **Place your train set on Lionel or Lionel-compatible 0-31 or larger track.**
2. **Power your locomotive at 8-18 volts with your alternating current (AC) transformer.**

Caution! Power your train set with an alternating-current (AC) transformer only. Powering your train set with a direct-current (DC) transformer may result in damage to sensitive electronic components.

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 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.

Use the **HORN** and **BELL** buttons on your transformer to activate those features. Refer to page 12 if your transformer is not equipped with those buttons.

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. Refer to Figure 1 for the location of the Command reverse unit switch.

1. Use your transformer’s **DIRECTION** button to get your locomotive moving in the desired direction.
2. Slow the locomotive down without stopping (reduce the throttle without turning off track power).
3. Slide the Command reverse unit switch to the PROG position. At this point, the locomotive is “locked” into your chosen direction.

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

Note! Your locomotive will “reset” to forward after any power interruption lasting five seconds or longer, regardless of the direction you set.

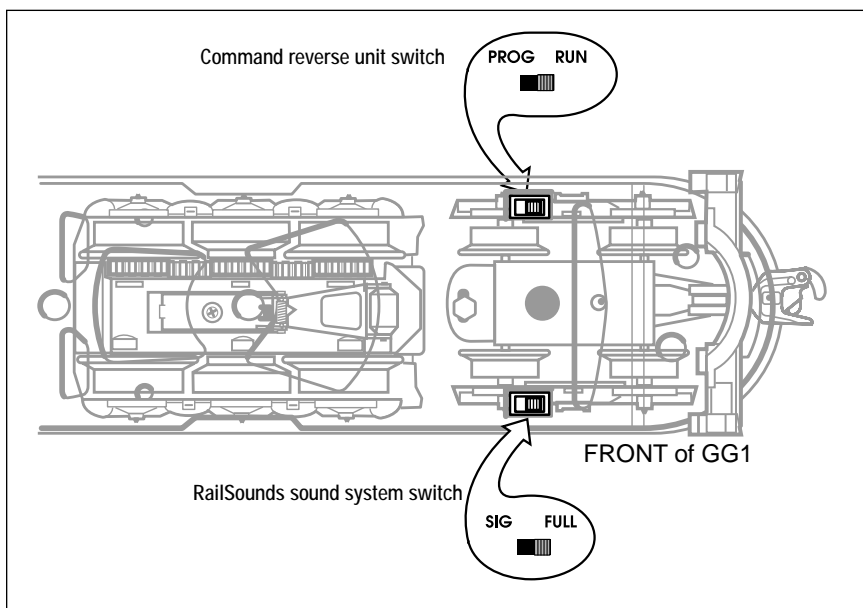


Figure 1. Switch locations

Conventional transformer operations

Coupling 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 0 gauge; 6-12746 and 6-65149 for 0-27 gauge; and 6-12020 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. To open the magnetic couplers manually, simply press down on the uncoupling tabs.

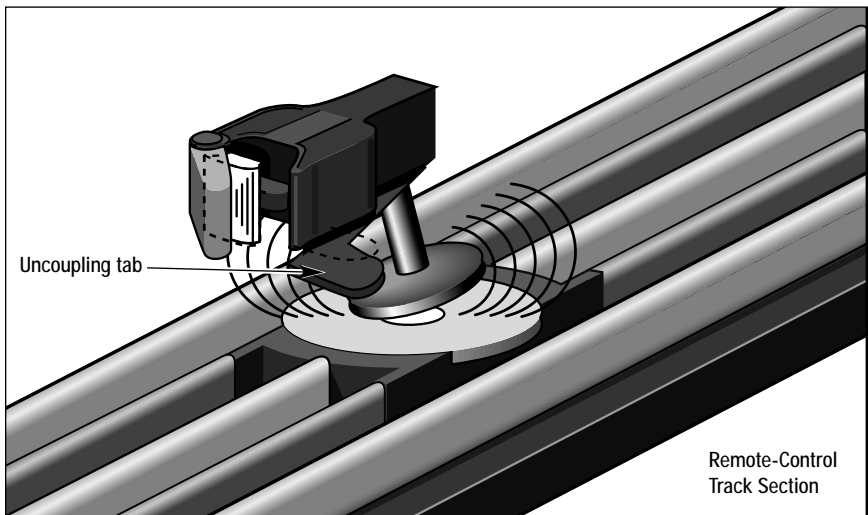


Figure 2. Magnetic coupler operation

RailSounds sound system operations

RailSounds sound system operations

Your locomotive is equipped with the Lionel RailSounds sound system, the most realistic model railroad sound system in the world. The RailSounds sound system brings the sounds of the railroad to your layout through high quality digital samples of real locomotives.

When you operate your locomotive in the conventional environment, you get the realistic sounds of the locomotive's electric motor, which automatically rev up as the speed of the locomotive increases. You can sound the locomotive's horn or activate the ringing of the mechanical bell. When you are through with operations and power down the track, your locomotive's RailSounds sound system starts a realistic shutdown sequence. A nine-volt alkaline battery is required for the shutdown sequence. See page 10.

When you operate your locomotive in the TrainMaster Command Control environment, you get full control of the RailSounds sound system. You still get the horn and bell sounds. The locomotive's electric motor RPM sounds automatically rev up, but you can also set a particular RPM sound 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 metal. You can also trigger CrewTalk communication 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. See page 10.

RailSounds sound system operations

Installing the battery

While the 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 RailSounds sound system turns off during interruptions in track power, you may need to replace the battery.

1. Remove the six body screws from the underside of the locomotive. See Figure 6 on page 23 for the screw locations.
2. Lift away the body. Be careful with the wires that connect the body to the frame.
3. Remove the protective cover from the battery harness.
4. Snap the battery harness onto the nine-volt alkaline battery's terminals.
5. Slide the battery into the battery slot on the circuit board.
6. Secure the body to the frame with the six body screws.

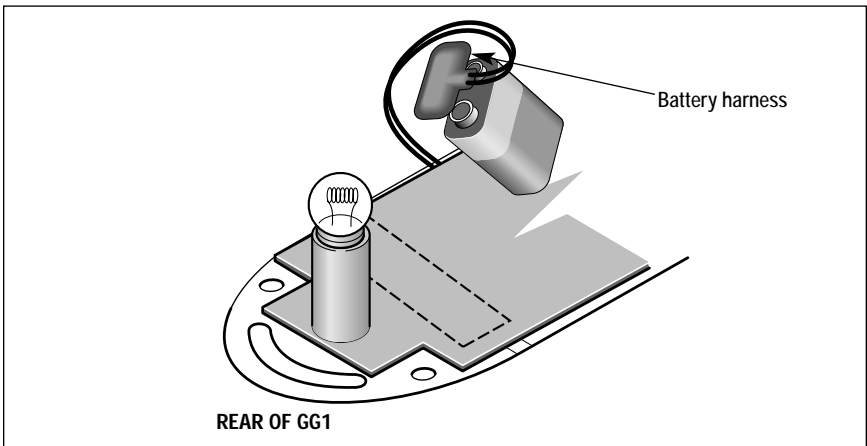


Figure 3. Battery installation

RailSounds sound system operations

Using the 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 moves, the electric motor 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 electric motor roar, slide the RailSounds sound system switch located on the underside of the locomotive to the SIG position before you power up the locomotive or after the locomotive has been powered down for a minimum of ten seconds. Refer to Figure 1 on page 7. The horn and bell sounds will still be active. To adjust the volume, use the volume control knob located on the underside of the locomotive. Refer to Figure 6 on page 23.

Note! For proper operation of the RailSounds sound system during track power interruptions and for the locomotive shutdown sequence, you must install a nine-volt alkaline battery. See page 10.

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

- **Four levels of electric motor roar.** Your locomotive's speed automatically determines the level of electric motor RPM roar.
- **MultiHorn.** A different horn sound at different speeds—a 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.
- **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.
- **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 battery is required for this sequence to function.

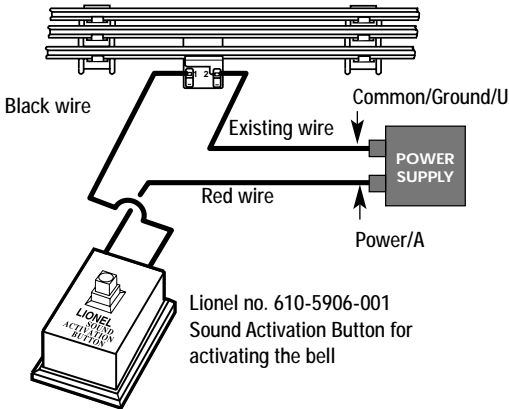
RailSounds sound system operations

Installing a Lionel Sound Activation Button for conventional operation

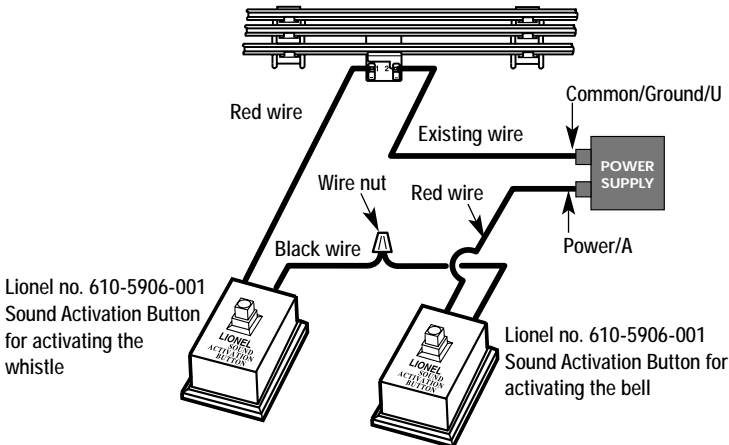
If your transformer lacks **HORN** and **BELL** buttons, you will need to install Lionel no. 610-5906-001 Sound Activation Buttons (available separately) to activate the locomotive's horn and bell sounds.

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



RailSounds sound system operations

Using the RailSounds sound system in the TrainMaster Command Control environment

To access all of the features of the RailSounds sound system, you must operate your locomotive in the TrainMaster Command Control environment. The CAB-1 Remote Controller is required to activate features such as TowerCom announcements, CrewTalk communication, and coupler release sounds. Refer to pages 15 to 17 to learn how the RailSounds sound system is integrated into TrainMaster Command Control operations.

Note! For proper operation of the RailSounds sound system during track power interruptions and for the locomotive shutdown sequence, you must install a nine-volt alkaline battery. See page 10.

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

- **Four levels of electric motor roar.** Your locomotive's speed automatically determines the level of electric motor RPM roar. You may also set the RPM sounds, independent of the locomotive's speed, to a particular level using your CAB-1 Remote Controller.
- **MultiHorn.** A different horn sound at different speeds—a 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.
- **Coupler release sounds.** Use your CAB-1 Remote Controller to release an ElectroCoupler, and you get the sounds of the coupler opening.
- **TowerCom announcements.** These messages simulate the communication from the dispatcher. You get “clear for departure” and “hold for clearance” messages.
- **CrewTalk communication.** Listen for the crackling, unintelligible radio communication inside your locomotive.
- **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.
- **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 battery is required for this sequence to function.

TrainMaster Command Control operations

TrainMaster Command Control operations

TrainMaster Command Control is the advanced model railroad control system from Lionel. 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). The Command Base and CAB-1 Remote Controller are available together in the Command Set (6-12969).

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.

Operating your train set 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 train set on Lionel or Lionel-compatible 0-31 or larger track.**
- 3. Increase track voltage to full power (19 volts AC).** On PowerMasters, slide the CMD/CONV switch to CMD. Program Track Power Controllers to Command Control operation.
- 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 19.
- 5. Throttle up and move 'em out!** Your locomotive will respond to every command from your CAB-1 Remote Controller.

TrainMaster Command Control operations

CAB-1 Remote Controller commands

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



Releases the front coupler.

Coupler release sound.



Releases the rear coupler.

Coupler release sound.



Activates the numeric keypad.

Air release sound.



Toggles the headlight on and off.



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***

horn 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.***

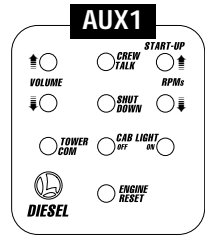


See page 17 to set the locomotive's momentum level.

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 RailSounds sound system effects are in bold italic type.**



- 0 Stops and resets the locomotive. Resets the locomotive's direction to forward. Resets the RailSounds sound system to automatic RPM operation. **Horn blows. RPM sounds return to automatic.**
- 1 Raises the volume of the RailSounds sound system. **Sound volume increases.**
- 2 Activates CrewTalk communication, unintelligible radio dialogue. **CrewTalk communication.**
- 3 Increases the RailSounds sound system RPM level. Starts the RailSounds sound system. **RPM level increases. Start-up sequence commences.**
- 4 Lowers the volume of the RailSounds sound system. **Sound volume decreases.**
- 5 Activates the shutdown sequence. Like prototypical locomotives, the electric motor RPM level must be at idle for shutdown to occur. Press **6** repeatedly to lower the RPM level until the RPM sounds reach idle. Press **5** to initiate the shutdown sequence and listen for the CrewTalk communication. Keep in mind that the horn, bell, and RPM sounds are inactive until you restart the RailSounds sound system by pressing **3**. **CrewTalk communication. Shutdown sequence.**
- 6 Lowers the RailSounds sound system RPM level. **RPM level decreases.**
- 7 Activates a TowerCom announcement, which includes a call-out specific to your locomotive. Pressing **7** the first time triggers a "hold for clearance" message. Press **7** again, and a "clear for departure message" plays. There is a four-second delay in this function. **TowerCom announcement.**

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.

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

Momentum

The TrainMaster Command Control momentum feature simulates the labored performance of a locomotive pulling a light, moderate, or heavy load. Press **L**, **M**, or **H** (located under the removable panel on the CAB-1 Remote Controller) to adjust the momentum setting. For quicker response to your commands, press **L**, which is the factory default setting. Your locomotive will keep this setting until it is changed.

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 quality

Press **AUX1**, **1** or **4** on your CAB-1 Remote Controller to raise and lower the overall volume of the RailSounds sound system. To limit your locomotive's volume, we recommend that you adjust your locomotive's volume control knob (see Figure 6 on page 23 for the location).

Setting the maximum speed

You may use your CAB-1 Remote Controller to set your locomotive's maximum speed. This will prevent locomotives from derailling as a result of excessive speed.

1. With the Command reverse unit switch in the RUN position, address your locomotive by pressing **ENG** and entering the ID#.
2. Press **SET** on the CAB-1 Remote Controller. The headlight will flash.
3. Get your locomotive moving at your desired maximum speed.
4. Press **BOOST**.

The maximum speed has been set. To clear this setting, press **SET** and then **BOOST**, holding each button for one second.

TrainMaster Command Control operations

Tuning your locomotive's performance (continued)

Setting the minimum speed

You may use your CAB-1 Remote Controller to set your locomotive's minimum, or stall, speed.

1. With the Command reverse unit switch in the RUN position, address your locomotive by pressing **ENG** and entering the ID#.
2. Press **SET** on the CAB-1 Remote Controller. The headlight will flash.
3. Get your locomotive moving at your desired minimum speed.
4. Press **SET** again. The locomotive will stop.

The next time you throttle up, your locomotive will start at the speed you set. To clear this setting, press **SET** twice, holding the button for one second each time.

TrainMaster Command Control operations

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 21.

1. Slide the Command reverse unit switch on your locomotive to the PROG 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, or the headlights will flash if the RailSounds sound system is off.
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 must be set to RUN/FORWARD.

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 backward.
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 backward.
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 PROG 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.
7. Press **AUX1**.
8. Enter **6** for this particular locomotive.
8. 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.

Maintaining and servicing your set

Lubricating the Pullmor motor armatures

Your locomotive will require occasional lubrication of its Pullmor motor armatures. If you hear excess noise during operation or the locomotive slows down intermittently, you may need to oil the top armature bearings.

Start by separating the body from the frame (see Figure 6 on page 23 for screw locations). Apply a small amount of Lionel oil (2-3 drops) into the oil wick hole.

Finish the job by securing the body to the frame with the six body screws.

Note! Do not touch the circuit boards.

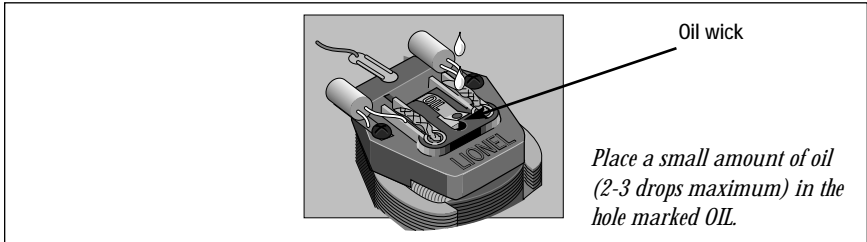


Figure 4. Pullmor motor lubrication

Lubricating your locomotive

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.

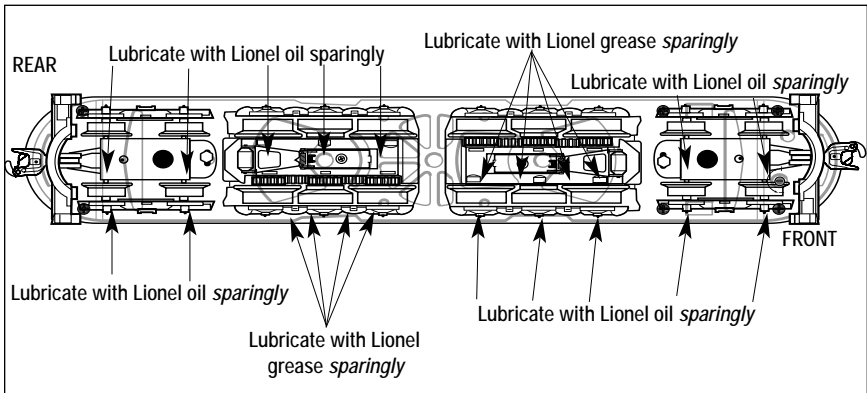


Figure 5. Underside details and lubrication points

Maintaining and servicing your set

Replacing your locomotive's lamps

Your locomotive is illuminated by two 14-volt lamps. During the course of normal operations, they may require replacement.

Start by separating the die-cast body from the frame. Remove the six screws on the underside of the frame and lift away the body.

To remove the lamps, push down the lamp and turn counterclockwise to disengage the bulb from the socket. Replace the expired lamp with Lionel part no. 00-0363-300, available from your local authorized Lionel Service Center or Lionel Service. For more information, see Lionel Service on page 28.

Insert the replacement lamp into the socket, making sure of a tight connection. To reinstall the shell, reverse the process. Make sure all of the wires are inside the body before you tighten the screws.

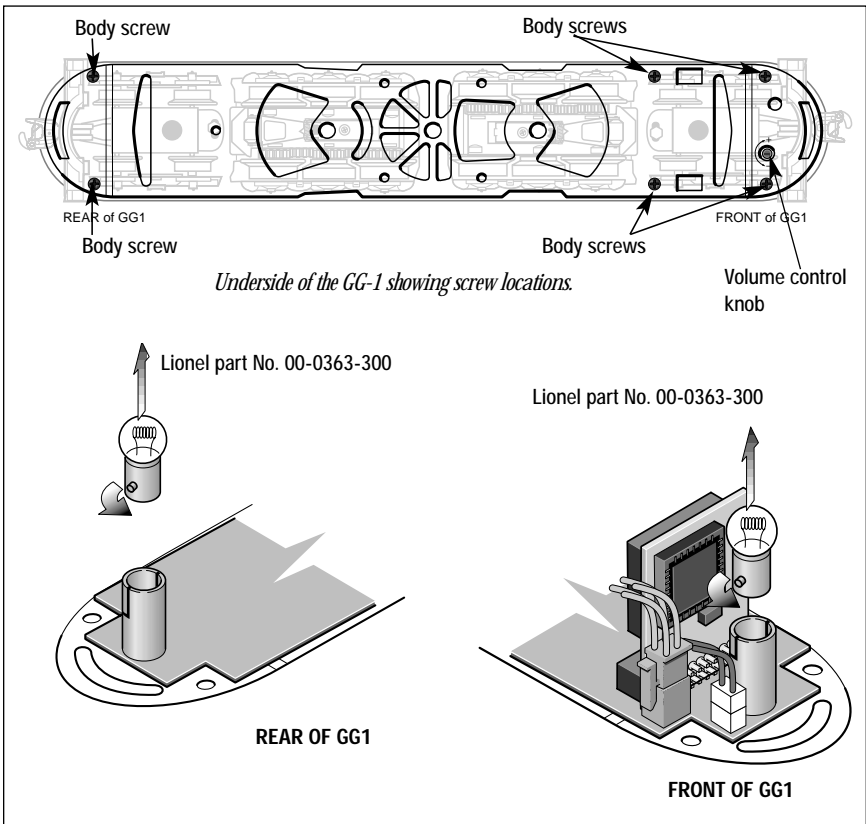


Figure 6. Lamp replacement

Note! Press Aux2 to make sure headlamp was not accidentally turned off, before replacing bulb

Maintaining and servicing your set

Replacing the traction tires

Your locomotive is equipped with traction tires 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. We recommend that you have the traction tires replaced by an authorized Lionel Service Center because the truck and side frames must be removed to access the wheels. See the Lionel Service section on page 28 for more information.

Replacing the lamp in your Porthole Caboose

During the course of normal operations, the lamp inside your Porthole Caboose may require replacement. Follow these steps and refer to Figure 7 as you replace the lamp.

1. Remove the four screws from the underside of the car.
2. Lift the body off the frame.
3. Pull the lamp out of the socket and replace it with part no. 600-0161-300, available from your authorized Lionel Service Center or Lionel Service in Chesterfield, MI.
4. Place the body back onto the frame and replace the four screws.

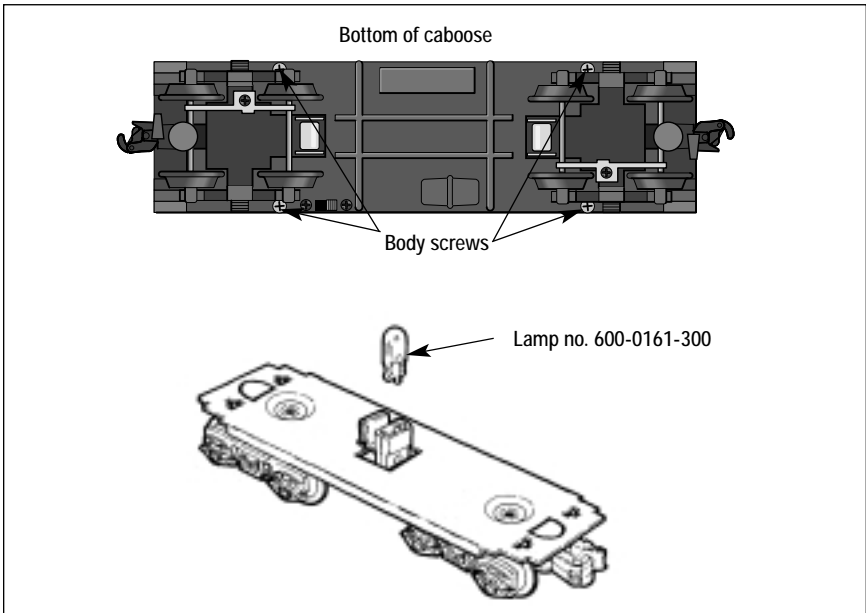


Figure 7. Caboose lamp replacement

Maintaining and servicing your set

Assembling the Harnischfeger Excavator

Once assembled, the Harnischfeger Excavator can ride on a flatcar. Be sure that this vehicle clears all structures on your layout. Follow these steps and refer to Figure 8 to assemble the Excavator.

Note! This delicate reproduction was not intended for rough play or handling.

1. Snap the boom onto the excavator body.
2. Snap the shovel arm onto the boom.
3. Loop the string around the separate pulley and attach the pulley to the top of the shovel.
4. Bring the ends of the string together and route the string over the large pulley at the end of the boom.
5. Insert the hooks on the small gantry section into the holes at the rear of the roof. Note that the hooks point towards the front of the Excavator.
6. Insert the hooks on the large gantry section into the holes in the center of the roof. The hooks point towards the front of the Excavator.
7. Snap the large gantry section onto the small gantry section.
8. Tie the ends of the string to the simulated pulleys at the base of the large gantry section.
9. Attach the tighter guy rod hooks to the small gantry section, one on each side of the pulley.
10. Attach the wider guy rod hooks to the bar behind the pulley on the boom.

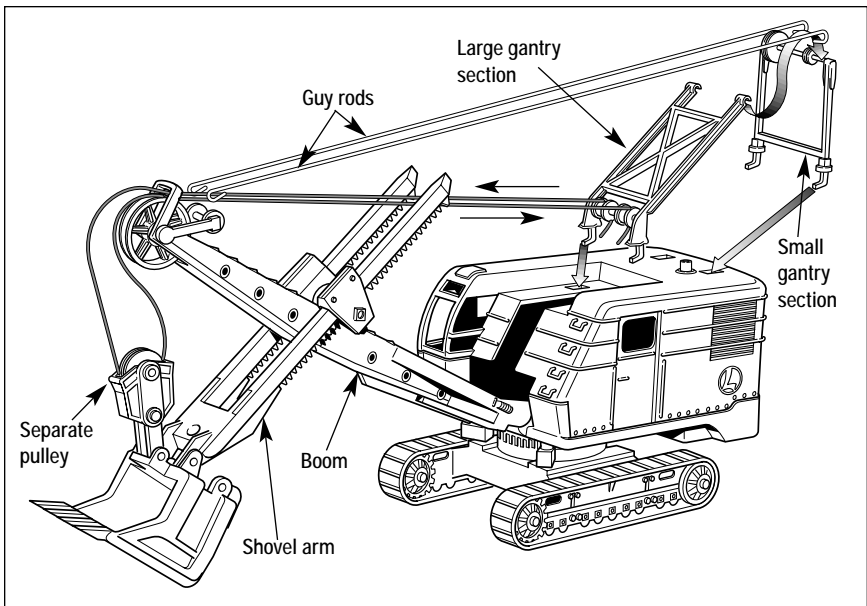


Figure 8. Excavator assembly

Maintaining and servicing your set

Assembling the Harnischfeger Construction Crane

Once assembled, the Harnischfeger Construction Crane can ride on a flatcar. Be sure that this vehicle clears all structures on your layout. Follow these steps and refer to Figure 9 to assemble the Crane.

Note! This delicate reproduction was not intended for rough play or handling.

1. Snap the extended boom onto the Crane body.
2. Loop the string around the separate block and hook.
3. Tie one end of the string to the bar at the end of the boom.
4. Route the other end of the string over the large pulley at the end of the boom. Tie this end of the string to the hook on the front of the rotating cab.
5. Insert the pins on the boom cable frame into the holes at the sides of the roof.
6. Insert the tabs on the frame support into the holes in the center of the roof. The tabs point towards the front of the crane.
7. Snap the boom pulley frame onto the boom cable frame.
8. Attach the wider guy rod hooks to the small holes at the top of the boom.
9. Attach the tighter guy rod hooks to the boom pulley frame, one on each side.
10. Press the outrigger stands onto the outriggers.

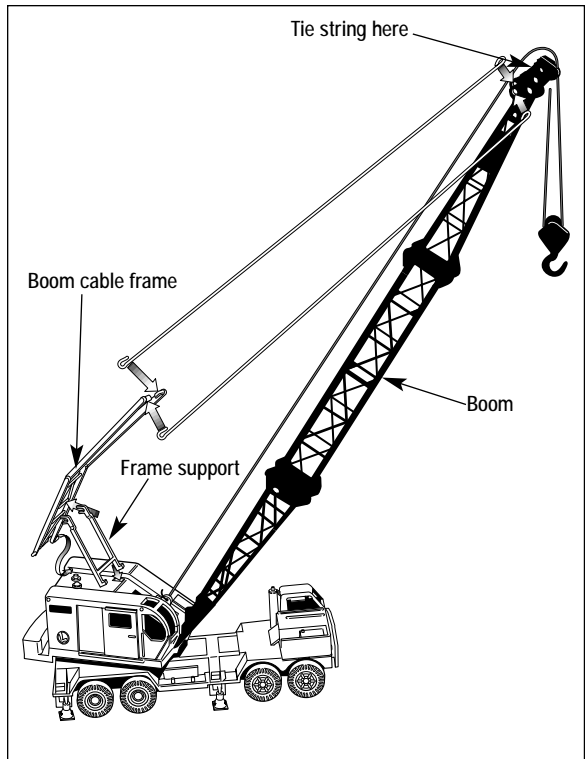


Figure 9. Crane assembly

Maintaining and servicing your set

Securing the vehicles to the flatcar

Use the elastic tie-downs to secure the vehicles to the flatcars. Insert a metal clip through a hole in the flatcar, wrap the elastic band around the front or rear of the vehicle, and insert the other clip into a hole on the opposite side of the flatcar.

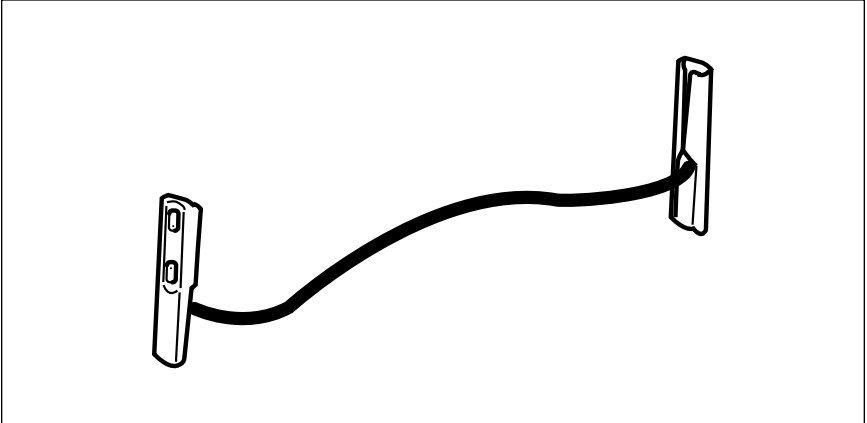


Figure 10. Elastic tie-downs

Limited Warranty/Lionel Service

This 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.

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 _____



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