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OPERATING AND MAINTENANCE INSTRUCTIONS**READING T-1,
4-8-4 LOCOMOTIVE**

With World War II underway and the Reading Railroad heavily burdened with wartime traffic, Reville W. Brown, President of the Reading Railroad, faced a difficult decision. Many older locomotives had been pulled from retirement to aid in the war effort, and the Reading fleet was decrepit and slow. Finances were tight and untried locomotive designs could not be justified.

The decision was made to rebuild engines from Reading's I-10 class fleet of 2-8-0's to create what would become the T-1 engine. Baldwin Locomotive Works was commissioned to supply new frames, cylinders, drivers, leading and trailing trucks, and new boiler courses to make a 2-8-0 boiler large enough to fit Northern 4-8-4 style engines. On September 6, 1945, the first of 30 T-1 engines was turned-out.

These 100 foot long, 404 ton steamers reached peak speeds between 60 and 70 miles per hour. They were used primarily as freight haulers through the middle years of this century. By 1952, the entire class of T-1's was placed on stand-by as the mighty, new diesels took their place.

Lionel reconstructs this spirit and dignity with the introduction of the Reading T-1, 4-8-4 engine and tender. Featuring totally new body and undercarriage, from the drivers to the top of the stack, this die cast locomotive and tender weigh in at over eleven pounds and measure over 28 1/4 inches from the pilot to the rear coupler. Included are the new RailSounds, tolling bell, hissing steam chuff, and haunting whistle, digitized on an exclusive micro-chip to recreate actual locomotive sounds.

MOTOR

The motor requires no periodic maintenance other than lubrication (See Figure 1). After 80 hours of operating time or extended periods of storage, remove the rear truck and ashpan assembly and apply one drop of oil to the armature shaft (See Figure 2). After extended running the brushes may require replacement. Sluggishness or intermittent operation are signs that brush replacement is due.

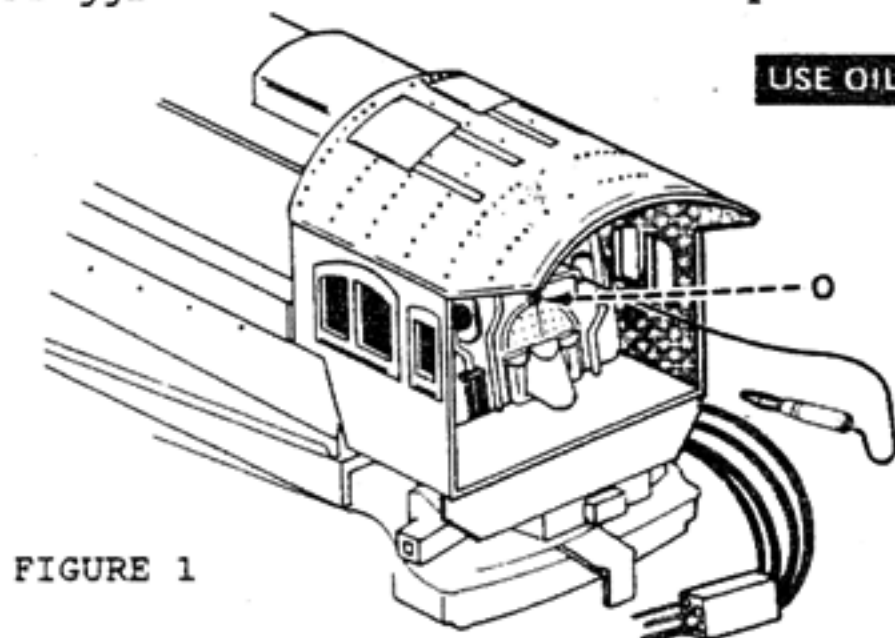
USE OIL AT POINTS 'O'

FIGURE 1

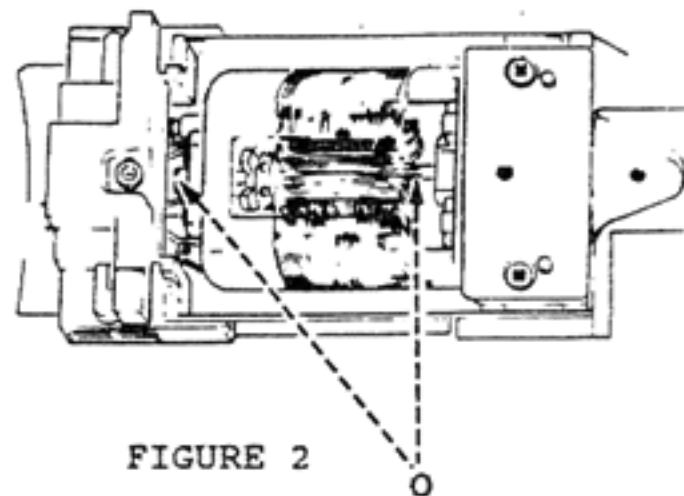
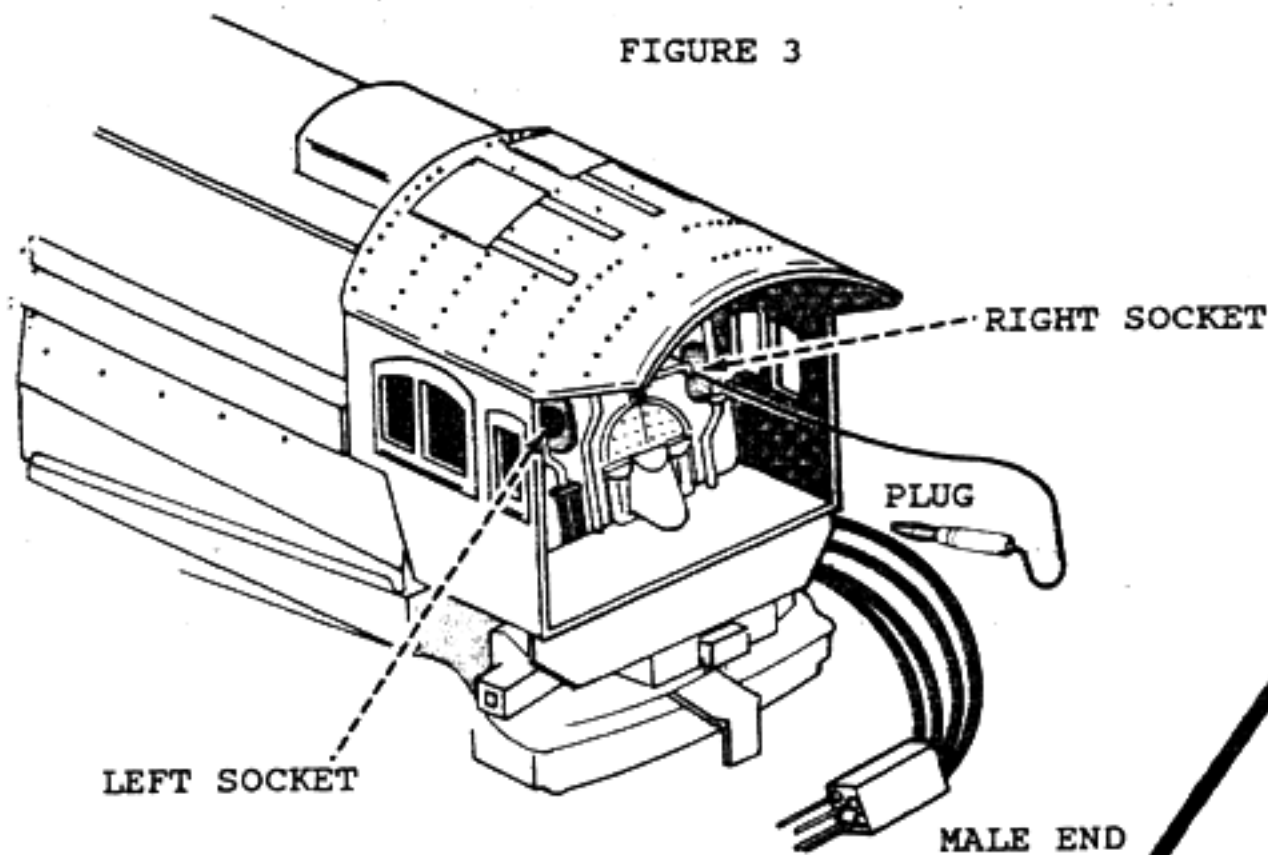


FIGURE 2

MECHANICAL REVERSING UNIT

The locomotive is equipped with a standard 3-position reversing unit. The reversing unit is a sequence switch that trips whenever current to the locomotive is interrupted. This is accomplished by momentarily interrupting power to the locomotive by operating the direction control on the transformer or by simply turning the transformer control off. NOTE that any interruption of voltage to the engine, intentional or otherwise, will cause the unit to sequence. Typical causes of unwanted locomotive reversing are dirty track or dirty wheels.

FIGURE 3



FILLING THE SMOKE UNIT

FIGURE 4

SMOKE UNIT

The smoke generator design includes additional plumbing for smoke emissions from the steam chest. To operate, add 8 to 12 drops of smoke fluid through the smoke stack and allow the engine to sit for a moment to let the fluid run to the bottom of the chamber. A bubble may form at the bottom of the stack preventing smoke discharge from the stack. Should this happen, blow into the stack. This will not only clear the stack but also the lines leading down to the steam chest. The smoke unit is designed to operate best at the slightly higher voltage required to operate the engine with its full consist. Smoke output will be slightly lower if the locomotive is operated without a load. The smoke unit requires no periodic maintenance.

RAILSOUNDS™

RailSounds are digitally recorded sounds of real trains. The bell, whistle and sound of steam are incorporated into the electronic memory and accessible at your command.

The tender houses the RailSounds circuit board and speaker, as well as a sound of steam lock out switch. All power is received from the locomotive through the four pin connector.

To operate the RailSounds, connect the wiring plug between the engine and tender (See Figure 5). IMPORTANT: the plug should always be connected even if the SOS and whistle are not used, since the locomotive side connector plug is electrically hot and will cause a short circuit if the pins come in contact with metal. If it must be disconnected, for use on D.C. system for instance, wrap a small piece of electrical tape around the pins end. You may wish to tuck the excess wiring back into the tender to enhance appearance. Leave the plug out for easy access.

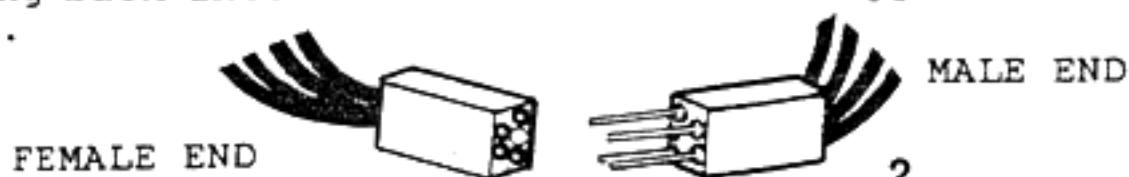


FIGURE 5

The sound of steam should operate whenever the engine is moving. If not the slide switch located on the underside of the tender. This switch shuts off the sound of steam unit, if so desired. The whistle and bell will operate regardless of the sound of steam switch position or engine movement.

To operate the whistle and bell sounds, connect the two leads from the No. 10-5904-001, horn/whistle and bell switch to your transformer. Connect one lockon wire to each of the screw terminals on top of the horn/whistle and bell switch and connect the other ends to the track lockon.

To operate the bell, position the horn/whistle and bell switch to the bell mode and depress the horn/whistle button on your transformer. The bell will continue to ring until the horn/whistle button is depressed again for approximately two seconds.

To operate the whistle, position the horn/whistle and bell switch to the horn/whistle mode and depress the horn/whistle button on your transformer. The whistle will sound as long as the button is depressed and will stop automatically when the button is released.

To sound the whistle during the ringing of the bell, follow the steps above to start ringing the bell. Then while the bell is ringing, move the switch on the horn/whistle and bell switch to the horn/whistle mode and depress the horn/whistle button on your transformer. The bell will stop ringing and the whistle will sound and stop automatically. When the whistle sound stops the bell will then start to ring again. To stop the bell ringing return the horn/whistle and bell switch to the bell mode and depress the horn/whistle button on your transformer for approximately two seconds.

NOTE: Should the whistle sound while the switch is in the bell mode, simply reverse the leads at the transformer.

MAINTENANCE - OIL AND LUBRICATION

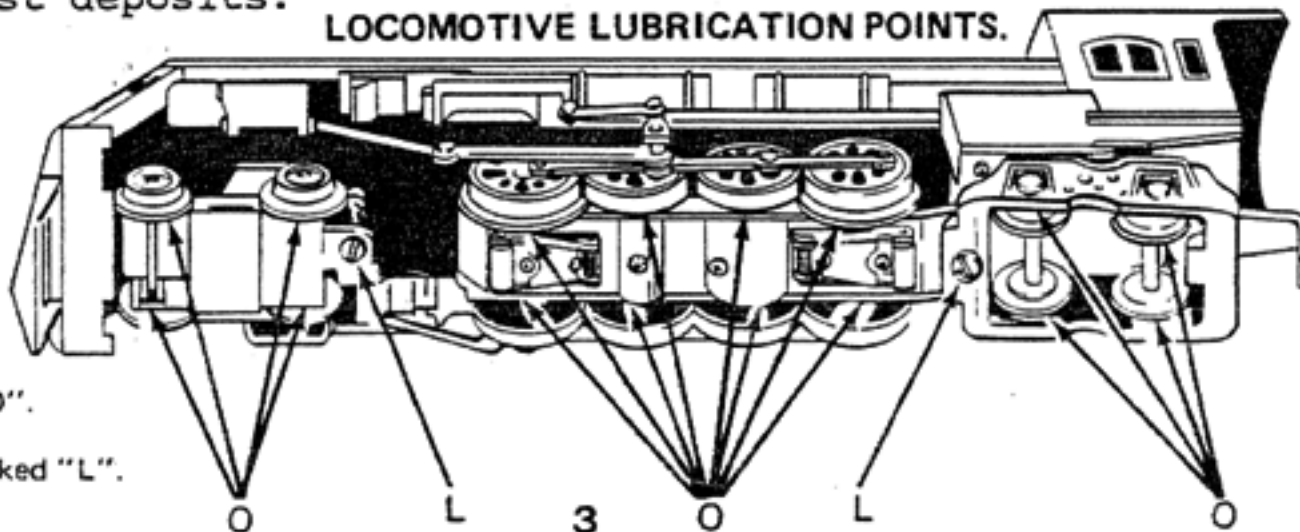
Proper lubrication is critical for proper performance. The engine should be lightly oiled after two hours of "break-in" operation (See Figure 6). Use a Lionel oiling tube or light household oil on all locations marked with an "O". Use a toothpick or a pointed tool to apply no more than one drop of oil. The brush end of the motor and side rods are especially sensitive to over oiling. The locomotive should be oiled every eight hours or operation.

The gearing and drive axle bushings are lubricated with molybdenum sulfide grease. These areas can be greased through four holes located on the underside of the engine. Grease needs to be added only after heavy usage (50-60 hours of operation) or every other year of moderate usage (See Figure 6).

Lionel offers a LUBRICATION AND MAINTENANCE KIT. You may wish to see your Lionel Dealer about purchasing one.

Periodically, check the wheels and track surface for accumulations of dirt and oil residue. Dirty track and wheels can cause poor electrical contact as well as reduced traction, especially on trestle sections. A Lionel track eraser will readily remove most deposits.

LOCOMOTIVE LUBRICATION POINTS.



Use oil at points marked "O".

Use lubricant at points marked "L".

FIGURE 6

HEADLAMP REPLACEMENT

The light bulb can be replaced by opening the smoke box door and removing the bulb and socket assembly from the retaining clip. Unscrew the bulb and replace it with Lionel part No. 18-5101-139 (See figure 7). Bulbs are available through your local Lionel Service Station, or if you prefer, directly from our Customer Service Department.

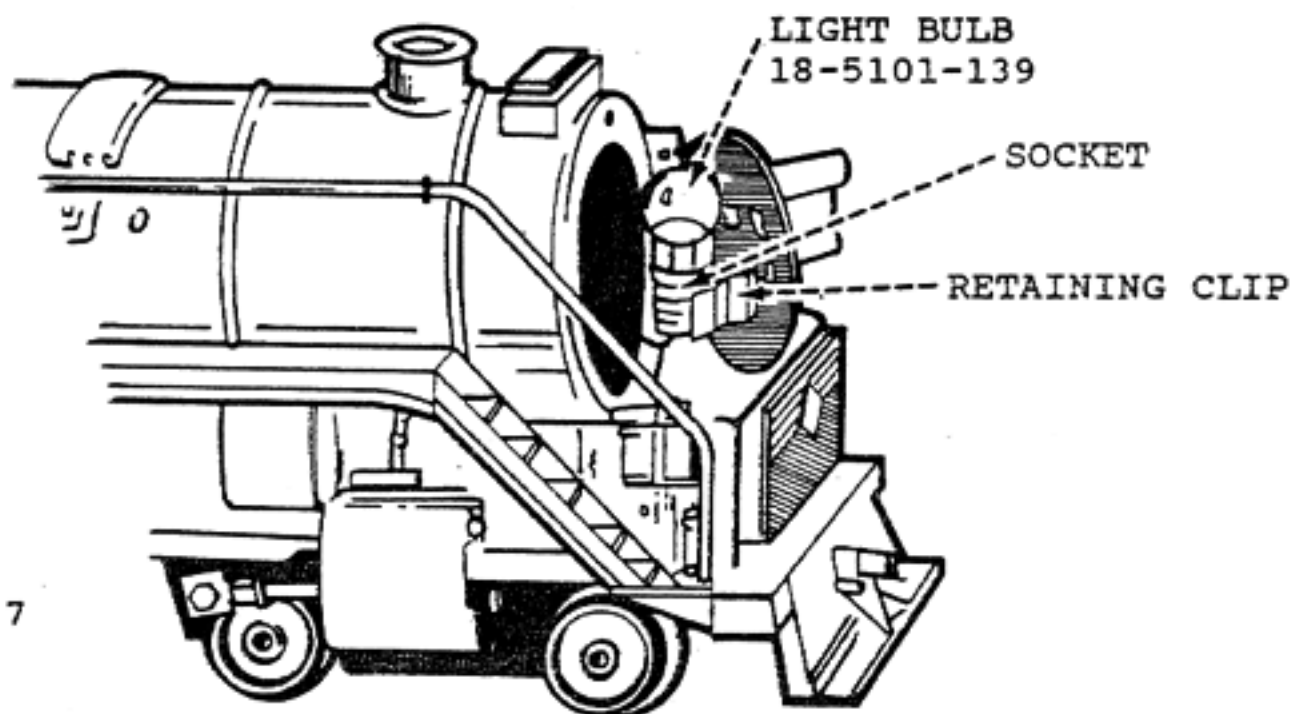


FIGURE 7

TENDER BACK-UP LIGHT REPLACEMENT

The tender back-up light receives power from the engine. It is wired so that the light is on only when the engine is in reverse. To replace the bulb, remove the screws in each corner of the tender frame and remove the tender body (See Figure 8). Unscrew the bulb and replace it with Lionel part No. 18-5101-139. Replace the tender body. Bulbs are available through your local Lionel Service Station, or if you prefer, directly from our Customer Service Department.

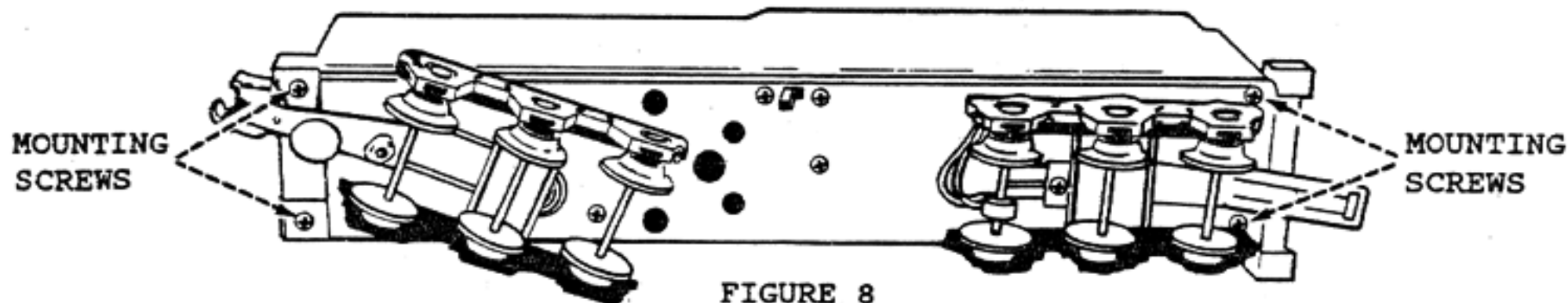


FIGURE 8

SERVICE INFORMATION

This product is proudly offered by Lionel Trains, Inc. and it carries a warranty to support its continued reliable operation. You may choose to have the Lionel Service Department service your locomotive even after its warranty expires. If so, a reasonable service fee will be charged. In either event, please follow the directions below.

If service is required within the warranty period, bring the item to the nearest authorized Lionel Trains - Service Center along with the warranty card. If you prefer to send it back to the factory, you must first write to Lionel Trains, Inc., Consumer Service Department, P. O. Box 748, Mt. Clemens, MI 48046, stating what the item is, when it was purchased and what seems to be the problem. You will be sent a return authorization and a label to assure your merchandise will be properly handled upon receipt.

CAUTION: Make sure the item is packed so as to prevent damage to the merchandise. The shipment must be prepaid and we recommend that it be insured.

Please make sure you have followed the instructions carefully before returning any merchandise for service. This warranty gives you specific legal rights and you may have others that vary from state to state.