Lionel 777
Commodore Vanderbilt Hudson
4-6-4 steam locomotive
Owner’s Manual

featuring Trainmaster and Rail Sounds
Congratulations!

You own one of the most sophisticated model trains ever built—the Lionel TrainMaster® Command-equipped 777 Commodore Vanderbilt steam locomotive. From the look of rippled sheet steel on its massive boiler to the advanced technology within, your Lionel Commodore Vanderbilt is ready for duty on your model railroad. Experience the superiority of today’s Lionel.

- Powerful Pullmor® motor
- Liontech Command™ LCRU2 reverse unit for use with the Lionel TrainMaster® Command™ model railroad control system
- Wireless Tether
- Railsounds™ digital sound system
- Smoke generator that produces clean, safe, and realistic smoke
- Die-cast ElectroCoupler (rear of tender)
- Brilliant Headlight
- CrewTalk (in command)
- TowerComm (in command)
- Magne-Traction®
- Directional lighting

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Note! Included with your Lionel 777 Commodore Vanderbilt steam locomotive are two plain center drive wheels that you may choose to have installed. Because installation requires the removal and reinstallation of some of the linkage, we recommend that you have your local Authorized Lionel Service Center perform this service.
Transformer operations

Running your Lionel Commodore Vanderbilt with a Lionel transformer

1 Place your Commodore on Lionel or Lionel-compatible O gauge track.

- Note the pull of Magne-Traction® between your Commodore and the steel track. Magnetized wheels and axles increase pulling power (more than 25 cars on straight and level track) and keep your Commodore on track while passing swiftly through curves. Your Commodore will negotiate O-42 and larger curves. Your Commodore Vanderbilt locomotive also comes with traction tires on the center drive wheels for extra railhead grip.
- With track power OFF, Connect the drawbar between locomotive and tender. That's all you have to do with Lionel's new Wireless Tether®, an infrared communication system that eliminates the plugs and wires of the past.

2 Power up your Commodore with your transformer.

- Your Commodore is designed to pull 6 heavyweight passenger cars up a standard Lionel trestle set. In conventional transformer controlled operation a minimum of 12 volts is required. In Command Controlled operation a minimum of 16 volts is required. Virtually all Lionel and Lionel-compatible alternating-current transformers are suitable; we recommend the TrainMaster Command model railroad control system.
- Do not power your Commodore with direct current (DC). Damage to sensitive electronic components may occur.
- When you first power up your track, the Commodore 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 Commodore’s headlight will illuminate and Railsounds will fire up. At this point, the Commodore is in neutral. (This occurs when placing the Commodore on your railroad for the first time. Thereafter, it starts in forward after every three-second power interrupt.)

3 Move ‘em out!

- Get your Commodore moving. Press the DIR button on your CAB-1 remote or Lionel transformer. This sequences the Liontech Command reverse unit (LCRU2) to the next operating state.
- Adjust track voltage until your Commodore moves at your desired speed.
Transformer operations

Locking your Commodore into a single operational state

To select a single operational state for your Lionel Commodore (example: forward only), you can deactivate the LCRU2’s sequencing function with the reverse unit control switch, located between the rear and center drivers on the right-hand side, under the boiler casting.

Get your locomotive moving in the desired direction, then slow it down without stopping. Set the reverse unit control switch to PROGRAM/LOCK. The Lionel Commodore is now “locked” into your chosen direction.

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

<table>
<thead>
<tr>
<th>PROGRAM/LOCK</th>
<th>FORWARD/RUN</th>
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<tr>
<td>Use this setting to choose a single operational state like “forward.”</td>
<td>Use this setting for normal operations.</td>
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Lionel Railsounds is the most realistic model railroad sound system in the world. Your Commodore features the Railsounds Hudson digital sound system for the ultimate in realism.

Begin by installing a 9-volt alkaline battery in the tender. This ensures interruption free operation of Railsounds. The battery compartment is located beneath the tender’s removable coal hatch doors. Connect the 9-volt alkaline battery to the board. When you first apply track power, the Commodore’s Railsounds system produces sounds of the locomotive at rest. As the Commodore moves, chuffing begins, increasing with the locomotive’s speed.

To silence the steam chuffing (whistle/bell are unaffected), slide the Railsounds switch, located beneath the coal hatch doors, to the OFF position before powering up the locomotive. The whistle is activated by using the lever or button on your transformer or CAB-1. The volume control knob to raise or lower the level of sound is located under the tender hatch doors near the battery location (see above).

Although Railsounds is powered by track voltage, the battery is required for uninterrupted operation and shut-down sequences. Use only alkaline batteries.

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

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

Experiencing the range of your Commodore’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. And remember—inside your Lionel 777 Commodore are the sounds of the Railsounds Hudson digital sound system. No other electric train can offer you authentic Hudson sounds. That’s the power of Lionel.

- **Variable chuff rate.** Your Commodore’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 Commodore 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 Commodore. If you’re done with operations, Railsounds will commence with an authentic Hudson shutdown sequence about two seconds after the air-release reset occurs.

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

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Notes on Railsounds

- Use the volume control dial, located beneath the tender’s coal hatch doors, to adjust sound output (see page 5).
- Listen for incidental engine sounds during Railsounds operation. They’re automatic and, of course, authentic.
- The 9-volt alkaline battery you installed ensures continuous Hudson sounds, even during short track-power interrupts.
- Longer track-power interruptions (including locomotive derailments) cause Railsounds to shut down after about 7 seconds.
- For even more authentic Railsounds effects, operate your Commodore in the TrainMaster Command environment. See page 8 for details.
Installing the Lionel sound activation button

To operate the bell and whistle sounds when operating your Commodore with conventional transformers, you’ll need to install the Lionel no. 610-5906-001 sound activation button (available separately). Connect the button(s) as shown below.

For AC transformers with a horn/whistle button

For AC transformers lacking a horn/whistle button

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 Commodore in the TrainMaster Command environment

Lionel TrainMaster Command is the fun and sophisticated model railroad control system from Lionel. Your Commodore 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 Commodore 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)
   • A minimum of 16 volts is required to operate this locomotive in Command Control

2 Address your Commodore 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 commands 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 Command-equipped Lionels come factory-programmed with an ID# of “1.” To change your Commodore’s ID#, see page 12.

3 Move ‘em out!
   • Throttle up or press any command button on CAB-1. Your Commodore will respond to your every command. Read on. The fun is just beginning!
**CAB-1 commands for your Commodore**

**Hudson Railsounds**

Effects in bold italic-

**Coupler release sounds.**

Rear tender coupler releases. **Coupler release**

Press **AUX2** to turn your Commodore’s headlight on and off.

**Press WSTL/HRN** to activate the Commodore’s whistle, release to discontinue. **Multi-whistle steam whistle**

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

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

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

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

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

**Railsounds in the Command environment**

Your Commodore’s Railsounds system gives you even more in the TrainMaster Command environment.

- **DynaChuff™** Real steam locomotive chuffing depends on the locomotive’s load. DynaChuff simulates both labored and relaxed chuffing sounds. Highball down the mainline and hear the labored chuffing of a locomotive battling inertia. Reduce your throttle setting, and chuffing relaxes to a more sedate sound, as though the load placed on the Commodore has decreased. Experience DynaChuff on steep grades, at yard crawls, and at speed. **Another Railsounds exclusive.**

- **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.
TrainMaster Command operations

CAB-1 numeric keypad commands for your Commodore

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

**Commodore Railsounds effects in Steam Engine**

0 Stops and resets the Commodore to FORWARD. Whistle blows. 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 Railsounds. Sound volume decreases.

5 Activates the Railsounds steam shutdown sequence. Just like the real thing, your Commodore 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 that includes that engine’s road number and/or name. 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 Commodore.

Always keep smoke fluid in your Commodore’s smoke generator. Using Smoke Boost with depleted fluid can damage the generator’s element.

Note!
**Tuning your Commodore’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 LCRU2 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 Commodore feel more responsive by setting a “stall” voltage. Get your locomotive moving, then press SET; the Commodore will stop. The headlight will flash, indicating it’s in the SET mode.

Turn the throttle clockwise to get the engine moving, then decrease speed until the locomotive just stops. Then press SET again; the LCRU2 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 beneath the tender’s coal hatch doors. 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.

**Maintaining your Commodore’s handrail antenna**

Your Commodore’s handrails are more than just model grab irons—they’re the LCRU2’s antenna for receiving Command Base digital communications. Please handle the Commodore carefully to avoid handrail damage. To ensure optimum reception, both handrails are insulated from the die-cast shell. If your Commodore experiences difficulty receiving Base communications, check the handrail ends in the cab and pilot for the presence of insulating material. Ensure each stanchion is present and enjoys a proper fit. Finally, prevent the handrails from touching any part of the die-cast locomotive cab.
**TrainMaster Command operations**

**Assigning your Commodore a new ID#**

As your fleet of Command-equipped Lionels grows, give your Commodore locomotive its own ID#. Choose from any between 1 and 99. Turn the Command Base ON and place the locomotive on track. Power up, then slide the locomotive’s reverse unit control switch to PROGRAM. (See page 4 for location)

Using CAB-1, press ENG, the locomotive ID#, then press the SET button located under CAB-1’s removable panel. See the locomotive’s headlight flash; that’s your signal that the programming has been accepted. Slide the control switch to RUN.

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. If you like write the number on a small piece of tape and put this on the bottom of the frame to aid in remembering.

**Reprogramming LCRU circuit boards to restore features**

Due to the inevitable derailments, static, and the nature of electricity, it is possible that your LCRU could someday lose its setup program. The symptoms of this condition would be unresponsiveness in command mode. This can be easily remedied by “reprogramming” your LCRU using the following steps

**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#, the number 47

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

We recommend you purchase a Lionel Lubrication and Maintenance Kit (part 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 Commodore’s wheels, traction tires, contact rollers, or your track.

You’ll know your Commodore 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 Commodore’s side rods, drive rods, and linkage after each 25 hours of operation.

Note! It is recommended that you keep your track cleaned for optimum performance of your locomotive. Since the engine comes equipped with traction tires, more frequent cleaning of your track may be required.
Installing the scale pilot truck

Your Commodore comes factory-equipped with a three-rail pilot (front) truck for operation. For display, install the scale pilot truck.

Place your Hudson upside down on a soft, protective surface. Using hobby pliers, remove the retaining E-ring from the center of the truck. Next, remove the large slotted screw and washer at the rear of the truck. Lift away the pilot truck, taking care to keep the truck spring in proper position on the boss.

Now, install the scale pilot truck over the boss. Make sure the screw mount is to the rear. Reinstall the retaining E-ring. Finally, reinstall the large slotted screw and washer.

Lubricating your Commodore’s Pullmor® motor armature

With typical use, your Commodore will require occasional lubrication of its Pullmor motor armature.

If you hear excess noise during operation, or if the locomotive seems to slow down intermittently, you may need to oil the armature bearings.

Turn the Commodore over and place it on a soft, protective surface. Remove the trailing truck mounting stud and the ash pan mounting screw.

Carefully remove the trailing truck assembly and apply a small amount of oil (two drops) at the locations indicated in the illustration. The armature should be oiled after every 20 hours of operation. Reposition the trailing truck assembly and reinstall the screws.
Replacing your Commodore’s headlight

Your Commodore is illuminated by a 14-volt lamp located directly behind the boilerface. During the course of normal operation, the lamp may require replacement.

Lamp replacement involves removing the Commodore’s boiler from the frame. As a result, you may wish to have an authorized Lionel Service Center perform this task.

Begin by turning your Commodore over on a soft, protective surface. Remove the trailing truck mounting screw and the ash pan mounting screw. Remove the trailing truck assembly. Then, remove the two retaining screws located in front of the motor. Next, remove the single screw located beneath the front axle on the pilot truck. Carefully lift the Commodore’s shell away, taking care to note the wire connections between the shell and frame.

Mounted inside the front of the boiler is the lamp bracket. Locate its retaining screw and remove it. Finally, replace the expired lamp with Lionel part no. 610-8049-300, then reinstall the bracket.

Reposition the Commodore’s boiler over the frame screw holes, and reinstall the screws.

Replacing your tender’s back-up light

Your Commodore Vanderbilt tender is illuminated by a 14-volt back-up lamp. During the course of normal operation, it may require replacement.

Separate the tender body shell from the frame by removing the six mounting screws. Lift the tender body up, taking care not to pull out the wires that are attached to the inside of the body shell.

The lamp fits inside a holder, with its prongs plugged into a socket. Carefully pull out the lamp from the socket. Replace it with Lionel part no. 610-8049-300, available from your local Lionel Authorized Service Center or Lionel Service (see page 16).

Plug the replacement lamp into the socket, then reinsert the assembly into the holder. Carefully reposition the tender body over the frame, making sure that the paper gasket is in the proper position. Make sure all of the wires are inside the body before you tighten the screws.

Note! Press Aux2 to make sure headlamp was not accidentally turned off, before replacing bulb
Adding fluid to your Commodore’s smoke generator

Your Commodore 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 Commodore’s stack. Smoke production will commence momentarily, faster if you run your Commodore at speed. When smoke production wanes, add more fluid (four to eight drops).

An idle Commodore will not smoke; press AUX1 and 9 (press for a maximum of 10 seconds) to engage the smoke generator at idle/in neutral. Always keep a small amount of smoke fluid in the Commodore’s smoke generator; the generator’s element can become damaged if operated without fluid. Smoke production is greater at higher voltages and when the Commodore is pulling a heavy load or long consist.

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 his or hers lifetime 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 contacting our Website @ www.Lionel.com

If you prefer to send it 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 assure 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 products 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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