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LIONEL



Lionel 4-6-0 Camelback Steam Locomotive Owner's Manual

Command Control and RailSounds Equipped

featuring **TRAINmaster** *and* *RailSounds*
C-O-M-M-A-N-D

Congratulations

You have purchased a tough and durable locomotive—the Lionel Command Control and RailSounds equipped Camel-back. From the crisp die-cast detail and the authentic decoration outside to the advanced

technology and brute power within the boiler, your steam locomotive is ready for duty on your model railroad. Experience the superiority of today's Lionel.

- **R2LC radio unit for use with the Lionel TrainMaster® Command™ model railroad control system**
- **Powerful flywheel equipped can motor**
- **Die-cast cab and tender body**
- **RailSounds™ steam sound system—digital samples from a real steam locomotive**
- **Smoke generator that produces clean, safe, and realistic smoke**
- **Brilliant headlight and rear marker light on tender(directional)**
- **Die-cast Electrocoupler™ (rear of tender)**
- **CrewTalk™ and TowerCom™**
- **Illuminated fire box glow**

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Transformer operations

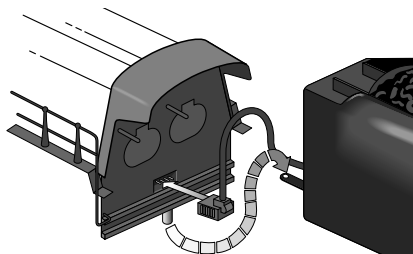
Running your steam locomotive with a Lionel transformer

1

Place your steam locomotive on Lionel or Lionel-compatible 0 gauge track.

- **With track power OFF**, connect the locomotive tether between the engine and tender. The four-pin tender plug connects with the four-pin receptacle on the locomotive. Connect the drawbar between locomotive and tender.
- The engine tether receptacle is “keyed” to allow the harness to be plugged in only one way.

Note!



2

Power up your steam locomotive with your transformer.

- **Your locomotive is designed to operate on 10-18 volts alternating current.** Virtually all Lionel and Lionel-compatible alternating-current transformers are suitable.
- **Do not power your locomotive with direct current (DC).** Damage to sensitive electronic components may occur.
- **When you first power up your track, the locomotive will wait between 3 and 8 seconds** as it “listens” for digital language from the TrainMaster Command Base (available separately). When it’s determined that it’s on a conventional (nonCommand) railroad, the locomotive’s headlight will illuminate and Railsounds will fire up. At this point, the locomotive is in neutral. (This occurs when placing the locomotive on your railroad for the first time. Thereafter, it starts in forward after every three-second power interrupt.)

Note!

3

Move ‘em out!

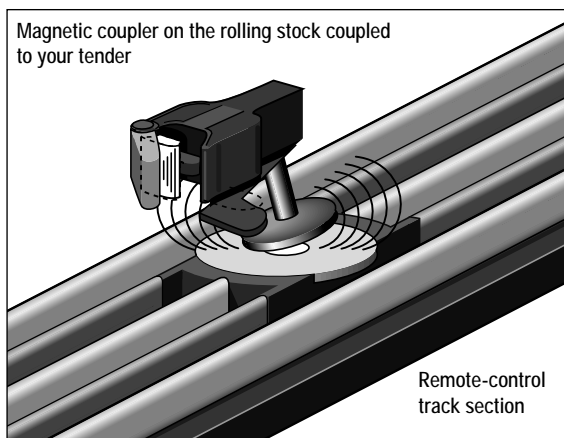
- **Get your locomotive moving.** Press the DIR button on your CAB-1 remote or Lionel transformer. This sequences the Lionel Command reverse unit (R2LC) to the next operating state. The R2LC alternates between three states: forward, neutral, and reverse.
- **Adjust track voltage** until your locomotive moves at your desired speed. To increase speed, increase track voltage. To decrease speed, reduce voltage. To stop the locomotive, cut track power.
- **To select a single operating state** (example: forward only) you can deactivate the R2LC’s sequencing function. Get your locomotive moving in the desired direction, then slide the Program/Run switch on the locomotive’s underside to PROGRAM. See page 13 for the switch location and positioning.

Transformer operations

Using your tenders *Electrocoupler* in the non-Command environment

The rear of your Lionel locomotive's tender is equipped with an Electrocoupler. When in the non-Command environment, you must first couple a piece of rolling stock equipped with Lionel magnetic couplers directly to your tender. The magnetic coupler on the rolling stock will then react to the

magnetic field generated by a Lionel remote-control track section (available separately). 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's tender mounted
Electrocoupler will NOT open manually or by
using a remote-control track section*

Transformer operations

Adding fluid to your Locomotive's smoke generator

Your 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. Pierce the tube end with a pin, then add four to eight drops of fluid directly into the Locomotive's stack. Smoke production will commence momentarily, faster if you run your Locomotive at speed. When smoke production wanes, add more fluid (four to eight drops).

If you prefer to have a smoke free locomotive, there is a switch located on the bottom of

the engine under the cab marked SMOKE ON OFF (see page 13 for location). Move the switch to off and your locomotive will stop smoking.

An idle locomotive will not smoke; press AUX1 and 9 (press for a maximum of 10 seconds) to engage the smoke generator at idle/in neutral. When the smoke unit is on always keep a small amount of smoke fluid in the Locomotive's 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.

Tire-Traction™

Your locomotive is equipped with Tire-Traction. This means that two of the drive wheels are fitted with rubber traction tires to enhance tractive effort so your locomotive can pull many cars at once.

Lionel locomotives with Tire-Traction grip the track, enabling them to pull heavy loads at higher speeds.

Lionel has provided an extra set of traction

tires to replace the installed traction tires if they wear out. Simply unscrew the drive rod nut from the wheel and slip off the old traction tire and remove it from under the drive rod. Place the new one on the wheel in the reverse of this step and tighten the drive rod nut back up and your ready to pull that long freight back to the yard.

Transformer operations

Your locomotive's RailSounds system—the basics

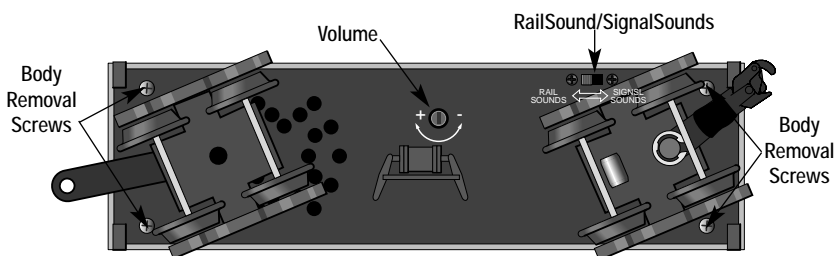
Lionel RailSounds is the most realistic model railroad sound system in the world. Your locomotive RailSounds features digital samples for the ultimate in realism.

Begin by installing a 9-volt alkaline battery in your tender. This ensures interruption free operation of RailSounds. Remove the tender body as described on page 15. Connect the 9-volt alkaline battery to the battery clip (remove the protective cover from the battery clip), and place the battery in the holder inside the tender.

When you first apply track power, the loco-

motive's RailSounds system delivers an authentic start-up sequence, followed by the sounds of the locomotive at idle. As the locomotive's speed increases, the chuff rate will increase too.

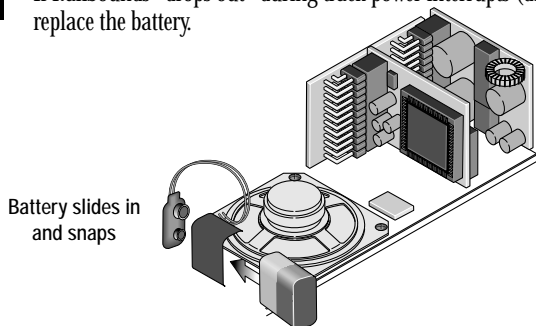
To silence the steam chuff (horn and bell remain unaffected), slide the RailSounds switch, located underneath the tender, to the SIGNAL SOUND position before powering up the locomotive. The switch is located on the bottom of the tender frame in the middle of the tender.



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

Note! Discontinue locomotive power *for 10 seconds* before changing the RailSounds/Signalsounds ON/OFF switch position.

Note! If RailSounds “drops out” during track power interrupts (direction change), replace the battery.



Transformer operations

Notes on RailSounds

- The volume control is located on the bottom of the tender frame and marked with a + and -. Turn the volume set screw clockwise or counter clockwise to adjust the volume.
- Listen for incidental locomotive sounds during RailSounds operation. They're automatic and, of course, authentic.
- The 9-volt alkaline battery you installed ensures *continuous* steam locomotive sounds.
- Longer track-power interruptions (including locomotive derailments) cause RailSounds to shut down after about 7 seconds.
- For even *more* authentic RailSounds effects, operate in the TrainMaster Command environment.

Experiencing the range of your locomotive's RailSounds system

With RailSounds, 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.** Your Locomotive's speed determines the steam chuff rate.
- **MultiWhistle™.** Different whistles every time—a RailSounds exclusive.
- **Authentic bell.** Press BELL on your CAB-1 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 3-5 seconds, and listen for the air-release sound—that's the Locomotive telling you its Liontech Command reverse unit has just reset to forward operation.
- **Shutdown sequence.** No other model railroad sound system shuts down like RailSounds. 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, RailSounds will commence with an authentic steam locomotive shutdown sequence about two seconds after the air-release reset occurs.

Note! *Battery must be installed for shutdown sequence.*

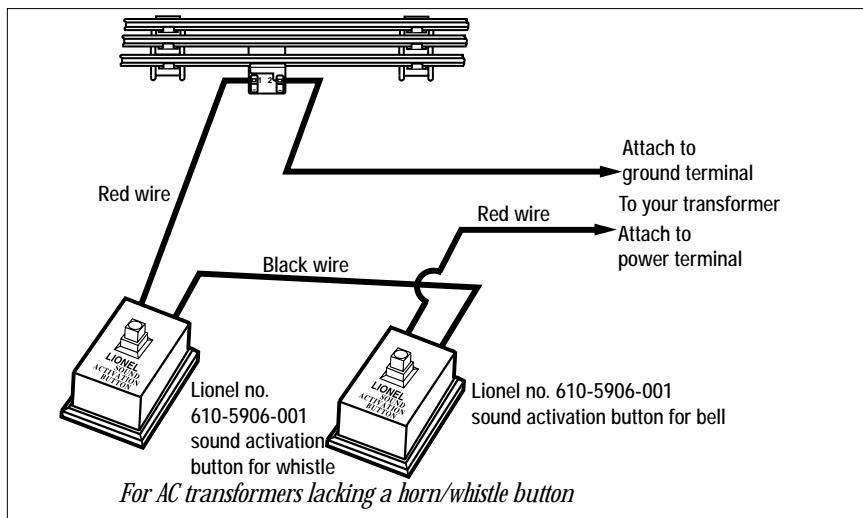
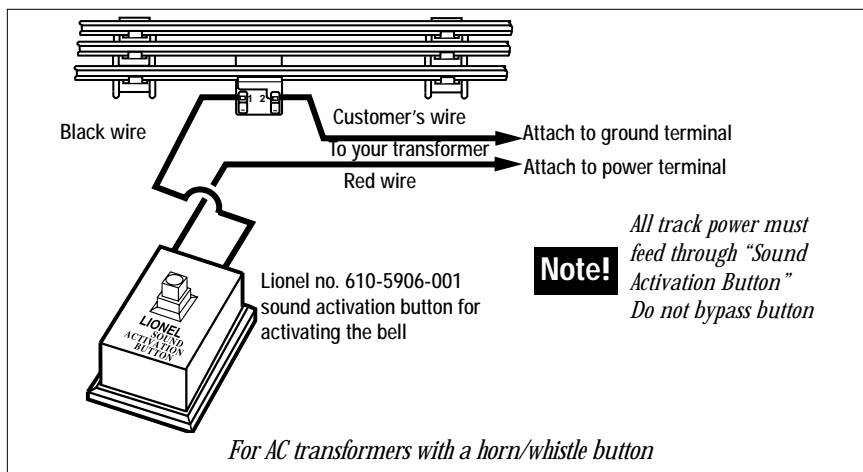
Note! *Allow the locomotive and tender to set on the track until the shutdown sequence is complete. Removing the tender before shutdown is complete may cause the sound to "loop" and not shut off. If this happens, place engine and tender back on the track with the tender connected and wait for shutdown sequence to complete, then remove from track if desired.*

Transformer operations

Installing the Lionel sound activation button

To operate the bell and whistle sounds when operating your steam locomotive in conventional mode, you'll need to install the

Lionel no. 610-5906-001 sound activation button (available separately). Connect the button(s) as shown below.



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 RailSounds.

TrainMaster™ Command operations

Your steam locomotive in the TrainMaster™ Command environment

Lionel TrainMaster™ Command is the fun and sophisticated model railroad control system from Lionel. Your steam locomotive features the Liontech Command reverse unit, which acts as both a conventional reverse unit as well as the key to unlocking many extra features when you operate in Command mode.

TrainMaster™ Command gives you the power to operate multiple Command-

equipped locomotives on the same track, at the same time. It's the most fun you can have with electric trains, and it's incredibly easy too! Just follow the directions below and you'll be on your way.

To operate in Command, you need a Command Base and a CAB-1 remote. Find them both at your authorized Lionel retailer.

1 Place your steam locomotive and tender on Lionel or Lionel compatible O gauge track.

- **Make sure track power is OFF before placing it on track.**
- **Make sure your Lionel Command Base is ON** and its communications wire is connected to the COMMON post on your Lionel transformer or the U on any of your installed PowerMasters.
- Once positioned on the track, **increase track voltage to FULL** (on PowerMaster, slide the CMD/CONV switch to CMD).

2 Address your steam locomotive with CAB-1.

- **Press ENG and 1** on the numeric keypad of your CAB-1 remote. This command is sent by CAB-1 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 Lionels listen to this digital communication, but they *do not respond* until they hear their own ID number.
- The digital language of TrainMaster Command—and not track power—controls the actions of Command-equipped Lionels. 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.
- All locomotives come factory-programmed with an ID# of "1." To change your steam locomotive's ID#, see page 13.

3 Move 'em out!

- Throttle up or press any command button on CAB-1. Your steam locomotive will respond to your every command. Read on. The fun is just beginning!

TrainMaster Command operations

Running your steam locomotive in the TrainMaster Command environment

Example address Locomotive #1

PowerMasters set to CMD or traditional power supplies ON FULL



Press ENG



Press 1 (the ID#)

Throttle up/press any command button

Your Command Control steam locomotive comes programmed with an ID# of "1." To get your steam locomotive in action, set PowerMasters to CMD or set all power supplies on full. Press ENG and "1" on CAB-1. Turn the throttle or press any command button; RailSounds starts up. Your steam locomotive is ready for Command operations.

CAB-1 commands for your steam locomotive

Steam locomotive RailSounds effects in bold italic



Tender rear coupler releases. **Coupler release sounds.**



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



Turn the THROTTLE to the right to accelerate, left to decelerate. **Speed-**

dependent Chuff.
DynaChuff dynamic chuffing effect.



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



Press WSTL/HRN to activate the steam 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 steam locomotive's previous speed.



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

TrainMaster Command operations

RailSounds in the Command environment

Your steam locomotive's RailSounds system gives you even more in the TrainMaster Command environment.

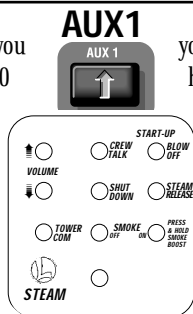
- **Bonus sounds** like squealing brakes

with the CAB-1 BRAKE command.

- **Incidental sounds** you control with CAB-1 numeric keypad commands, like steam letoff and steam release effects.

CAB-1 numeric keypad commands for your steam locomotive

When you press AUX1 on CAB-1, you turn the numeric keypad into 10 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 keypad overlay included with



your steam locomotive is designed to help you learn the auxiliary features specific to this classic locomotive.

**Steam locomotive
RailSounds effects in bold
italic.**

Note! Pressing AUX1 will provide steam release sound to let you know the key pad is ‘open’.

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

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

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

3 Starts up RailSounds. **Startup sequence commences. Steam blowoff sound.**

4 Lowers the volume of Rail- sounds. **Sound volume decreases.**

5 Activates the RailSounds steam shutdown sequence. Just like the real thing, your steam locomotive must be idle for shutdown to occur. **Steam shutdown commences.** Remember, the whistle and

bell will not sound until you restart RailSounds.

6 **Steam release sound.**

7 TowerCom™ is an audible announcement. **There is a four second delay in this function.**

8 Turns off the smoke generator.

9 Turns on the smoke generator. Press and hold 9 (10 seconds maximum) to initiate Smoke Boost™—it superheats the smoke generator and enhances smoke output when you start running your steam locomotive. See notes on filling or turning off the smoke generator on page 5.

Note! AUX1-9 only works if the smoke unit switch is in the on position

TrainMaster Command operations

Tuning your steam locomotive's performance

MOMENTUM

Simulate the labored performance of a locomotive pulling a heavy load with momentum. Press L, M, or H (located under CAB-1's removable panel) for light, medium, or heavy momentum. The R2LC remembers the setting until you change it. For delayed response, use H. For quick response, choose L.

BOOSTING AND BRAKING

Use the BOOST and BRAKE command buttons for incremental control of speed *and* a superior method for handling grades, stops-and-starts, and more. Plus, using BRAKE in the Command environment gives you a bonus RailSounds effect—the ultrarealistic sound of squealing brakes.

STALL

Make your locomotive feel more responsive by setting a “stall” voltage. Get your locomotive moving, then press SET; the locomotive will stop. The headlight will flash, indicating it's in the SET mode. Turn the throttle clock-

wise to get the engine moving, then decrease speed until the locomotive just stops. Then press SET again; the R2LC remembers the stall setting until you change it. To clear stall, press SET twice, holding it for one second each time.

HIGH VOLTAGE SETTING

Press SET, headlight will flash. Get your locomotive moving to the maximum speed you want it to run, press BOOST. Use this to keep your locomotive from accidentally being derailed at high speed.

SOUND QUALITY

To achieve your preferred RailSounds master volume level, use the volume control dial located on the bottom of the tender. Turn the dial 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 numeric keypad's volume control. Pressing AUX1 and 4 on the keypad lowers overall RailSounds output.

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

Reprogramming R2LC circuit boards to restore features

Due to the inevitable derailments, static, and the nature of electricity, it is possible that your R2LC could someday lose its setup program. The symptoms of this condi-

Step 1: Move switch on locomotive from run to program.

Step 2: Turn on Command Base.

Step 3: Place locomotive on track, then turn on power to track.

Step 4: Press “ENG” then input locomotive's ID#. Press “SET”

Step 5: Press “ENG”, then the ID#, “AUX1”, then press 4 for your locomotive.

tion would be unresponsiveness in command mode. This can be easily remedied by “reprogramming” your R2LC using the following steps.

Step 6: Turn off power to track, wait ten seconds.

Step 7: Remove locomotive from track, move switch from program to run.

Step 8: Place locomotive back on track, turn power on to track.

Step 9: Press “ENG” and ID#, then operate as normal.

TrainMaster Command operations

Assigning your locomotive a new ID#

Example

Assign a new I D# to your Command-upgraded locomotive

Command Base ON

Place the locomotive on track

PowerMasters set to CMD or traditional power supplies ON FULL

Set the locomotive reverse unit control switch to PROGRAM

Turn track power on (PowerMasters):



Press BOOST

Program the locomotive with a new ID#:



Press ENG



Press a number you choose (the ID#)



Press SET

Set the reverse unit control switch to RUN

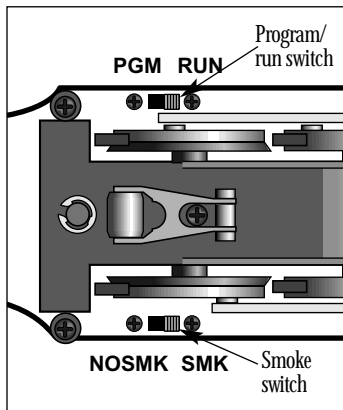
Your locomotive remembers its ID# forever; change it any time with these steps

Set the locomotive's reverse unit program switch to PROGRAM. When you've finished programming the ID#, set the switch to RUN.

As your fleet of Command-equipped Lionel's 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.

Turn the Command Base ON and place the locomotive on track. Power up, then set the locomotive's reverse unit control switch to PROGRAM (see the illustration). Using CAB-1, press ENG, the locomotive ID# (you select the number), then press the SET button located under CAB-1's removable panel. Hear the whistle blow (or see the headlight flash if RailSounds is off); that's the R2LC confirming the new ID#. Set the Program/Run switch to RUN. Your locomotive is now 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, 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 to aid in remembering.



Maintaining your locomotive

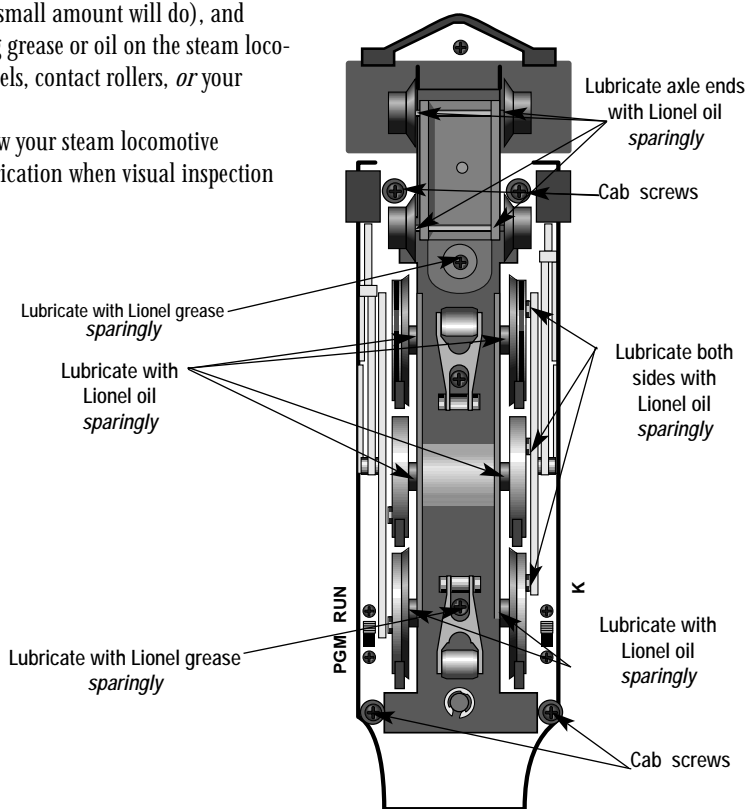
Lubricating your steam locomotive

Help your Lionel steam locomotive lead a long and productive life on your railroad by maintaining it properly.

We recommend you purchase a Lionel Lubrication and Maintenance Kit (no. 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 steam locomotive's wheels, contact rollers, *or* your track.

You'll know your steam locomotive requires lubrication when visual inspection

reveals dryness on the parts indicated in the illustration. Remove accumulated dirt and dust before lubricating, and always lubricate any locomotive emerging from prolonged storage. Also, *lightly* lubricate the steam locomotive's side rods after each 10 hours of operation.



Do not lubricate your locomotive's electric motor. It has been pretested and all the necessary moving parts have been sufficiently lubricated for life at the factory and should run smoothly for many years to come. If

you have any difficulty in the operation of your engine see the Warranty and service section at the end of the instruction sheet for more information.

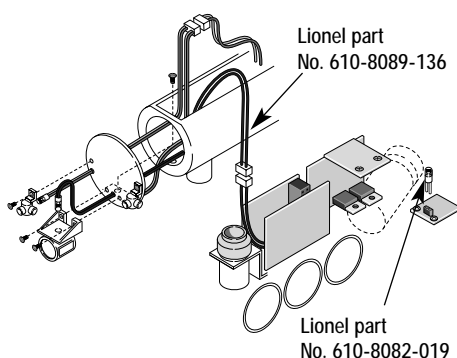
Maintaining your locomotive

Replacing your steam locomotive's lamps

Your steam locomotive is illuminated by two lamps, one is located directly behind the boilerface, the other is behind the motor for the firebox glow. During the course of normal operation, the lamps may require replacement.

Carefully remove the four cab screws (see page 8 for location) then gently unplug the 4 handrails from the pilot. Carefully 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. The front lamp is removed by unplugging the connector on the wire harness, then carefully pulling the bulb from the bottom of the headlight housing. The bulb can then be fed through the hole in the boiler front and replaced. Replace it with Lionel part No. 610-8089-136. The firebox lamp is replaced by lifting the bulb up out of the mounting sockets, replace it

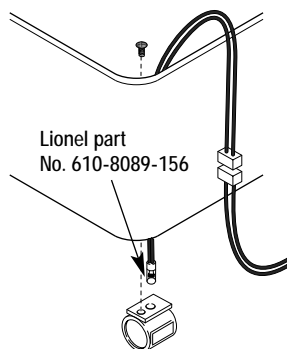
with Lionel part No. 610-8082-019. The marker lamps are LED's and should not normally require replacement. Lamps are available from your Authorized Lionel Service Center or Lionel Service. See the Lionel Service section on page 24 for more information. Reinstall the cab and the four screws taking care to not pinch any wires during reassembly.



Your steam tender marker back-up light is illuminated by one lamp located in the rear of the tender body. During the course of normal operation, the lamp may require replacement.

Carefully remove the four body screws located on the four corners of the frame. Carefully lift the shell away from the frame. Find the expired lamp. Remove the bulb by unplugging the wire harness at the connectors, then gently untaping the wires, and pulling the bulb from its housing. Replace it with Lionel part No. 610-8089-156. The lamp is available from your Authorized Lionel Service Center or Lionel Service. See the Lionel Service section on page 24 for more information. Reinstall the tender body and

the four screws taking care to not pinch any wires during reassembly.



NOTE: For command or upgraded engines, press Aux2 to make sure headlamp was not accidentally turned off, before replacing bulb.

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 dealer.

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 Station, 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 Station. Your nearest Lionel Service Station 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 factory repair, you must first call 810-949-4100 or FAX 810-949-5429, 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.

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 _____

