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OPERATING AND MAINTENANCE INSTRUCTIONS FOR THE LIONEL® BR50

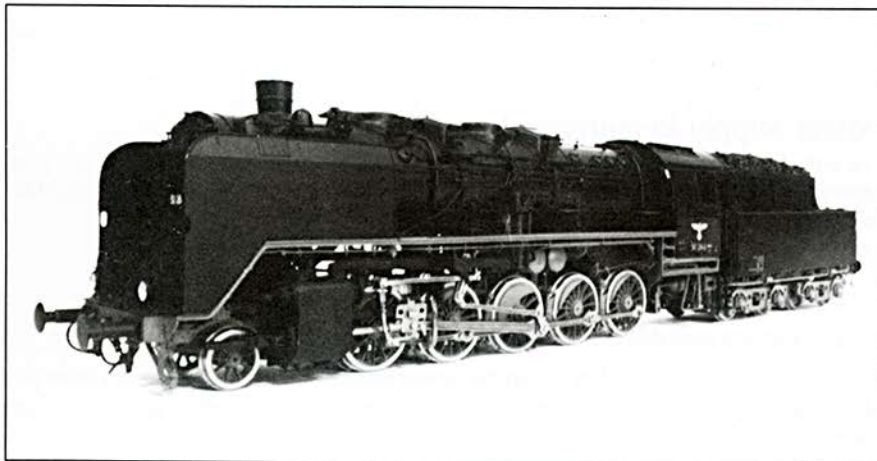
The Lionel BR50 is a true-scale locomotive and it incorporates the new and unique advanced technology which will be outlined in this owner/user guide.

The Lionel BR50 locomotive model is constructed of formed and fabricated brass sheet and therefore must be handled differently than a traditional diecast Lionel steam locomotive. Although the locomotive is very sturdily built, the body and particularly the details are more susceptible to damage by careless handling than other Lionel models.

Care must be exercised when removing the locomotive from the packaging, during general handling, and when placing the locomotive on the track to avoid damaging the model.

The Lionel BR50 locomotive model is a Direct Current (DC) powered model. Any application of alternating current (AC) as is supplied by most traditional Lionel power supplies will destroy the drive motor and sound system electronics. Lionel will not be responsible for damage caused by the application of AC power to the model. Please see your warranty registration card for further details.

The Lionel BR50 locomotive model is designed to run on two rail scale track with a minimum curvature radius of 70 inches. Although the track gauge is the same as traditional Lionel three rail track, the locomotive will not operate on any of the various three rail track systems available. Attempting to operate the BR50 on three rail track may cause damage to your DC power supply or the locomotive itself.



Unpacking the Locomotive

It is recommended that the locomotive and tender be removed from the inner carton while still surrounded by the foam insert. Once the foam and locomotive have been removed from the carton as a unit, the locomotive and tender can be more easily separated from the foam with less chance of doing damage to the model. It is highly recommended that all of the original packing materials be saved for future use.

Preparing the Locomotive for Operation

Although the Lionel BR50 is ready to operate, a few preventative maintenance steps may be taken to ensure the smooth operation and longevity of the model. The BR50 has been lubricated during assembly and testing, while this will suffice for initial operation and break-in, you may wish to further lubricate the side rod and valve gear assemblies by applying 1 or 2 small drops of good quality fine oil to areas where moving parts are in contact with each other. Your local hobby dealer should be able to guide you in the selection of a suitable lubricant. Care must be taken to avoid soiling the surface of the sound cam located on the second drive axle. Should this occur you will notice an alteration of the chuffing pattern heard during the operation of the locomotive. This may be corrected by carefully removing the lubricant with a cotton swab.

The locomotive motor and gear box are adequately lubricated during assembly and will need no further immediate lubrication. A small drop of oil on the axles will also aid in smoother operation.

It is recommended that you operate the locomotive on the roller base during a break-in period. Operate the locomotive at a variety of speeds and in both directions for a period of approximately 30 minutes. This will help the drive system to "run-in" resulting in smoother running characteristics.

NOTE: Use lubricants sparingly and with care

Locomotive and Tender Connections

The Lionel BR50 locomotive and tender require that one pair of connectors be joined to allow the operation of the model. The locomotive will not operate without the tender connected. The connection is made by matching the shape of the connectors and firmly pressing them together while holding them by the black plastic housings. With the connection made, the excess wire may be carefully pushed into the locomotive and tender to allow the drawbar connection to be made. When disconnecting the locomotive from the tender, pull only on the housings - **DO NOT PULL ON THE WIRES!** It is advised that the wire connections be made with the locomotive and tender in place either on the rollerbase or on the track.

Power Supply Requirements

The Lionel BR50 is a Direct Current electric model train. Do not attempt to use (AC) power from your three-rail power supply as damage will occur. The following criteria should be followed when selecting your power supply:

- 1) Direct Current (DC) output which is filtered
- 2) 0-15 vDC
- 3) Minimum available current should be approximately 2.0 amps

Should you choose to use a less expensive power supply or one which does not meet the above criteria, undesirable operating characteristics may result as well as possible damage to the model.

Preparing the Sound System for Operation

The Lionel BR50 contains a state-of-the-art sound system which digitally recreates actual locomotive sounds including steam whistle, blowers, air pump, emergency relief valve and cylinder chuff. While this sound unit requires track voltage to actuate certain sounds, the actual power used to operate the sound system is supplied by two standard 9 volt batteries that are placed in the tender coal bunker during operation of the locomotive. The batteries are packed separately with a wiring harness already attached and ready for operation. At the end of the wiring harness is a male plug which needs to be inserted into the receptacle on the floor of the tender coal bunker, with this connection made, the coal load can be placed over the batteries to conceal their installation.

NOTE: Your tender and sound control unit come equipped with batteries. If you do not plan to use your locomotive for an extended period of time it is highly recommended that you remove these batteries. Please also note that this system is not compatible with traditional Lionel sound unit controllers including Rail-Sounds®. Any attempt to utilize such controllers may cause damage to the sound system.

The supplied sound system controller may be connected to either an operating layout or to the included 'Roller Base'.

The sound system controller has two sets of wire leads. One set of leads terminates with a male plug matching the female plug mounted on the bottom of the included roller base, while the other set of leads terminates with two bare wire ends.

To hook up the controller unit to the roller base, first attach the bare wire leads to your power supply's DC terminals.

Next, insert the male plug into your roller base receptacle. Your power supply and sound system are now ready for operation.

Due to the infinite variety of model railroading wiring schemes this owners manual will only cover the direct wiring of the controller to a simple layout. First, attach the bare wires to your power supply as before. Second, remove the black male plug used for the roller base and attach those wires to your track terminal. You are now ready for layout operation.

Operating the Locomotive

Using the procedures already discussed, you are now ready to put the locomotive into operation. You will need to place the model on the roller base by positioning the drive wheels directly over the roller assemblies and lowering it on to the base. The retaining pin will project into the hole in the bottom of the main frame to keep the locomotive from moving during operation.

To activate the sound system, locate the sound system switch under the rear water hatch on the tender. Approximately 10 seconds after turning the system on you will hear the blowers activate. With the locomotive stationary you will hear, in addition to the blowers, the air compressors and pressure relief valves on an intermittent basis. When "track" power is applied to the locomotive, the blowers will turn off and the brake release will sound. As soon as the drivers begin to turn, the chuffing of the cylinder exhausts will start in synchronization with the drivers. When the loco is brought to a stop, the blowers will again start up while the intermittent sounds continue. The whistle may be sounded at any time when the system is turned on utilizing the sound control box provided. There are two different sounds as described on the sound controller.

Locomotive Care and Maintenance

The only maintenance that should be required is periodic lubrication as outlined under "Preparing The Locomotive For Operation" and the replacement of the sound system batteries. It is advisable to periodically check the tightness of the small fasteners used to assemble the side rods and valve gear, also all other random hardware to make certain that parts will not be lost.

To install, remove, or replace the single 9 volt battery in the sound unit control box, follow these steps:

- 1) Cover your working surface with a piece of foam rubber or a soft towel.
- 2) Place the sound unit control box face down on the foam.
- 3) Remove the four rubber feet from the bottom of the control box.
- 4) Using a small phillips head screw driver, remove the four phillips head screws located under the rubber feet.
- 5) Remove the back of the sound unit control box.
- 6) Install, replace, or remove the 9 volt battery.
- 7) Reverse above procedure to put the box back together.

Display Case Care and Maintenance

The roller base and clear acrylic cover are manufactured with quality furniture grade materials and should be cared for accordingly. The wood roller base should be regularly dusted with a soft cotton cloth. Any stains or marks which may not come off during dusting may be cleaned utilizing a no residue furniture cleaner.

The clear acrylic cover should likewise be regularly dusted with a soft cotton cloth. Extreme care should be taken not to exert undue force on the cover as this can result in scratch marks. Should the cover be scratched or have a difficult stain to remove, plastic polish as is sold for record player "dust" covers may be used. With care, no cleaning beyond regular dusting should be necessary.

Service

The Lionel BR50 comes with a limited lifetime warranty to the original owner. Additional information and instructions outlining this warranty and service is available on the warranty card included with this manual.

