Atlas O Customer Service

This Atlas O product is designed for trouble free operation. Should you require service, please call the Atlas O Customer Service Department at 908-687-9590 to recieve a return Authorization Number. Make sure that the item is packaged securely to prevent shipping damage; make every effort to utilize the original packaging. Include a letter inside the package with your name, address, Return Authorization Number, and your email address or a daytime phone number. Also put in this letter your reason for returning the item to Atlas O.

Atlas O, LLC
378 Florence Avenue
Hillside, NJ 07205 USA

GE DASH 8-40B Diesel Locomotive Owner's Manual

TRAINmaster COMMAND EQUIPPED

RailSounds

ATLAS O, LLC

LIONEL OFFICIAL LICENSED PRODUCT

TRAIN AMERICA STUDIOS

TrainMaster Command operations

Fine tuning your loco's TrainMaster Command 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 locomotive's R2LC remembers this setting until you change it. For quick locomotive response, choose L.

SOUND QUALITY

To achieve your preferred RailSounds master volume level, we recommend you adjust your loco's volume screw (see page 10 for location). Turn the 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 loco 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 ID number to your locomotive.

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TrainMaster Command operations

Fine tuning EOB parameters for your locomotive

There are a number of parameters in the EOB system that can be adjusted to fine-tune the performance of your EOB-equipped locomotive. The factory settings for all of these parameters should prove satisfactory for most users. However, these commands are provided for those users who wish to optimize individual locomotive performance or to reset a locomotive to its factory EOB settings.

The first two commands specify how quickly the EOB board provides power to the motor.

To select the value used for the Pre-Pulse, use the following command:

ENG + ## + DIR + AUX1 + AUX1 + AUX1 + 5 + # (The horn will sound after the 3rd AUX1. There will be a coupler sound after the 5 and a horn sound after the #.)

As in the EOB mode selection commands, the notation ## represents the ID# (address) that you have assigned to your EOB-equipped locomotive. The notation # represents a number from 1 through 8. The lower this number, the slower will be the first speed step. It is recommended that the Pre-Pulse either be kept at its factory-default value of "1" or set to a value not higher than "2."

To select the value used for the Background Pulse, use the following command:

ENG + ## + DIR + AUX1 + AUX1 + AUX1 + 4 + # (The horn will sound after the 3rd AUX1. There will be a coupler sound after the 4 and a horn sound after the #.)

As before, the notation ## represents the ID# (address) that you have assigned to your EOB-equipped locomotive. Here, however, the notation # represents a number from 1 through 20. The Background Pulse can be moved from its factory-default value of "20" to a somewhat lower value (for example: 17, 18, or 19) if such change is needed to smooth out any low speed roughness.

There are two more EOB commands. These commands are used to set the "Master Chuff Reset Code" and the "Chuff Rate." These two parameters must be set to specific values for Squealing Brake Sounds to function properly in the 32 Speed Step and Speed Control Off modes.

Transformer (non-command) operations

Locking your locomotive into a single operational state

To select a single operational state for your Atlas O loco (example: forward only), you can deactivate the R2LC's sequencing function with the reverse unit control switch. The reverse unit control switch is the switch labeled RUN/PGM in the diagram below.

Get your locomotive moving in the desired direction, then *slow it down without stopping*. Set the reverse unit control switch to PGM. The loco 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.

RUN / PGM — Reverse Unit Control Switch
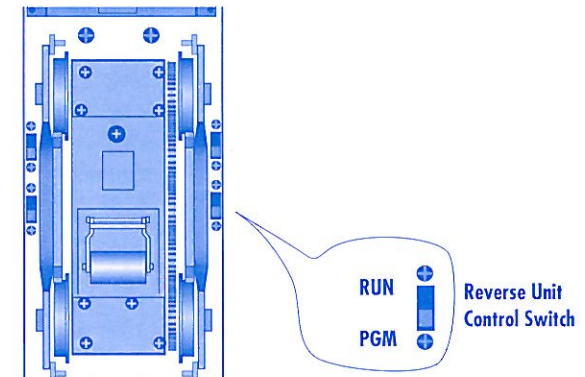
Uncoupling your locomotive in the non-command environment

To uncouple your 3-rail locomotive in the non-command environment, you must first couple a piece of rolling stock equipped with traditional magnetic couplers to the

Magnetic coupler on the rolling stock coupled to the rear of your loco

Remote-control track section

ElectroCoupler at the end of the locomotive that you wish to uncouple. 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's "trigger disc" over the central coil of this remote control track section and press "uncouple" on the controller. The magnetic field pulls the "disc" downward, and the coupler opens.
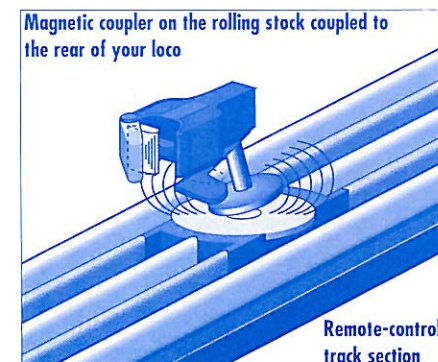
Note! Your 3-rail loco's electrocouplers will NOT open manually or by using a remote-control track section.

TrainMaster Command operations

Selecting the EOB speed control mode - 128 speed steps

The 128 Speed Step mode selection command is:

ENG + ## + DIR + AUX1 + AUX1 + AUX1 + 2
(The horn will sound after the 3rd AUX1 and again after the 2.)

In the 128 speed step mode, there are of course 128 different speed steps between a dead stop and full speed. The number of speed steps available in this mode is four times the number of steps available in any locomotive not equipped with speed control. With this mode enabled, you can actually make a locomotive start out so slowly that you will hear the coupler slack being pulled out of a long string of cars (instead hearing the coupler slack pullout sound effect from the RailSounds system).

Changing the speed of your locomotive in the 128 Speed Step mode can be done in two different ways:

• Each press of the BOOST key increases the locomotive speed by one speed step. Each press of the BRAKE key decreases the locomotive speed by one speed step. By using the BOOST and BRAKE keys in this manner, you have very precise control of the speed of your EOB-equipped locomotive.
• If you want to increase or decrease the speed of your locomotive more rapidly than you can with the BOOST and BRAKE keys, you

may use the red throttle knob on your CAB-1 remote.

In the 128 Speed Step mode, addressing a locomotive and then holding the BOOST key down does NOT make the locomotive accelerate, as it would in the 32 Speed Step mode or in the Speed Control Off mode. In this mode, the locomotive speed is unchanged until you release the BOOST key.

Similarly in the 128 Speed step mode, holding the BRAKE key down when the locomotive is moving does not gradually decrease the locomotive speed to zero, as it would in the 32 Speed Step Mode or in the Speed Control Off mode. In this mode, the locomotive speed is unchanged until you release the BRAKE key. In addition, there are no squealing brake sounds in the 128-speed step mode, as there are in the 32 Speed Step and Speed Control Off modes.
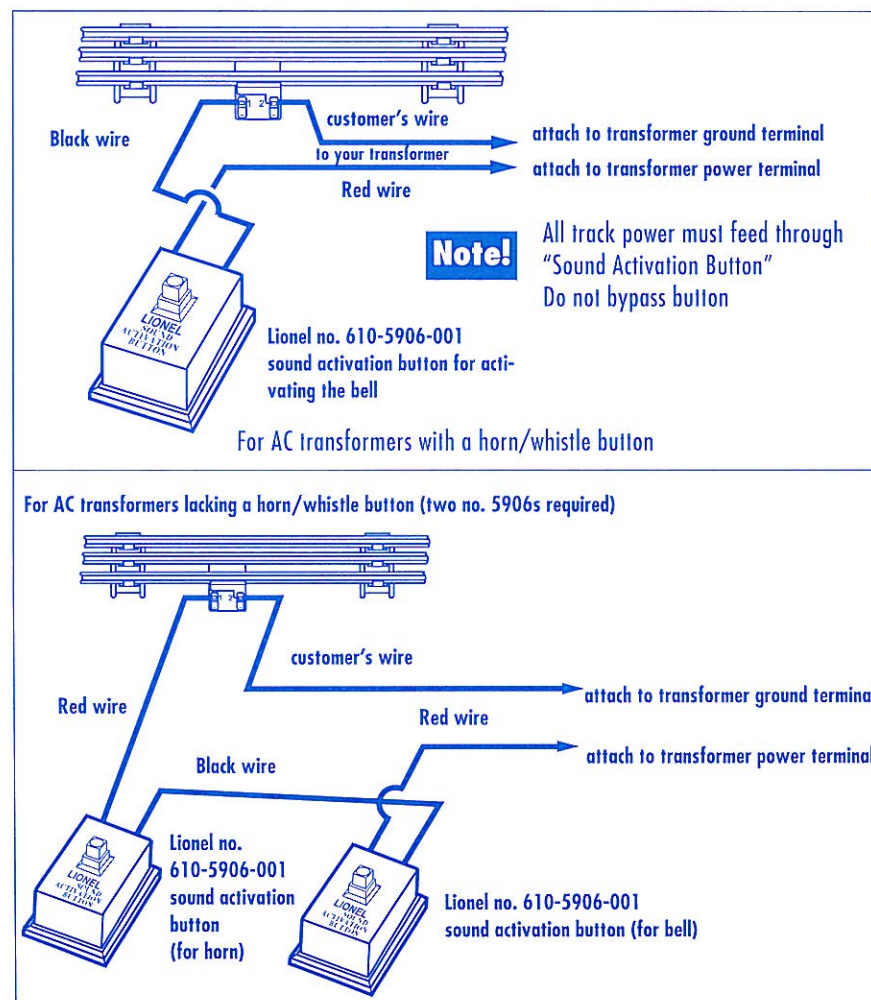
If you need to stop your locomotive in a hurry in this 128 Speed Step mode (or in any mode), press the DIR key to stop your locomotive immediately.

Transformer (non-command) operations

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

To activate the bell sounds when operating your loco with an AC transformer that has a horn/whistle button, but no bell button, you'll need to install one Lionel no. 610-5906-001 sound activation button (available separately from Lionel). If your AC transformer doesn't have a horn/whistle button, you'll need two no. 610-5906-001 buttons to activate the horn and bell sounds. Connect the button(s) as shown below.

Black wire
customer's wire
to your transformer
attach to transformer ground terminal
Red wire
attach to transformer power terminal

Note! All track power must feed through "Sound Activation Button" Do not bypass button

Lionel no. 610-5906-001 sound activation button for activating the bell

For AC transformers with a horn/whistle button

For AC transformers lacking a horn/whistle button (two no. 5906s required)

Red wire
customer's wire
attach to transformer ground terminal
Black wire
Red wire
attach to transformer power terminal

Lionel no. 610-5906-001 sound activation button (for horn)

Lionel no. 610-5906-001 sound activation button (for bell)

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.

TrainMaster Command operations

EOB speed control in the command environment

Although the Engineer on Board (EOB) speed control system uses very sophisticated technology, it is easy to navigate through all the EOB features using your CAB-1 remote. You don't even have to touch your EOB-equipped locomotive in order to access these features. *In the command environment, the EOB speed control system will operate in exactly the same manner no matter which way the Speed Control ON/OFF switch has been set.*

EOB incorporates a new technology called Torquemaster to help your locomotive perform every smoothly. Torquemaster allows the EOB speed control circuitry to vary each speed step by plus or minus five percent from its nominal value, whenever such variation is needed to give the smoothest possible performance. For example, suppose that you have a lash-up of your EOB-equipped locomotive with an Odyssey-equipped locomotive. Assume that the EOB speed control has been set to the 32 Speed Step mode and, at the first speed step, the Odyssey-equipped locomotive runs just a bit faster than the locomotive with EOB speed control. The Torquemaster system will not allow your locomotive to push or pull the Odyssey-equipped loco; instead your EOB loco will work in conjunction with the Odyssey loco to make the combination of the two locomotives into a more effective puller. The coil couplers will be tight between the two locos, and there will be no fighting between them. This also means that the EOB-equipped loco may slow down slightly when heading up a grade or speed up slightly when going down a grade. These slight changes in speed won't be anything that you can detect easily and represent normal Torquemaster behavior. Torquemaster cannot be turned off, since it is incorporated into the EOB software. Torquemaster is not used in the Speed Control Off mode.

While it is easy enough to navigate through the various EOB features, there is a slight learning curve through which you must go. You will need to learn to use several new sequences of CAB-1 key pushes. Please read through all of the EOB sections in this manual so that you will understand the purpose and usage of each EOB command.

EOB utilizes multiple CAB-1 key presses to access its many features. The most important thing to do when you enter these commands is to leave a one second delay between each press of a CAB-1 key. If you do not leave this one second delay between subsequent presses of CAB-1 keys, you will notice that some of the EOB commands will activate unwanted RailSounds commands such as the shut-down-all-sounds command, the volume-up-and-down commands, and the rev-up-and-down commands.

Please note: Your locomotive is set at the 32 speed step mode at the factory.

Transformer (non-command) operations

Experiencing the range of your locomotive's RailSounds system

With RailSounds, you experience the sounds of real railroading as never before. Simply put, it's the most sophisticated, authentic model railroad sound system in the world. When you first apply track power, the loco's RailSounds system produces sounds of the loco at rest. As the loco begins to move, the RPMs will increase with the increasing locomotive speed.

- **Four diesel-roar levels.** Your loco'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; press again to discontinue.

- **Reverse unit reset sound.** Power down your track, wait 3-5 seconds, and listen for the air-release sound - that's the loco telling you its 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 loco. 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 RailSounds volume adjust screw (located on the fuel tank) clockwise to increase the sound volume or counter clockwise to decrease the volume.
- Listen for incidental locomotive sounds during Railsounds operation. They're automatic and, of course, authentic.
- To hear all RailSounds effects in a non-command environment, install a 9-volt alkaline battery in your loco. Refer to the section "Installing the RailSounds battery in your locomotive" on page 8.
- Longer track-power interruptions (including locomotive derailments) cause RailSounds to shut down after about 7 seconds.
- To silence the diesel roar (without affect-ing the horn and bell), move the SND/NO SND switch located under the front truck of the loco (refer to diagram on page 10) to its NO SND position *before powering up the locomotive.*
- Turn off track power to your loco *for 10 seconds* before you change the position of the SND/NO SND switch.
- For even more authentic RailSounds effects, operate your loco in the TrainMaster Command environment.

TrainMaster Command operations

Running your locomotive 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 loco comes factory-programmed with an ID# of "1." To get your locomotive in action, set PowerMasters to CMD or set all power supplies to 16 to 18 volts. Press ENG and "1" on CAB-1. Turn the throttle or press any command button; your loco is ready for Command operations.

CAB-1 commands for your locomotive

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 loco horn. release it to discontinue. *MultiHorn diesel horn sound.*

Press BELL once to activate the bell; press 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 to increase speed. Release BOOST to return to the previous speed.

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

The BOOST and BRAKE keys behave differently when the EOB speed control is set to use 128 speed steps. Refer to the section "Selecting the EOB speed control mode."

Maintaining and servicing your locomotive

Body Removal

To remove the body from your locomotive, remove the six body mount screws shown in the diagram on page 10. The handrails are part of the chassis. Before removing the body, follow the directions under the figure below for detaching the handrails from the body.

Detach handrails here

3901
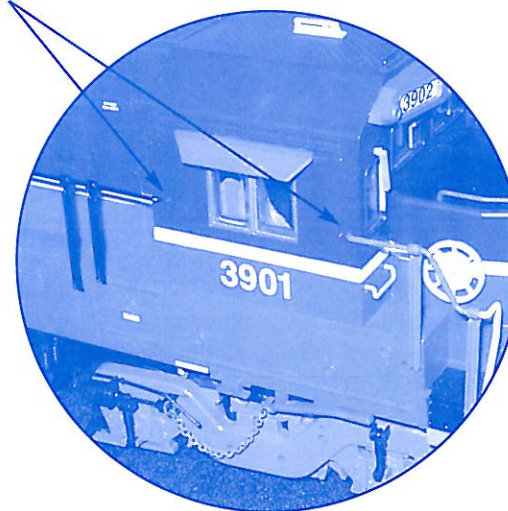
Before removing the body from the chassis, carefully pull out the handrails from the cab and insert pieces of index card between the handrails and the cab (on both sides) to protect the paint on the cab. When you remove the body, first pull up on the rear end of the long hood and gradually work your way forward until the entire body is released from the frame.

Maintaining and servicing your locomotive

Adding fluid to your locomotive's smoke generator

Your locomotive is equipped with a smoke generator that produces safe and clean white smoke during operation.

> **Note!** The locomotive is shipped with the smoke unit turned off and with very little smoke fluid in the smoke generator

There is a smoke unit control switch underneath the front truck that is marked SMK/NO SMK, as shown in the diagram on page 10. If you prefer to have a smoke-free locomotive, leave the switch at the NO SMK position.

If you wish to use the smoke unit, move the smoke unit control switch from the NO/SMK to the SMK postion before filling the smoke generator. To fill the smoke generator, add 15 to 20 drops of Lionel or Lionel compatible smoke fluid to the loco's exhaust stack. The location of this stack is shown in the diagram below.

If no smoke comes out of the exhaust stack-after you have filled the smoke unit and run the loco for 20 or more seconds, there is probably a vapor lock in the smoke genera-tor. To clear this vapor lock, simply blow gently down the exhaust stack.

To protect the smoke generator from over-heating, the smoke unit will automatically turn itself off when the smoke fluid is empty. To refill an empty smoke generator, add another 15 to 20 drops of smoke fluid to the loco's stack.

When using command control, you can increase the speed at which the smoke generator heats up by using the CAB-1 remote. First press AUX1 and then press 9 to speed up smoke generator heating. *Do not hold down the 9 key for more than 15 seconds.*

ADD SMOKE FLUID TO EXHAUST STACK

TrainMaster Command operations

The Command control environment

Lionel TrainMaster Command is the advanced model railroad control system from Lionel.

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.

You also need an alternating-current transformer to power the track. Virtually all Lionel and Lionel-compatable transformers are suitable.

1 ### Place your locomotive on Atlas 0 or compatible 0 gauge track.

- **Make sure track power is OFF before placing your loco 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 to the U terminal on any of your installed PowerMasters.
- Once the loco is positioned on the track, **increase the track voltage to 16 to 18 volts.** (on Power Master, slide the CMD/CONV switch to CMD.)

2 ### Address your locomotive 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 loco, see page 23.

3 ### Move 'em out!

- Throttle up or press any command button on CAB-1. Your loco will respond to your every command. Read on.

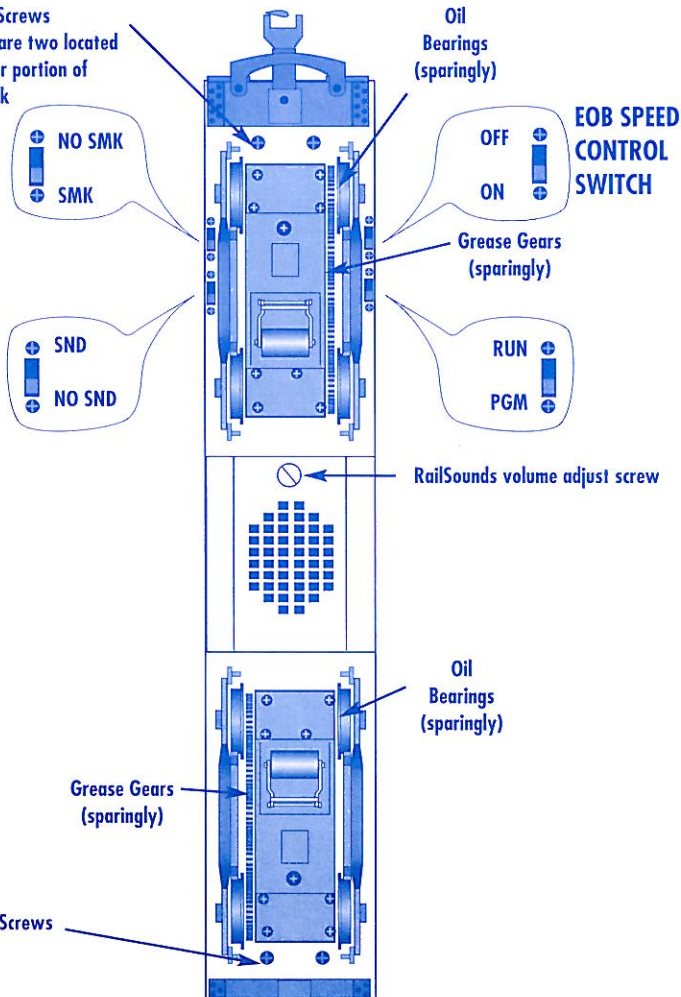# Maintaining and servicing your locomotive

Lubricating your Locomotive

Help your Atlas O loco 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 loco's wheels or your track. You'll know your loco 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.
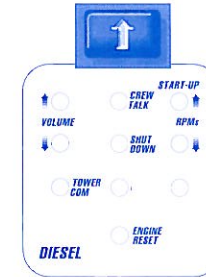
Body Mount Screws
NOTE: There are two located under the rear portion of the front truck

Oil Bearings (sparingly)

NO SMK
SMK

OFF
ON

EOB SPEED CONTROL SWITCH

Grease Gears (sparingly)

SND
NO SND

RUN
PGM

RailSounds volume adjust screw

Oil Bearings (sparingly)

Grease Gears (sparingly)

Body Mount Screws

TrainMaster Command operations

CAB-1 numeric keypad commands for your locomotive

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 loco. Resets the locomotive'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 loco'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 Smoke off. *Crewtalk sounds.*

9 Turns on the smoke generator. Press and hold key 9 (*for a maximum of 15 seconds*) to speed up heating of the smoke fluid. Refer to the section "Adding fluid to your locomotive's smoke generator".

Transformer (non-command) operations

## Installing the RailSounds battery in your locomotive

This Atlas O Locomotive is equipped with Lionel RailSounds©. Your loco 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 loco. The battery ensures interruption-free operation of RailSounds when the locomotive is operated with a conventional transformer. **However, if the locomotive is to be operated only with the TrainMaster® Command system, installing a battery is neither necessary nor recommended**.

Installing a 9-volt alkaline battery in your loco

The battery holder is located in the rear of the locomotive under the radiator casting. Remove the radiator by referring to the diagram and instructions below.

Snap the battery connector onto the battery terminals and insert the battery into its holder. Make sure to position the battery connector wires so that they don't interfere with re-installing the radiator. Finally, slide the radiator casting towards the rear of the locomotive and push it down until it locks in place.

9 volt Alkaline battery

9 volt battery connector
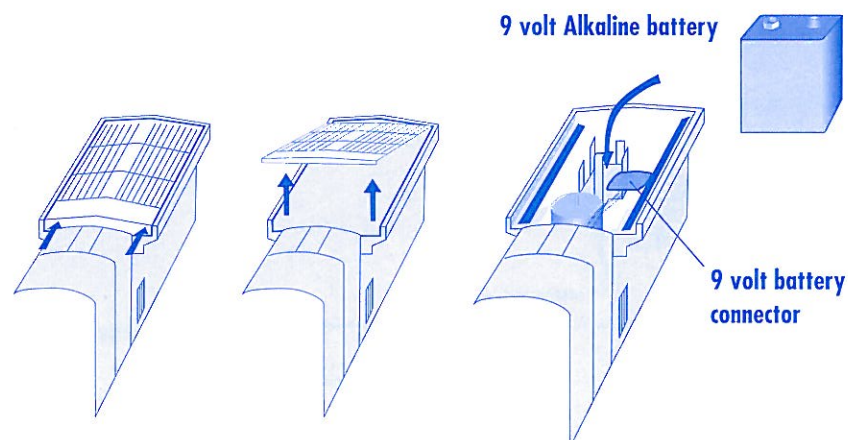
Note! Please remove protective cover from battery connector.

Note! Although RailSounds is powered by track voltage, the battery is required for uninterrupted operation and shutdown sequences when the locomotive is operated in non-command mode with a conventional transformer. Use only **Alkaline** batteries.

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

TrainMaster Command operations

Selecting the EOB speed control mode - 32 speed steps

The three EOB commands you will use most frequently are the ones that select the number of speed steps to be used by the EOB speed control system and turn on and off EOB. You can select among the following three EOB modes:

- 32 Speed Step mode,
- 128 Speed Step mode,
- Speed Control Off mode.

The commands to select these modes all require the locomotive to be stopped when the command is issued. Hence, each EOB mode selection command includes a press of the DIR key as part of its sequence of CAB-1 key presses.

If your loco moves in the wrong direction after you have entered any of these commands, simply press the DIR key on your CAB-1 remote once.

In each of the three EOB mode selection commands defined below, press the CAB-1 keys in the order specified in the command. The notation ## represents the ID# (address) that you have assigned to your EOB-equipped locomotive. Remember to leave a one second delay between each press of a CAB-1 key.

Once you set an EOB mode, this mode is remembered at locomotive start up. You do not need to reenter an EOB mode selection command at power up unless you wish to change the mode.

The 32 Speed Step mode selection command is:

**ENG + ## + DIR + AUX1 + AUX1 + AUX1 + 1
(The horn will sound after the 3rd AUX1 and again after the 1.)**

In the 32 Speed Step mode, your locomotive operates just like any other locomotive with speed control. Your loco will not slow down as it rounds sharp curves or goes up steep grades. Similarly, your loco will maintain a constant speed as it comes off a sharp curve onto straight track, goes down a steep grade, or is uncoupled from a long heavy train.

The red throttle knob on your CAB-1 is used to increase and decrease locomotive speed in the 32 Speed Step mode. Also, when you hold the BOOST key down, your locomotive speed will increase; when you release this key, your loco will return to its original speed. Holding down the BRAKE key will bring your locomotive to a stop; however, when you release the BRAKE key, your loco will return to its original speed. You will hear squealing brake sounds.

Transformer (non-command) operations

Using EOB speed control in the non-command environment

You have a choice of whether or not to use the EOB speed control system when you are running in the non-command environment (i.e., using conventional AC transformer control). You make this choice with the EOB speed control switch, which is located underneath the front truck as shown in the diagram below.

Set the EOB speed control switch to OFF if you don't want to use speed control in conventional operation. With the EOB system off, your loco will behave in the same manner as would any loco without speed control. Always set the speed control switch to OFF whenever you wish to use a conventional AC transformer to operate your new locomotive in a lash-up with another loco that doesn't have speed control.

If you do not turn off speed control in this situation, the two locos can fight with each other and degrade performance.

Set the EOB speed control switch to ON whenever if you wish to use speed control in conventional operation. With the EOB system on, there is no need to increase the track voltage to prevent your loco from slowing down as it rounds sharp curves or goes up steep grades. Similarly, your loco will maintain a constant speed as it comes off a sharp curve onto straight track, goes down a steep grade, or is uncoupled from a long heavy train.

EOB SPEED CONTROL SWITCH

OFF

ON
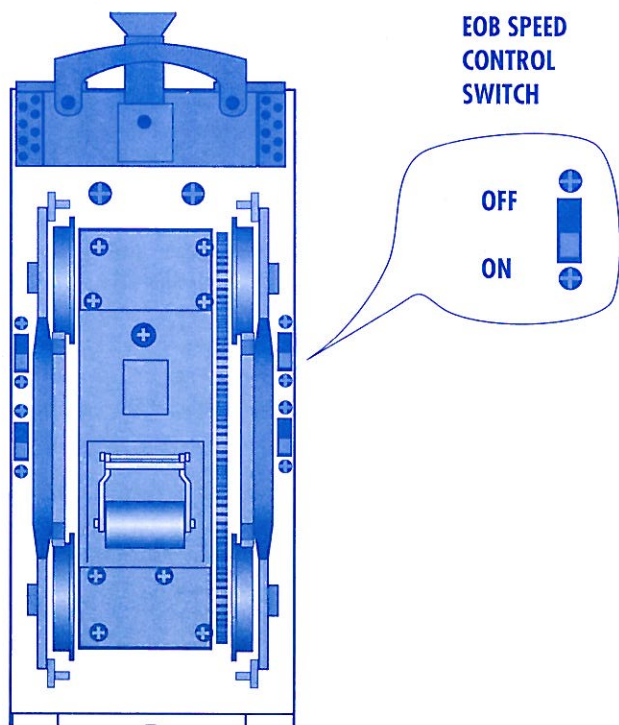
TrainMaster Command operations

Selecting the EOB speed control mode - speed control off

The Speed Control Off mode selection command is:

ENG + ## + DIR + AUX1 + AUX1 + AUX1 + 3
(The horn will sound after the 3rd AUX1 and again after the 3.)

The Speed Control Off mode provides 100% lash-up compatibility with locomotives that are not equipped with speed control. In this mode, the responses of your locomotive to CAB-1 commands are exactly the same as those of any command-equipped locomotive without speed control. As with the other EOB mode selection commands, you do not need to reenter this mode selection command at power up unless you want to change the EOB mode.

Transformer (non-command) operations
Running your Atlas 0 loco with a Lionel/Lionel-compatible transformer

1 **Place the locomotive on Atlas 0 or compatible 0 gauge track.**

2 **Power up the loco with your transformer.**
- Your **2- or 3- rail TMCC-equipped** loco 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 2- or 3-rail TMCC-equipped loco with direct current (DC) or with the output from a Digital Command Control (DCC) system. Damage to sensitive electronic components may occur.**
- **When operating with a conventional transformer, the state in which your locomotive starts up (neutral or forward) depends on the method by which the locomotive was operated (conventional transformer or the TrainMaster® Command system) the last time that the locomotive was used.**

  When you operate your locomotive for the first time after taking it out of the box or if the locomotive was last operated using the TrainMaster® Command system, the locomotive will start up in neutral with its headlights illuminated. When track power is briefly removed and then reapplied, the locomotive will move forward.
  If the locomotive was last operated using a conventional transformer and has been powered down for at least five seconds, the locomotive will start up in forward at a speed dependent on the applied track voltage.

3 **Move 'em out!**
- **Get your loco moving.** Press the DIR button on your CAB-1 remote or Lionel transformer. This sequences the 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 5 for information on locking your loco into a single operating state.

TrainMaster Command operations

Fine tuning EOB parameters for your locomotive

In particular, the Master Chuff Reset Code must always be set to the code "1, 1, 1" Also, the Chuff Rate must be set to the value 4 so that the pulses to the RailSounds system will be frequent enough for the squealing-brake sounds to play regardless of locomotive speed in the 32 Speed Step mode or the Speed Control Off mode. Since both the Master Chuff Reset Code and the Chuff Rate are set at the factory to their correct values, it should not be necessary to use these commands unless values for the Master Chuff Reset Code or the Chuff Rate were inadvertently changed.

To set the Master Chuff Reset Code to its proper value for diesel locomotives, use the following command:

**ENG + ## + DIR + AUX1 + AUX1 + AUX1 + 6 + 1 + 1 + 1
(The horn will sound after the 3rd AUX1. You will hear coupler sounds after the 6, and the first two 1's. The horn will sound again after the third 1.)**

Whenever you use the above command, the locomotive is automatically put into the 32 Speed Step mode.

When you reset the Master Chuff Rate code, you must also reset the Chuff Rate. To reset the Chuff Rate to its proper value for diesel locomotives, use the following command:

ENG + ## + AUX1 + AUX1 + 5

Unlike the other EOB commands, this command may be entered either when the locomotive is stopped or when it is running. Each time the 5 key is pressed you will hear a series of horn blasts. The first time that you enter this command you will hear one horn blast. The second time you enter the command you will hear two blasts from the horn. The third entry of this command results in four horn blasts. Executing this command over and over again will result in the number of horn blasts repeating themselves: 1, 2, 4, 1, 2, 4, 1, 2, 4, and so on.

To return your EOB-equipped diesel locomotive to its factory-default Chuff Rate value of 4, repeatedly enter the command:

AUX1 + AUX1 + 5

on your CAB-1 until you hear four horn blasts.

Welcome to Atlas O!

Atlas O is proud to introduce these highly detailed models of GE's Dash 8-40B diesel locomotives. All locomotives feature the prototypical accuracy and superior performance that is the hallmark of every Atlas O product.

These feature-packed locomotives sound and operate as well as they look. All powered 3-rail and 2-rail TMCC Dash 8-40B locomotives include:

- Lionel TrainMaster® Command system
- EOB speed control
- RailSounds™ 4.0
- Dual Electro-couplers (3-rail TMCC only)
- Operating diesel exhaust unit
- Operating ditch lights
    - Directional (illuminated in forward, dark in reverse)
    - Oscillate prototypically while horn is being blown (and for a short time afterwards)

Experience the sights and sounds of railroading with Atlas O!

Assigning your locomotive a new ID#

Example | **Assign a new I D# to your Command-equipped loco**

Command Base ON
Place the loco on track
PowerMasters set to CMD or traditional power supplies SET TO 16 TO 18 VOLTS
Set the locomotive reverse unit control switch to PGM
Turn track power on

▲ **Press BOOST**

ENG **Program the loco with a new ID#:**
Press ENG
? ? **Press a number you choose (the ID#)**
SET **Press SET**

Set the reverse unit control switch to RUN
Your loco 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 loco a more individualized number. Choose from any number between 1 and 99. To make things easy, use a portion of your loco's cab number.

Turn the Command Base ON and place the locomotive on the track. Power up, then set the loco's reverse unit control switch to PGM (see the illustration on page 5). Using CAB-1, press ENG, the locomotive ID# that you wish to use, 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 loco 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, or any two digit number that is not used by another engine. Write the number on a small piece of tape and put this tape on the bottom of the fuel tank as an aid in remembering.

Reprogramming R2LC boards to restore or change 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 "PGM"

STEP 2: Turn on Command Base.

STEP 3: Place locomotive on the 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 "PGM" to "RUN".

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

STEP 9: Press "ENG" and ID#, then operate as normal.