LIONEL
SINCE 1900 ®

Lionel Pennsylvania K-4 Pacific Steam Locomotive and Tender Owner's Manual

featuring **TRAINmaster**
C·O·M·M·A·N·D

and

RailSounds ™

Congratulations!

Congratulations on your purchase of the Lionel Pennsylvania K-4 Pacific steam locomotive and tender! On the outside, this locomotive 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 powerful locomotive is ready for duty on your layout.

Features of this locomotive

- **TrainMaster Command Control equipped—able to run in the TrainMaster Command Control environment or in the conventional environment with a standard transformer**

- **RailSounds sound system with CrewTalk communication and TowerCom announcements**

- **Powerful maintenance-free motor with momentum flywheel**

- **Two traction tires**

- **Operating headlight**

- **Puffing smoke unit**

- **Variable firebox glow**

- **ElectroCoupler on rear of tender**

- **Minimum Curve: O-27**

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Quick Start

Transformer operations

1. **Place your locomotive on Lionel or Lionel-compatible O-27 or larger track.**
2. **Connect the tether and drawbar between the locomotive and tender.**
3. **Power your locomotive at 8-18 volts with your alternating-current (AC) transformer.**

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

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

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). Both products are offered together in the TrainMaster Command Set (6-12969).

1. **Turn off track power and plug-in the Command Base.**
2. **Connect the tether and drawbar between the locomotive and tender.**
3. **Place your locomotive on Lionel or Lionel-compatible O-27 or larger track.**
4. **Increase track voltage to full power (no more than 19 volts AC).**

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

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

Conventional transformer operations

Conventional operations

Your locomotive is capable of operating in the conventional environment, controlled by 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 **WHISTLE** 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 15-21 to see how to operate your locomotive in the TrainMaster Command Control environment.

Conventional transformer operations

Operating your locomotive in the conventional environment

1. **With your transformer turned off, place your locomotive on Lionel or Lionel-compatible O-27 or larger track.**

2. **Connect the drawbar and tether between the locomotive and tender as illustrated in Figure 1.**
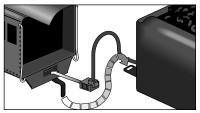

Figure 1. Drawbar connection

Note! The four-pin locomotive receptacle is keyed to allow the tether to be plugged in only one way.

3. **Power your locomotive at 8-18 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 may result in damage to sensitive electronic components.

4. **Wait three to eight seconds as your locomotive determines whether it is in a conventional environment or a TrainMaster Command Control environment.** The headlight flickers as the locomotive searches for a signal from the Command Base. When the locomotive has determined that a Command Base is not connected to the track, the flickering will stop and the headlight will remain illuminated. You are ready for operation in the conventional environment.

5. **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 **WHISTLE** and **BELL** buttons on your transformer to activate those features. Refer to page 13 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 2 for the location of the Command reverse unit switch.

1. Use your transformer's **DIRECTION** button or interruptions in track power 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 2. Locomotive switch locations

Conventional transformer operations

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

To 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. 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.

Remote-Control
Track Section

Figure 3. Magnetic coupler operation

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.
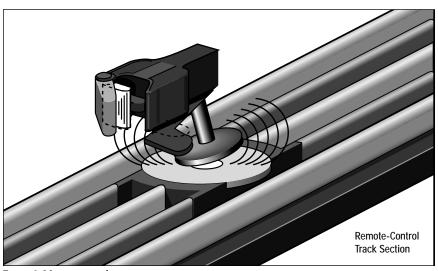
When you operate your locomotive in the conventional environment, you get realistic chuffing sounds, which automatically increase through four levels as the speed of the locomotive increases. You can sound the locomotive's whistle or activate the ringing of the bell. When you are through with operations and power down the track, your locomotive's RailSounds sound system starts a realistic steam shutdown sequence (a nine-volt alkaline battery is required).

When you operate your locomotive in the TrainMaster Command Control environment, you get full control of the RailSounds sound system, including the whistle and bell sounds. The locomotive's chuffing sounds automatically increase. In the Command Control environment, the release of the ElectroCoupler 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 yardmaster. Whenever you choose to shutdown your locomotive, the realistic shutdown sequence commences (a nine-volt alkaline battery is required).

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 in the tender 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 4 on page 11 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 body screws from the underside of the tender. Refer to Figure 4 on page 11 for the location of the screws.
2. Lift the body off the frame. Be careful to avoid pulling on 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 clip.
6. Replace the body on the frame and secure it with the body mounting screws. Be careful to avoid pinching any wires between the body and the frame.

RailSounds sound system operations

Installing the battery (continued)
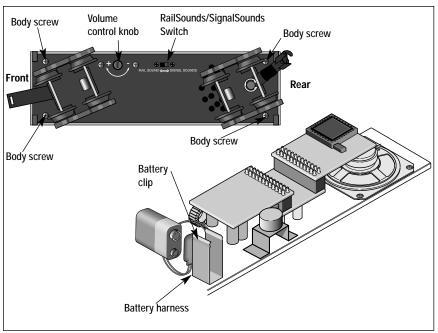

Figure 4. Servicing the tender

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 chuffing sounds automatically increase with the locomotive's speed. In the conventional environment, the whistle and bell sounds are activated by your transformer controls or Sound Activation Buttons.

To silence the chuffing sounds, slide the RailSounds sound system switch located on the underside of the tender to the SIGNALSOUNDS position before you power up the locomotive or after the locomotive has been powered down for a minimum of ten seconds. The whistle and bell sounds will still be active. To adjust the volume, use the volume control knob located on the underside of the tender.

> **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 pages 10-11.

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

- **DynaChuff.** Your locomotive's speed automatically determines the level of chuffing sounds. At low speeds, the chuffing is relaxed. When you highball down the mainline, the chuffing is labored.

- **MultiWhistle.** A different whistle sound at different speeds—a RailSounds sound system exclusive.

- A**uthentic 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 steam 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 **WHISTLE** and **BELL** buttons, you will need to install Lionel no. 610-5906-001 Sound Activation Buttons (available separately) to activate the locomotive's whistle 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

Black wire

Common/Ground/U

Existing wire

POWER SUPPLY

Red wire

Power/A

LIONEL SOUND ACTIVATION BUTTON

Lionel no. 610-5906-001 Sound Activation Button for activating the bell

For AC transformers lacking bell and horn/whistle buttons

Red wire

Common/Ground/U

Existing wire

POWER SUPPLY

Red wire

Wire nut

Power/A

Black wire

Black wire

Lionel no. 610-5906-001 Sound Activation Button for activating the whistle

LIONEL SOUND ACTIVATION BUTTON

LIONEL SOUND ACTIVATION BUTTON

Lionel no. 610-5906-001 Sound Activation Button for activating the bell

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 15-21 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 pages 10-11.

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

- **DynaChuff.** Your locomotive's speed automatically determines the level of chuffing sounds. At low speeds, the chuffing is relaxed. When you highball down the mainline, the chuffing is labored.

- **MultiWhistle.** A different whistle sound at different speeds—a RailSounds sound system exclusive.

- **Authentic bell.** Press **BELL** on your transformer 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 the ElectroCoupler, and you get the sounds of the coupler opening.

- **TowerCom announcements.** TowerCom announcements are messages from the dispatcher.

- **CrewTalk communication.** CrewTalk communication is unintelligible radio communication.

- **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 steam 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). Both products are offered together in the TrainMaster 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.
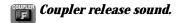
Keep in mind that track power is like gasoline in the tank of a car—it gives you the power to go places, but it doesn't tell you where to go or how fast to get there.

Operating your 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-27 or larger track.**

3. **Connect the drawbar and tether between the locomotive and tender.** Refer to Figure 1 on page 6.

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.

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 20.

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.***

COUPLER F ***Coupler release sound.***

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

AUX 1 ↑ Activates the numeric keypad.

AUX 2 Y Toggles the headlight on and off.

Accelerates the locomotive with a clockwise rotation. Decelerates the locomotive with a counter-clockwise rotation. ***Speed-dependent chuffing sounds. DynaChuff synchronized chuffing effect.***

WSTL / HRN Activates the locomotive's whistle. Release the button to discontinue the sound. ***Multiwhistle steam whistle sound.***

BELL Toggles the bell sound on and off. ***Bell sound.***

DIR 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.***

BOOST Increases the locomotive's speed while the button is pressed. Release the button to return to the initial speed. ***Labored chuff.***

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

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

See page 21 for the momentum settings

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TrainMaster Command Control operations

CAB-1 Remote Controller numeric keypad commands

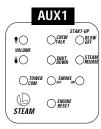**W**hen you press the **AUX1** button on your CAB-1 Remote Controller, you turn the numeric keypad into ten command buttons. These commands are specific to your locomotive, and an overlay is included to help you learn these functions. After you press the **AUX1** button, you will be able to press any 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. 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. ***CrewTalk communications.***

3 ***Start-up sequence commences. Steam blow-off sound.***

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

5 Activates the steam locomotive shutdown sequence. The locomotive must be idle for the shutdown to occur. ***Steam shutdown sequences.*** Note that the whistle and bell will not sound until you restart the RailSounds sound system. ***CrewTalk communications.***

6 ***Steam release sound.***

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.***

8 Turns off the smoke unit if the smoke unit switch is in the ON position ***Steam release sound.***

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

Note! **AUX1**, **8** and **9** function only if the locomotive's smoke unit switch is in the ON position.

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.

Volume

Use the volume control knob located on the underside of the tender to set the maximum volume level. To make quick adjustments below that level, use your CAB-1 Remote Controller to press **AUX1**, **1** to raise the volume or **AUX1**, **4** to lower the volume.

Setting the maximum speed (high voltage)

You may use your CAB-1 Remote Controller to set your locomotive's maximum speed. This will prevent the locomotive from derailing 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 voltage 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 (stall voltage)

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.

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

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 features, see page 21.

1. Slide the Command reverse unit switch on your locomotive to the PROGRAM 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

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. All factory default settings will be restored when you reprogram the locomotive.

1. Slide the Command reverse unit switch to the PROGRAM 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 **74** 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 locomotive

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, then add 10 to 15 drops of fluid into the stack of your locomotive. It is easier to add smoke fluid if the locomotive is powered down or the smoke unit is off. Power up your locomotive with the smoke unit switch in the ON position, 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.

When the smoke unit switch is in the ON 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.

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 OFF position. Refer to Figure 2 on page 7 for the location of this switch.

In the TrainMaster Command Control environment, press **AUX1, 8** on your CAB-1 Remote Controller to turn off the smoke unit. To turn on the smoke unit, be sure that the smoke unit switch is in the ON position, then press **AUX1, 9**.

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

Maintaining and servicing your locomotive

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.
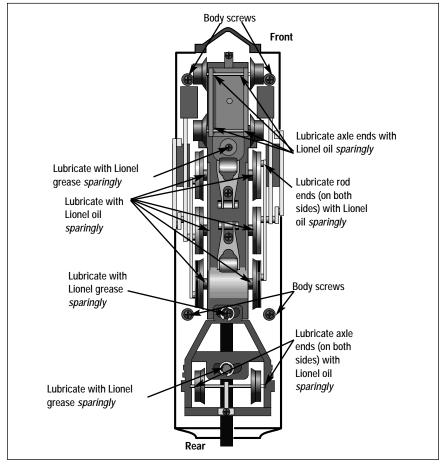

Figure 5. Lubrication points and screw locations

Maintaining and servicing your locomotive

Maintaining your locomotive's handrail antenna

The handrails on your locomotive are the antennas that receive the digital communication from the Command Base. For optimum reception, the handrails have been insulated from the die-cast body. Please handle the locomotive carefully to avoid handrail damage. The handrails should not touch the locomotive's body.

If your locomotive appears to have problems receiving communications from the Command Base, be sure that the ends of the handrails are insulated from the body with either an insulating washer or handrail stanchion.

Maintaining and servicing your locomotive

Replacing the traction tires

Two of the locomotive's drive wheels are equipped with rubber tires to increase the tractive effort of your locomotive, allowing it to pull more cars at once.

During the course of normal operations, the traction tires may become worn out. Replacement traction tires are included with your locomotive. Follow these steps to replace a worn traction tire.

1. Unscrew the drive rod nut from the wheel using a 3/16" nut driver.

2. Slip off the old traction tire and remove it from under the drive rod.

3. Stretch the new traction tire around the wheel.

4. Reinstall and tighten the drive rod nut.

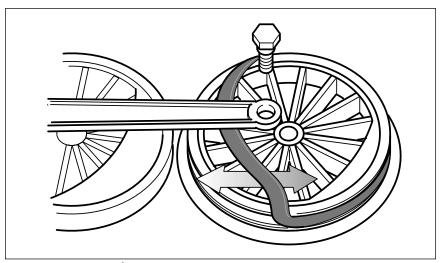   **Note!** This service can also be performed by your authorized Lionel Service Center.

Figure 6. Traction tire replacement

Maintaining and servicing your locomotive

Replacing your locomotive's lamps

Your locomotive is illuminated by three lamps. One is located directly behind the smoke box door, another is in the headlight housing, and the third is behind the motor for the firebox glow. During the course of normal operations, the lamps may require replacement.

Carefully remove the four cab screws (see page 11 for location). Lift the shell away from the frame. Take care with the various wiring assemblies connected to the shell. Find the assembly containing the expired lamp. To replace the headlight lamp, remove the two screws used to secure the headlight housing to the smoke box, and carefully remove the expired lamp assembly, and unplug the harness. The headlight lamp assembly can be replaced with Lionel part no. 620-8029-300.

The marker light lamp is removed by gently pulling upwards. Replace it with Lionel part no. 610-8049-300. The firebox lamp is replaced by lifting the bulb up out of the mounting sockets, replace it with Lionel part no. 610-8082-019.

These lamps are available at your authorized Lionel Service Center or through Lionel Service. See the Lionel Service section on page 28 for more information. Reinstall the cab and the four screws taking care to not pinch any wires during reassembly.

Note! Press **AUX2** to be sure that the lamps were not turned off before performing any lamp replacement.

Lionel part no. 610-8082-019

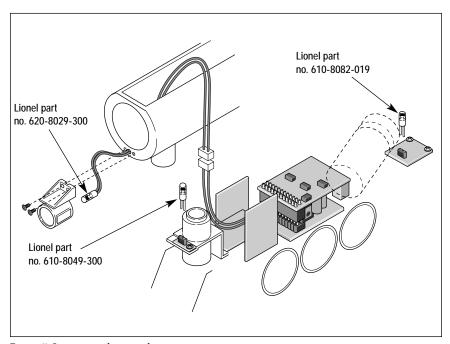Lionel part no. 620-8029-300

Lionel part no. 610-8049-300

Figure 7. Locomotive lamp replacement

Notes

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   _____