ATLAS O, LLC

ATLAS™

SD/SDP-35 Diesel Locomotive Owner's Manual

TRAINmaster COMMAND EQUIPPED

LIONEL OFFICIAL LICENSED PRODUCT

RailSounds™

Welcome to Atlas O!

Atlas O is proud to introduce this highly-detailed model of EMD's SD/SDP-35 diesel locomotive. All locomotives feature the prototypical accuracy and superior performance that is the hallmark of every Atlas O product.

Equipped with the latest version of Lionel TrainMaster® Command and Railsounds 4.0, these locomotives sound and operate as good as they look!

Experience the sights and sounds of railroading with Atlas O!

Table of Contents

Transformer operations

Running your Atlas O SD/SDP-35 with a Lionel/ Lionel-compatible transformer

1 Place your SD/SDP-35 locomotive on Atlas O or compatible O gauge track.

2 Power up your SD/SDP-35 with your transformer.

- **Your SD/SDP-35 is designed to operate on 8-18 volts alternating current.** Virtually all Lionel and Lionel-compatible alternating-current transformers are suitable.
- **Do not power your 3-rail SD/SDP-35 with direct current** (DC). Damage to sensitive electronic components may occur.

Note!

- **When you first power up your track, your** locomotive's headlights will illuminate. At this point, the locomotive is in neutral. This occurs when placing the locomotive on your railroad for the first time. When your train is first powered up, the default state will be neutral and the default direction is forward. This means whenever you power up your engine the engine will remain in neutral, and when the power is removed and again applied, the train will move forward. This condition holds true if the engine is being powered up for the first time or if the engine has been powered down longer than five seconds.

3 Move 'em out!

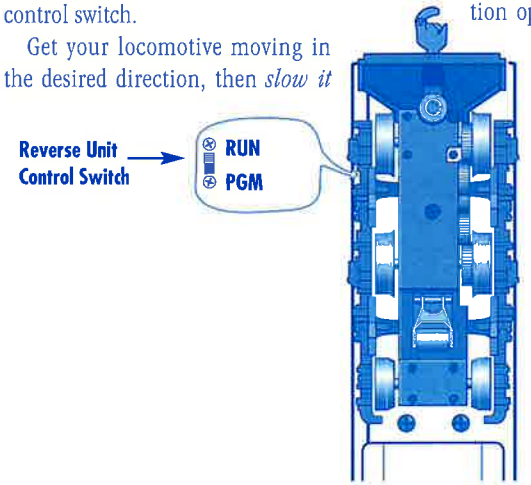
- **Get your SD/SDP-35 moving.** Press the DIR button on your CAB-1 remote or Lionel transformer. This sequences the Lionel reverse unit to the next operating state.
- **Adjust track voltage** until your locomotive moves at your desired speed. To increase speed, increase track voltage. To decrease speed, reduce voltage. To stop the locomotive, cut track power.
- **See page 4 for information on locking your SD/SDP-35 in a single operating state**

Transformer operations

Locking your SD/SDP-35 into a single operational state

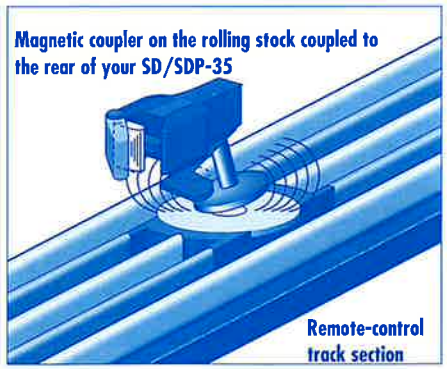
To select a single operational state for your Atlas O SD/SDP-35 (example: forward only), you can deactivate the R2LC's sequencing function with the reverse unit control switch.

Get your locomotive moving in the desired direction, then *slow it down without stopping.* Set the reverse unit control switch to PROGRAM. The SD/SDP-35 is now "locked" into your chosen direction. When you no longer want single-direction operation, just slide the reverse unit control switch back to RUN.



Using your SD/SDP-35 Electrocoupler in the non-Command environment

To use your SD/SDP-35 Electrocoupler in the non-Command environment, you must first couple a piece of rolling stock equipped with traditional magnetic couplers directly to your SD/SDP-35's electrocouplers. The magnetic coupler on the rolling stock will then react to the magnetic field generated by a 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.

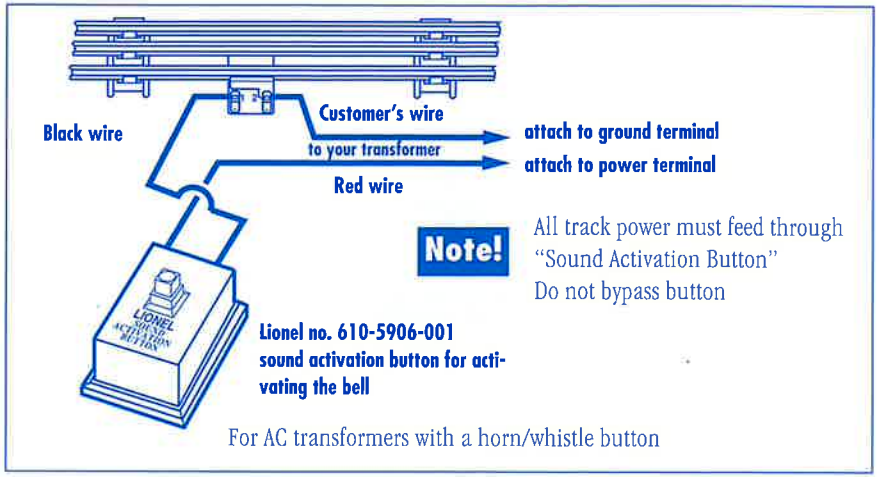


Note! Your SD/SDP-35's electrocouplers will NOT open manually or by using a remote-control track section

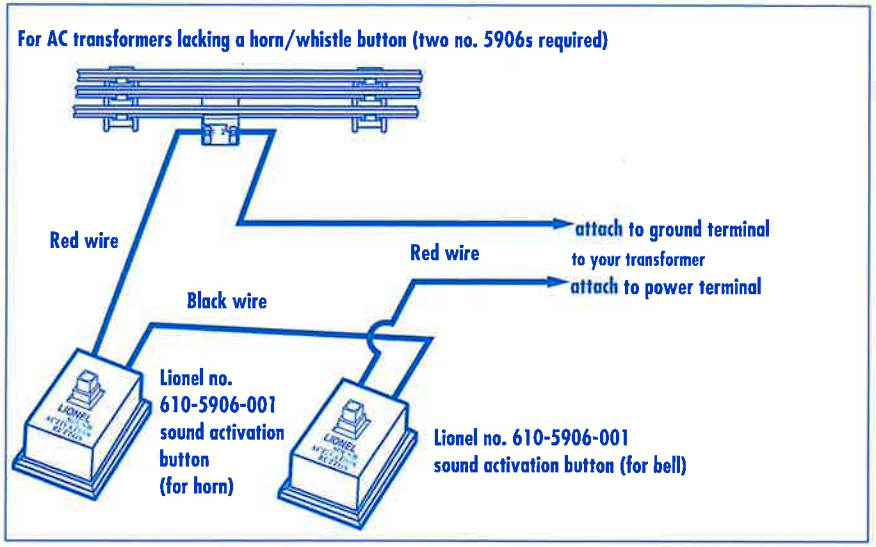
Transformer operations

Installing the Lionel no. 610-5906-001 sound activation button

To operate the bell and horn sounds when operating your SD/SDP-35 with conventional transformers, you'll need to install the Lionel no. 610-5906-001 sound activation button (available separately from Lionel). Connect the button(s) as shown below.



For AC transformers with a horn/whistle button



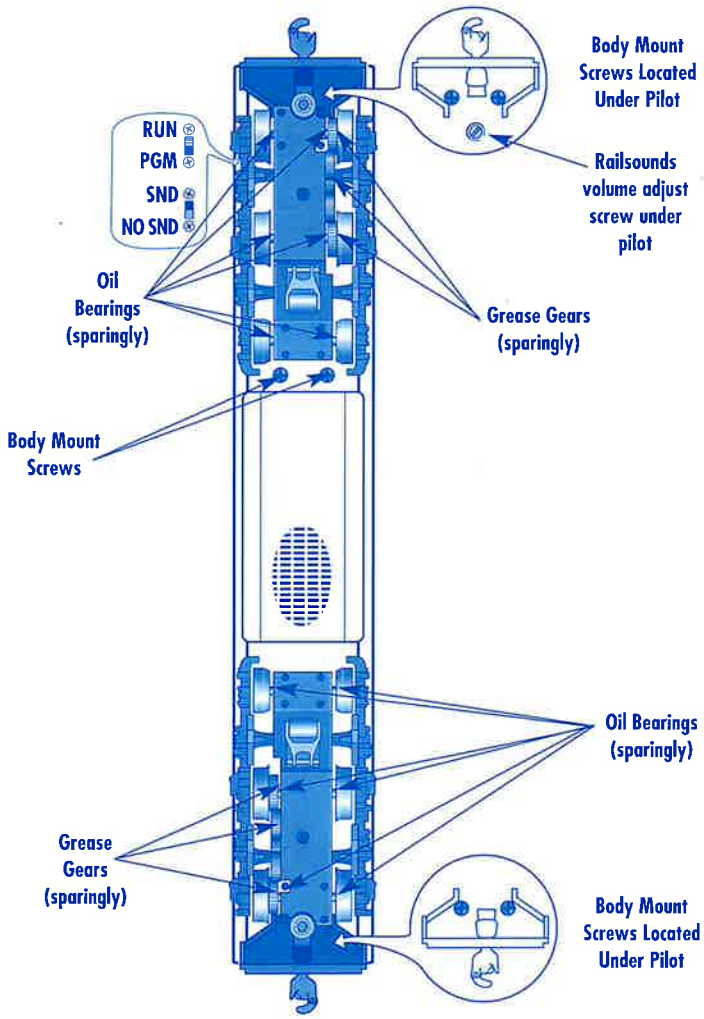
Note! The no. 610-5906-001 sound activation button (available separately) works with any Lionel AC transformer except no. 6-4690 Type MW. Transformers made by other manufacturers may not be compatible with Railsounds.

Maintaining and servicing your SD/SDP-35

Lubricating your Locomotive

Help your Atlas O SD/SDP-35 lead a long and productive life on your railroad by maintaining it properly.

Two basic rules to keep in mind: *never* over-lubricate (a small amount will do), and avoid getting grease or oil on the SD/SDP-35's wheels *or* your track. You'll know your SD/SDP-35 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.



Maintaining and servicing your SD/SDP-35

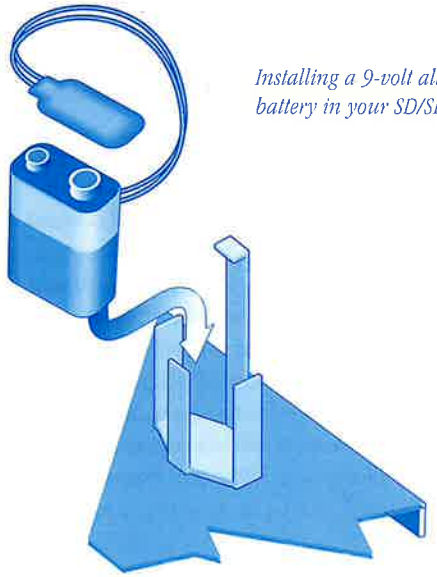
Your Lionel Railsounds system—the basics

This Atlas O Locomotive is equipped with Lionel Railsounds®. Your SD/SDP-35 features digital samples from real-life diesel locomotives for the *ultimate* in realism.

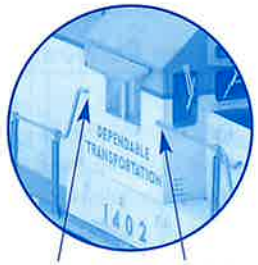
You may choose to install a 9-volt *alkaline* battery (included) in your SD/SDP-35. This ensures interruption free operation of Railsounds. The battery clip is located under the body toward the rear of the engine. Remove the engine body, refer to the diagram on page 6 for location of mounting screws and the handrail diagram on this page.

When you first apply track power, the SD/SDP-35's Railsounds system produces sounds of the locomotive at rest. As the SD/SDP-35 moves, the RPM's increase with the locomotive's speed.

To silence the diesel roar (horn and bell remain unaffected), slide the Railsounds switch on the underside of the locomotive to NO SND (see page 6), *before powering up the locomotive.*



Installing a 9-volt alkaline battery in your SD/SDP-35.



Carefully pull out handrails from the cab when removing body. The handrails are part of the chassis Use a piece of paper or an index card to protect the body paint on the cab when removing the body.

Note! Please remove protective cover from battery clip

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 ON/OFF switch position.

Note! If Railsounds "drops out" during track power interrupts (direction change), replace the battery.

Maintaining and servicing your SD/SDP-35

Experiencing the range of your locomotives 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.

- **Four diesel-roar levels.** Your SD/SDP-35's speed determines the level of diesel RPM roar—*automatically, if you prefer*: idle, half throttle, three quarters or full-speed output.
- **MultiHorn™.** A different horn sound at different speeds—a Railsounds exclusive.
- **Mechanical bell.** Press BELL on your CAB-1 or transformer to begin the effect, again to discontinue.
- **Reverse unit reset sound.** Power down your track, wait for 3-5 seconds, and listen for the air-release sound—that's the SD/SDP-35 telling you its Lionel 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 SD/SDP-35. If you're done with operations, Railsounds will commence with a realistic diesel shutdown sequence about two seconds after the air-release reset occurs.

Notes on Railsounds

- Turn the volume knob clockwise or counter clockwise in the location shown on page 6 to adjust sound output.
- Listen for incidental locomotive sounds during Railsounds operation. They're automatic and, of course, authentic.
- The 9-volt alkaline battery you installed ensures *continuous* SD/SDP-35 diesel roar.
- 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.

TrainMaster Command operations

The Command control environment

Lionel TrainMaster Command is the advanced model railroad control system from Lionel. Your upgraded Atlas O SD/SDP-35 is equipped with a Liontech Command reverse unit.

TrainMaster Command gives you the power to operate multiple Command-equipped locomotives *on the same track, at the same time.*

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 SD/SDP-35 on Atlas O or compatible O gauge track.

- **Make sure track power is OFF before placing on the 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 SD/SDP-35 using 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 locos listen to this digital communication, but they do not respond until they hear their individual ID number—in this case, "1."
- **The digital language of TrainMaster Command—and not track power—controls the actions of Command-equipped locos.** 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 locomotives come factory-programmed with an ID# of "1."** To change the ID# of your SD/SDP-35, see page 13.

3 Move 'em out!

- Throttle up or press any command button on CAB-1. Your SD/SDP-35 will respond to your every command. Read on.

TrainMaster Command operations

Running your SD/SDP-35 in the TrainMaster Command environment

Example *address Locomotive #1*

PowerMasters set to CMD or traditional power supplies ON FULL

ENG **Press ENG**

1 **Press 1 (the ID#)**

Throttle up/press any command button

Your Command-equipped SD/SDP-35 comes factory-programmed with an ID# of "1." To get your locomotive in action, set PowerMasters to CMD or set all power supplies on full. Press ENG and "1" on CAB-1. Turn the throttle or press any command button; your SD/SDP-35 is ready for Command operations.

CAB-1 commands for your SD/SDP-35

COUPLER F — Front coupler releases. ***Coupler release sounds.***

COUPLER R — Rear coupler releases. ***Coupler release sounds.***

AUX 1 — Activates keypad.

AUX 2 — Press AUX2 to turn your locomotive's headlight on and off.

Turn the THROTTLE to the right to accelerate, left to decelerate.

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

Press WSTL/HRN to activate the SD/SDP-35 horn. release it to discontinue. ***MultiHorn diesel horn sound.***

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

Press DIR—the locomotive decelerates to a complete stop; turn the throttle up, and the locomotive will accelerate in the new, opposite direction. THERE IS NO NEUTRAL STATE. ***Diesel air-release sound.***

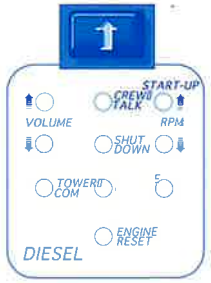
Press and hold BOOST for extra power. Release BOOST and your SD/SDP-35 will return to previous speed.

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

TrainMaster Command operations

CAB-1 numeric keypad commands for your SD/SDP-35

AUX1



When you press AUX1 on CAB-1, you turn the numeric keypad into 10 command buttons. The keypad lets you control extra command features (until you press any top-row button like SW, ACC, RTE, TR, or ENG). ***Railsounds sounds in bold italic.***

0 Stops and resets the SD/SDP-35. Resets the locomotives's direction to FORWARD. Resets Railsounds to automatic RPM operation. ***Horn blows. RPMs return to automatic.***

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

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

3 Raises Railsounds RPM level. Starts up Railsounds. ***RPMs increase. Startup sequence commences.***

4 Lowers the volume of Railsounds. ***Sound volume decreases.***

5 Activates the Railsounds shutdown sequence. Just like the real thing, *your* SD/SDP-35's *RPMs must be at idle for shutdown to occur.* Press 6 repeatedly to lower RPMs until they won't descend further. Your locomotive is now at idle.

Press 5 to initiate the shutdown sequence, following Crewtalk sound. ***Crewtalk sounds, Diesel shutdown commences.*** Remember, the horn, bell, and RPMs will not sound until you *restart* Railsounds.

6 Lowers Railsounds RPM level. ***RPMs decrease.***

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

8 ***No function on this locomotive***

9 ***No function on this locomotive***

TrainMaster Command operations

Tuning your SD/SDP-35's performance

MOMENTUM

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

BRAKING AND BOOSTING

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

SOUND QUALITY

To achieve your preferred Railsounds master volume level, we recommend you adjust your SD/SDP-35 volume control set screw (see page 6 for location). Turn the set screw left or right to reach the desired volume level.

For quick remote-control of volume *below* the master setting—for example, muting—use the CAB-1 numeric keypad's volume control. Press AUX1 and then 4 on the numeric keypad to lower overall Railsounds output.

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 excess-speed derailing. Turn off the high voltage setting by pressing SET, then BOOST, holding each for one second.

STALL

Make your SD/SDP-35 feel more responsive by setting a "stall" voltage. Get your locomotive moving, then press SET; the locomotive will stop. Turn the throttle clockwise to get the locomotive moving, then decrease speed until the locomotive just stops. 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.

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

Assigning your SD/SDP-35 a new ID#

Example ***Assign a new I D# to your Command-equipped SD/SDP-35***

Command Base ON
Place the SD/SDP-35 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 SD/SDP-35 with a new ID#:

Press ENG

Press a number you choose (the ID#)

Press SET

Set the reverse unit control switch to FORWARD/RUN

Your SD/SDP-35 set remembers its ID# forever; change it any time with these steps

As your fleet of Command-equipped locomotives grows, you'll want to give your SD/SDP-35 a more individualized number. Choose from any between 1 and 99. To make things easy, use a portion of your SD/SDP-35's cab number.

Turn the Command Base ON and place the locomotive on track. Power up, then set the SD/SDP-35's reverse unit control switch to PGM (see the illustration on page 6). Using CAB-1, press ENG, the locomotive ID# (you select: ?), then press the SET button located under CAB-1's removable panel. Hear the horn blow (or see the headlight flash if Railsounds is off); that's the R2LC confirming the new ID#. Set the reverse unit control switch to RUN. Your SD/SDP-35 is ready for operations with its all-new ID#.

We recommend that you choose an easy to remember ID# for your engine. Some possibilities are part of the engine road number, your age, 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 fuel tank to aid in remembering.

Reprogramming R2LC circuit boards to restore features

Due to the inevitable derailments, static, and the *negative* nature of electricity, it is possible that your R2LC 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 R2LC 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#, "AUX1", then press **8 for** your locomotive.

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.

Maintenance and Service

This Atlas O product is designed for trouble-free operation. Should you require service within the warranty period, please contact us at 908-687-9590. You may also send this item to the Atlas O Customer Service Department. Make sure the item is packed to prevent shipping damage; make every attempt to utilize the original packaging. Send to:

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