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LIONEL

PORT OF LIONEL CITY
DIVE  **TEAM**

Owner's Manual

CAUTION—ELECTRIC TOY

NOT RECOMMENDED FOR CHILDREN UNDER EIGHT YEARS OF AGE.
AS WITH ALL ELECTRIC PRODUCTS, PRECAUTIONS SHOULD BE OBSERVED
DURING HANDLING AND USE TO REDUCE THE RISK OF ELECTRIC SHOCK.
TRANSFORMER RATINGS—INPUT: 120 VAC; 60 HZ ONLY.
AC OUTPUT: 18 V; 54 VA, 3.0 AMPS

Congratulations!

You're now the proud owner of the Port of Lionel City ready-to-run O-27 set. Everything you need to get started is included. You're already off to a great start by reading this instruction manual. It has important information on train setup and operation. This booklet also covers proper maintenance

procedures to help your Lionel trains live long, healthy lives.

If you have any questions after reading this booklet, contact your nearest authorized Lionel Service Center using the list included in a separate flier in this set or Lionel Service at 810-949-4100.

And *have fun!*

Table of contents

Track layout

<i>Getting started</i>	3
<i>Suggested track layouts</i>	3
<i>Joining the track sections</i>	4
<i>Grade crossing</i>	4
<i>Attaching the lockon to the track</i>	5

Controller operations

<i>Stripping the wire</i>	6
<i>Attaching the controller wires to the lockon</i>	6
<i>Controller functions</i>	7
<i>Controller and short circuits</i>	8

Train operations

<i>Reverse unit procedure</i>	9
<i>Coupling</i>	10
<i>Using your FA2's magnetic coupler</i>	10

Maintaining and servicing your set

<i>Lubricating your FA2 diesel locomotive</i>	11
<i>Enhanced tractive effort</i>	11
<i>Replacing your FA2's headlight</i>	12
<i>Replacing your searchlight car's lamp</i>	13
<i>Replacing your medical caboose's interior lamp</i>	13
<i>Speed boat operation and battery replacement</i>	14
<i>Derrick car setup and operation</i>	15
<i>Setting up the derrick</i>	15
<i>Raising and lowering the boom</i>	15
<i>Radar car assembly and lamp replacement</i>	16
<i>Lionel Service</i>	16

Track layout

Getting started

Before you do anything else, we recommend you check the contents of your set box to ensure all of the parts of your set have been included and that the quantities (when applicable) are correct.

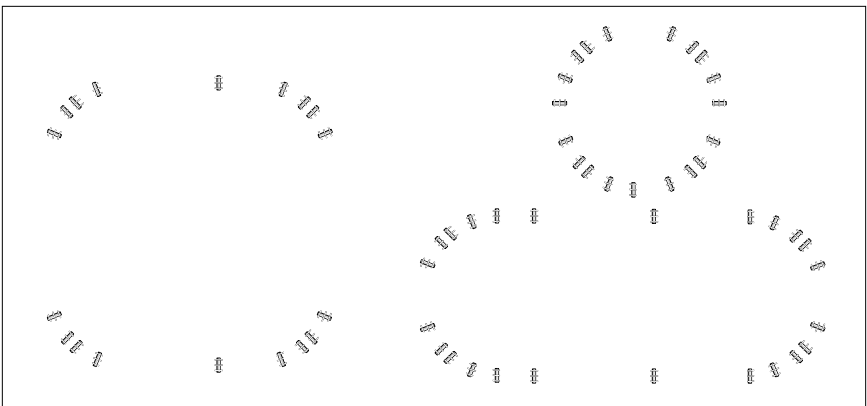
The parts list below will tell you what's included and the correct quantities. If you find any discrepancies, contact the dealer that you purchased it from for more information or call Lionel Service at 810-949-4100.

• FA2 diesel locomotive	1	• Controller	1
• Searchlight car	1	• 40-watt power pack	1
• Radar car	1	• Lockon	1
• Derrick car	1	• Straight track	8
• Flatcar and speed boat	1	• Curved track	8
• Medical caboose (lighted) (includes 1 figure, 3 stretchers, and 1 oxygen tank)	1	• Grade crossing	2
• Tractor/trailer	1	• Service Center list	1
		• Railroader Club application	1
		• Warranty card	1

Now comes the fun part—deciding what kind of layout you want.

The only rule—let your imagination be your guide.

Suggested track layouts



Here are some examples of layouts you can build with 8 straight and 8 curved sections of track. Remember—the more track you purchase, the more variations you can create in your train layout. And that means more fun!

Track layout

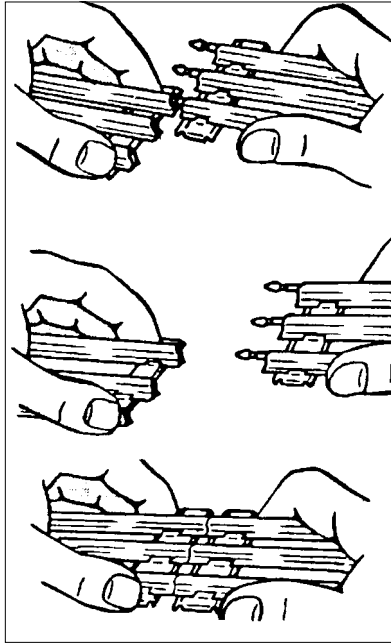
Joining the track sections

Join the track sections together by inserting the pins of one track section into the rail openings of another. For good electrical contact, pins must be carefully inserted and track joints tightly fitted.

If the track is difficult to connect, try this installation tip. You can “break in” O-27 track sections by inserting and withdrawing a track pin into one rail at a time before joining the entire track section. If the openings become too open (causing the track to fit loosely), pinch

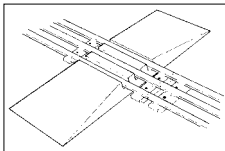
the rail together around a track pin with a pair of pliers. If any pins fall out of the track and are missing, replace them with extras available from your Lionel dealer.

Maintenance tip: The rails should be kept clean, dry, and free from oil and grease. Clean rust and dirt spots with a track eraser. Wipe the track using a cloth dampened with track cleaner from the Lionel maintenance kit (no. 6-62927), which is available from your authorized Lionel Value Added Dealer.



Grade crossing

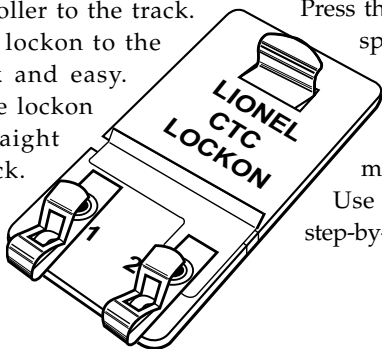
Included in your Port of Lionel City set are two pieces of grade crossing. These can be used on any straight section of track and will allow you to drive your Lionel tractor-trailer, as well as other toy cars and trucks, over the rails of your layout.



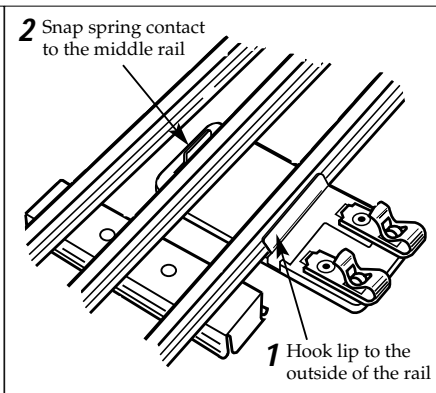
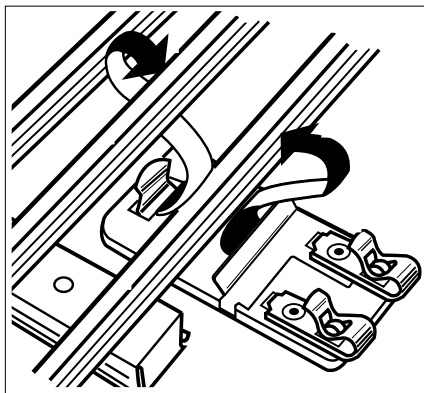
To install, place the grade crossing under a section of straight track, lining up the rails with the grooves in the crossing. You may install two crossings on the same section of track or on separate sections.

Attaching the lockon to the track

The lockon connects power from your controller to the track. Attaching the lockon to the track is quick and easy. First, place the lockon under any straight section of track. Fit the center lip of the lock-



on onto the edge of an outside rail. Press the lockon upward so that the spring contact snaps onto the center rail. The lockon should face outward when setting up your track, and make sure it is *firmly* connected. Use the illustrations below as a step-by-step guide.



Once the lockon is securely attached to the track, it's time to insert the wires from the controller

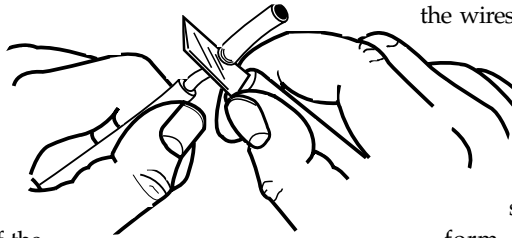
into the two spring clips on the lockon. Turn to page 6 for easy-to-follow steps.

Controller operations

Stripping the wire

Once your track is assembled and the lockon is securely attached, you can connect the wires from the controller to the lockon.

First you'll want to check the ends of the wires to make sure that the insulation is



stripped back about $\frac{1}{4}$ " to $\frac{3}{8}$ ". To strip the wires, use a pair of wire strippers or a sharp knife.

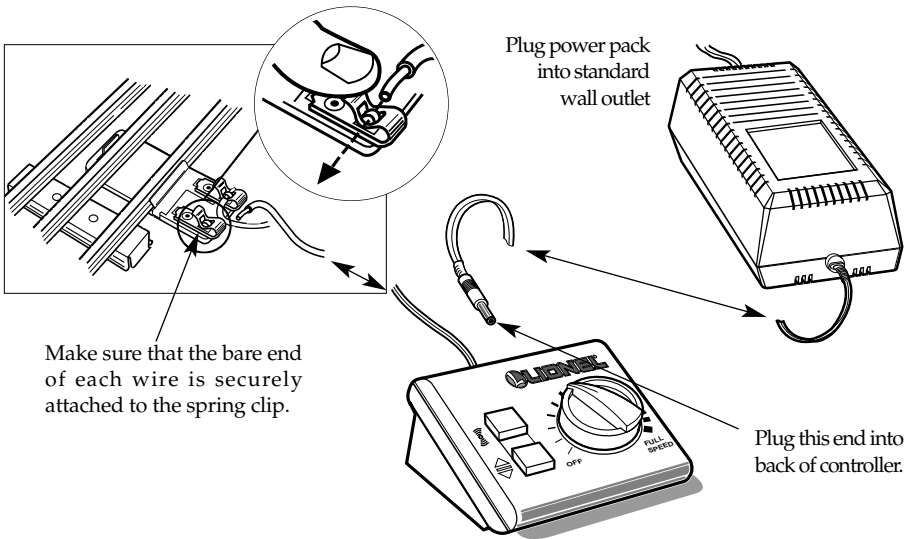
Caution: Only an adult should perform this task!

Always use care when stripping wires.

Attaching the controller wires to the lockon

Now you'll need to insert a controller wire into each of the two spring clips on the lockon. It's easy! Depress the spring clip with your finger and insert the bare end of the wire into the exposed opening. Release the spring

clip. Give the wire a little tug to make sure it's secure. Repeat these steps with the other spring clip. Next, insert the small plug end of the power pack into the back of your controller, and plug the other end into a standard outlet.



Make sure that the bare end of each wire is securely attached to the spring clip.

Plug power pack into standard wall outlet

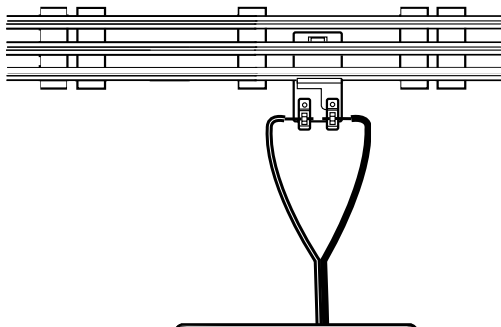
Plug this end into back of controller.

Controller functions

As you turn the throttle control knob to the right, power to the track is increased. When the indicator reaches the green band, there should be sufficient power to operate the locomotive. The further into the green area the knob is turned, the faster your train will go. Remember that the greater the load on

the engine (adding more cars for the locomotive to pull, for example), the farther into the green the knob must be turned before it will operate the locomotive.

The yellow band indicates the average power range that the train will be operating in. The red band represents maximum power output.



Pressing the horn button will produce no sound because your FA2 is not equipped with a diesel horn.



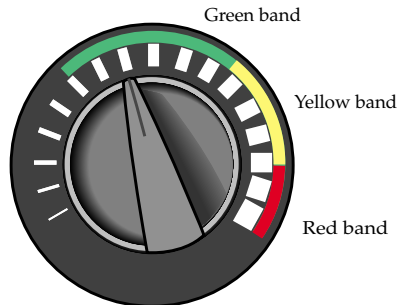
Press this button to go forward or reverse, or to place the locomotive in "neutral" (no movement, headlight is on).



The LED indicator shows when your controller is ON.



Turn the throttle control knob to the right for more power.



Controller operations

Controller and short circuits

Your Lionel power pack is listed by Underwriters Laboratories Inc. and has been carefully designed and tested to ensure peak performance. The controller is equipped with a built-in electronic circuit breaker that alternately cuts off and restores the flow of power to the track whenever a short circuit exists—for example, when the train derails. The circuit breaker's action continues until the cause of the short circuit is eliminated. This circuit breaker is incorporated into the controller to protect it from possible damage. It will not protect the locomotive or electrically operated accessories, so it's important to eliminate short circuits as soon as possible.

Note!

The power pack must be unplugged from the wall socket when a short circuit is noticed, and the short circuit must be corrected.

A short circuit is caused by a direct connection between the center rail and one of the outside rails or by a direct connection between bare wires. The axles of a derailed car or locomotive are

the most frequent cause of short circuits, so make sure that all wheels are properly set on the rails. Some other causes of short circuits might be staples, nails, paper clips, or other metallic objects lying across the rails, or two bare wires touching each other.

If too many cars or accessories are used, your controller will exceed its power limit and begin to cycle on and off. To correct this problem, cars or accessories must be removed before normal operation can resume. The same condition can occur if the power is turned up too quickly. This also could cause your train to move too fast and derail.

After your power pack has been operating for a while, you will find it warm to the touch. It is the nature of all electrical power equipment to become warm when in use. If your controller is loaded to capacity, it is a good idea to let it cool down after an hour or two of continuous use. Always unplug the power pack from the wall when the controller is not in use.

For more power, see the line of Lionel high-output transformers at your authorized Lionel Value Added Dealer.

Train operations

Reverse unit procedure

The reverse unit inside your Lionel FA2 is an electronic device that acts like the transmission in your car. When you apply power to the track, the locomotive moves in the direction specified by the reverse unit—or it sits in neutral, awaiting another power interruption. Power interruptions are the signal that tells the reverse unit to sequence to the next operational state.

To interrupt power and sequence the locomotive's reverse unit, press the direction control button or turn the throttle to the OFF position and ON again. The reverse unit alternates between three states: forward, neutral, and reverse.

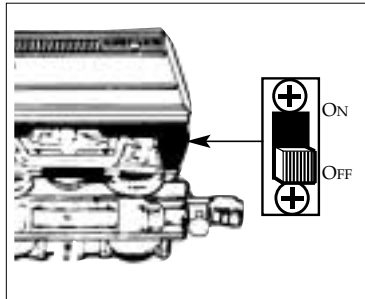
Also, the locomotive can be "locked" into a certain mode of operation by throwing the switch located on the underside of the frame (see illustration above). When the switch is thrown to the OFF position, the locomotive will be locked in the next mode of operation in

the sequence. For instance, if the locomotive is moving forward, then is stopped and the switch is thrown back, the locomotive will be "locked" in neutral. If the switch is thrown back while the locomotive is under power, the locomotive will

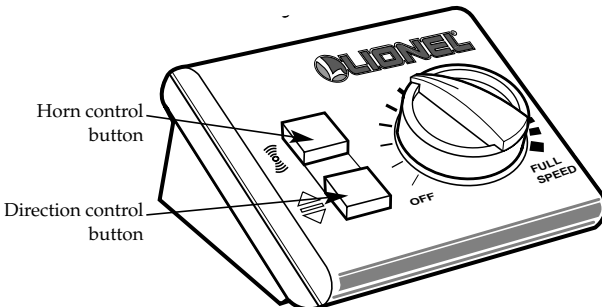
remain in the mode it was in when the switch was thrown. The controller direction control will then have no effect on the direction of the locomotive.

Additionally, this reverse unit has a "power-up reset" feature, which means that should

the locomotive sit without power for a short period of time, the reverse unit will automatically reset and start in the forward direction when the transformer is turned on or "powered up," regardless of the locking switch position. If the locking switch is in the OFF position, the locomotive will start in the forward direction and be "locked" there.



Position your reverse unit switch to the OFF position to deactivate it.



Train operations

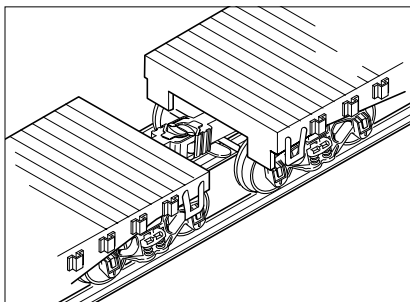
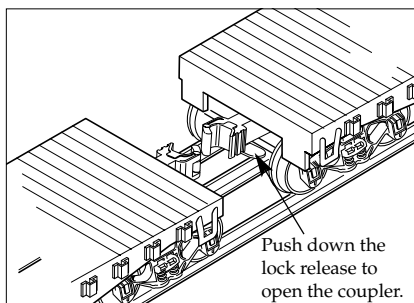
Coupling

After you have assembled the track, place the locomotive and rolling stock on the track. Before coupling the cars, make sure the wheels are properly set on the rails.

When coupling your cars, at least one

of the mating couplers must be open as shown below at the left. Now simply push the cars toward each other until they lock together.

Now you're ready to pull out of the station. *All aboard!*



Keep in mind that it's easier to couple cars on a straight stretch of track.

Using your FA2's magnetic coupler

Your FA2 locomotive is equipped with an operating magnetic knuckle coupler, a revolutionary design first introduced by Lionel in 1945.

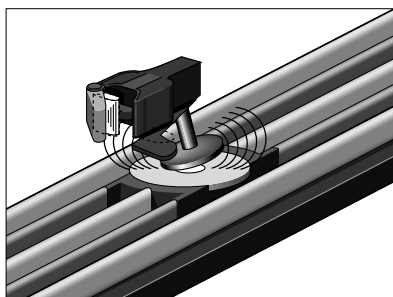
Lionel magnetic couplers react to the magnetic field generated by a Lionel remote-control track section (available separately).

Place the 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 knuckle opens.

One operating technique favored by

Lionel railroaders is the "moving uncouple." Press the UNCOUPLE button as the locomotive passes over a remote-control track section. The magnetic field will open the coupler; the consist remains behind as the locomotive moves on. But be



Position the coupler's trigger disc over the remote-control section, then press UNCOUPLE. The coupler opens.

careful—the speed of a newly uncoupled and moving locomotive can increase dramatically.

Maintaining and servicing your set

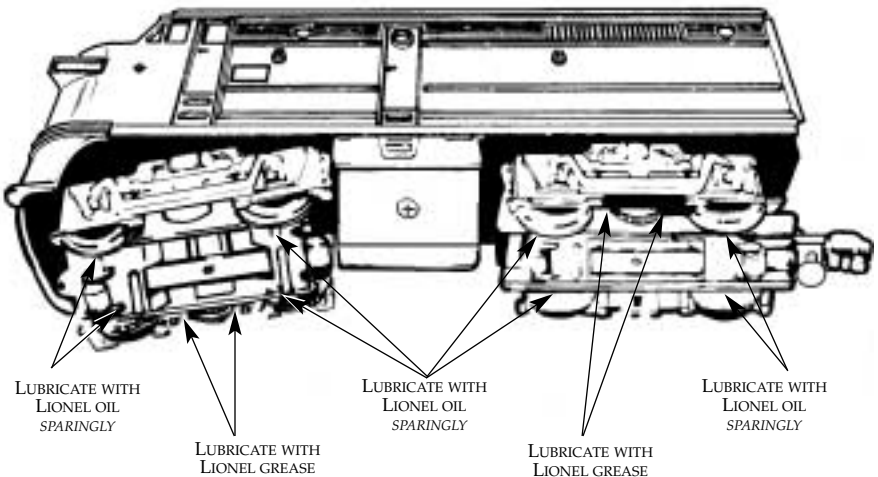
Lubricating your FA2 diesel locomotive

Help your Lionel FA2 lead a long and productive life on your railroad by maintaining it properly.

We recommend you purchase a Lionel Lubrication and Maintenance Kit (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 FA2's wheels, contact rollers, or your track.

You'll know your FA2 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.



Enhanced tractive effort

Your locomotive is equipped with Tire-Traction™. This means that two of the drive wheels on each truck are fitted with rubber traction tires to enhance tractive effort so your loco-

motive can pull many cars at once.

Lionel locomotives with Tire-Traction grip the track, enabling them to pull heavy loads at higher speeds.

Maintaining and servicing your set

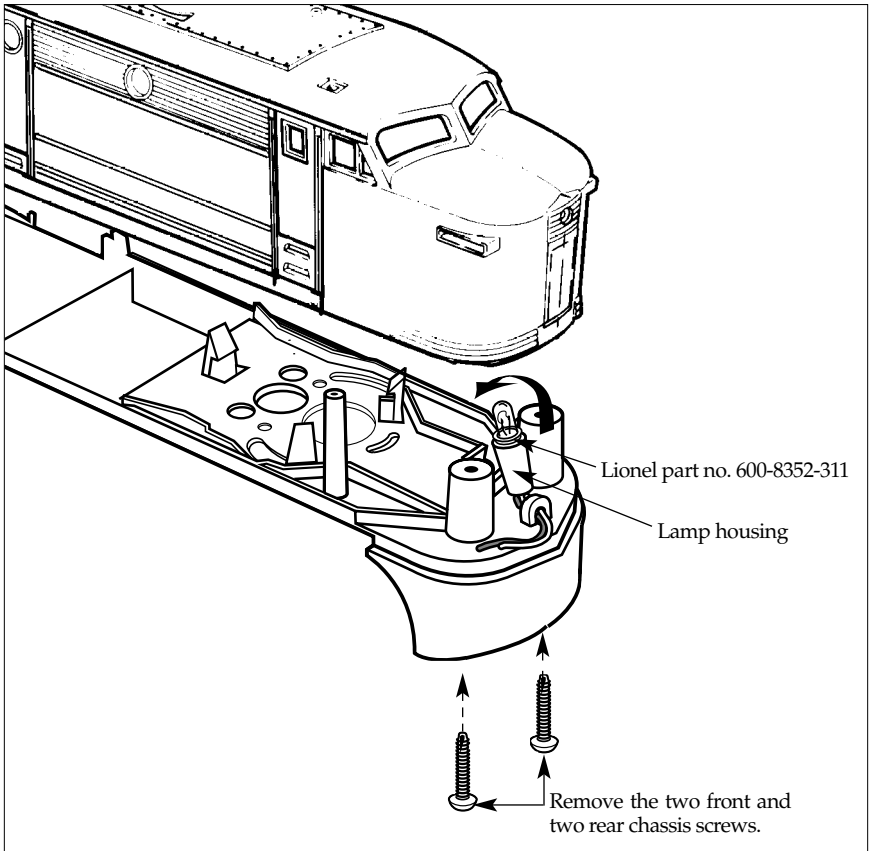
Replacing your FA2's headlamp

To replace your FA2's headlamp, first remove the four chassis screws on the underside of the locomotive. Carefully lift off the body.

Pull the lamp straight up and out of the lamp housing and replace it with

Lionel part no. 600-8352-311, available from your local authorized Lionel Service Center or Lionel Service.

For more service information, see the Lionel Service section on page 16.

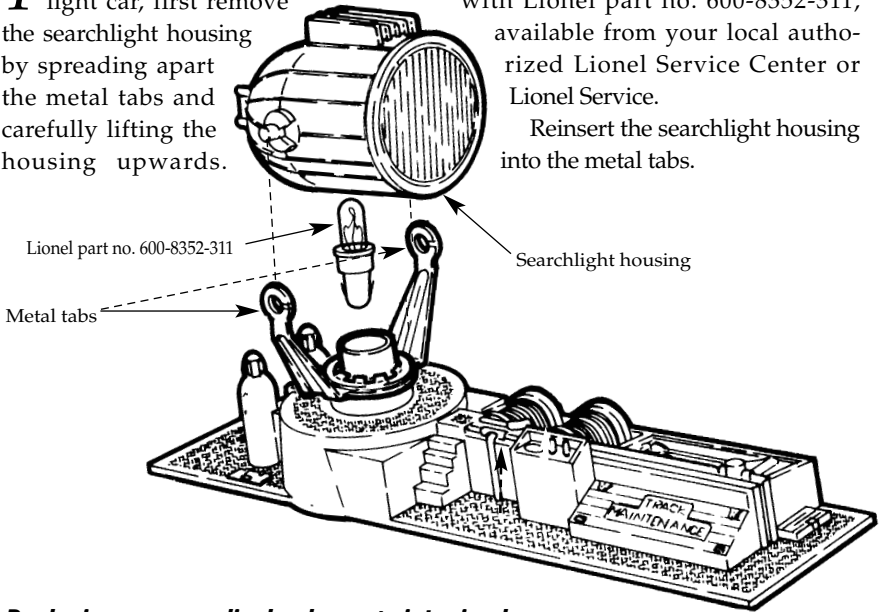


Replacing your searchlight car's lamp

To replace the lamp in your searchlight car, first remove the searchlight housing by spreading apart the metal tabs and carefully lifting the housing upwards.

Pull the lamp straight up and replace it with Lionel part no. 600-8352-311, available from your local authorized Lionel Service Center or Lionel Service.

Reinsert the searchlight housing into the metal tabs.



Replacing your medical caboose's interior lamp

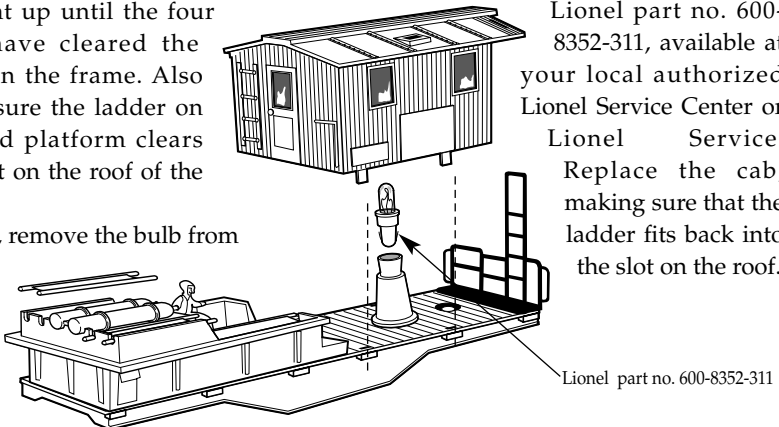
To replace the lamp inside the caboose cab, carefully pull the cab straight up until the four tabs have cleared the slots on the frame. Also make sure the ladder on the end platform clears the slot on the roof of the cab.

Next, remove the bulb from

the lamp socket by pulling it straight up. Replace it with

Lionel part no. 600-8352-311, available at your local authorized Lionel Service Center or Lionel Service.

Replace the cab, making sure that the ladder fits back into the slot on the roof.



Maintaining and servicing your set

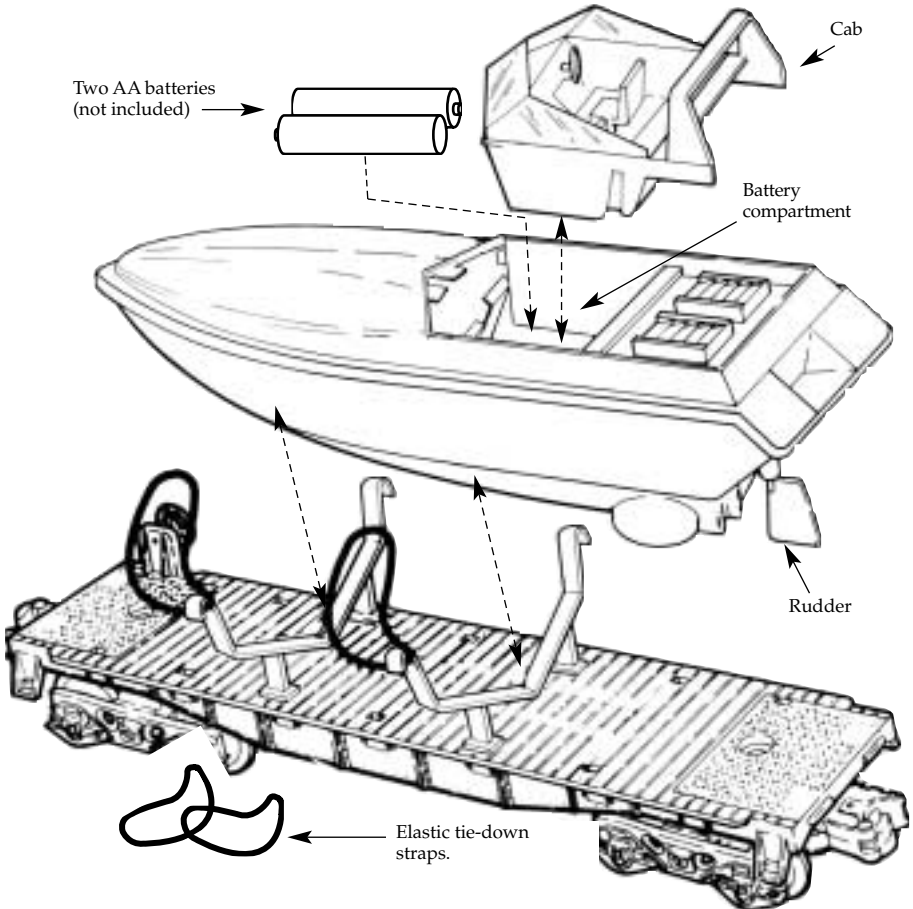
Speed boat operation and battery replacement

Your Port of Lionel City rescue speed boat is ready for action on the high seas! It rests on a custom cradle on the flatcar and can be lifted off at a moment's notice. Simply remove the elastic tie-down straps and use the derrick car (next in line) to drop the boat into the "water."

For added excitement, install two AA batteries (not included) into the battery

compartment to power the boat through the water! Use the rudder to steer the boat towards your target.

Installing the batteries is easy. Lift off the cab and place the two AA batteries into the battery compartment as shown. Make sure that the plus and minus terminals on the batteries correspond to the markings inside the battery compartment. Replace the cab.



The elastic straps secure the boat during operation on your layout.

Derrick car setup and operation

Use your derrick car to drop your rescue speed boat into the “water.” It has a boom that can raise, lower, and swivel for plenty of realistic action. The

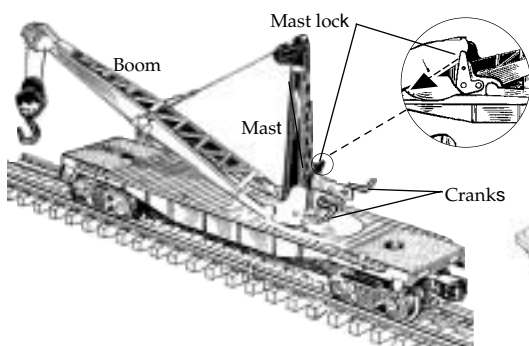
derrick car is packaged in your set with the mast folded down. Make sure you follow the procedure below to properly set up and use your derrick car.

Setting up the derrick

The car is packed with its derrick mast folded. To prepare the derrick for use, carefully raise the mast until it snaps into place. It should now be in a vertical position as shown in the illustration.

Check that the winch lines are prop-

erly threaded through their respective pulleys. **CAUTION:** Do not force the mast beyond its vertical position it might bend or break. Take care when you release the mast lock so it doesn't bend excessively.

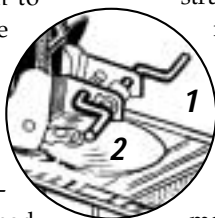


Use the enclosed netting to lift your Dive Team boat

Raising and lowering the boom

Raise and lower the boom to your chosen angle with the cranks behind the mast (see crank 1). The block and hook are controlled by the other crank (see crank 2).

If your layout includes a trestle set, tunnel, or other overhead



structure, lower the mast by opening the mast lock before the car is moved.

Avoid tangled lines and dragging the hook by raising the boom and reeling in the block before collapsing the mast.

Maintaining and servicing your set

Radar car assembly and lamp replacement

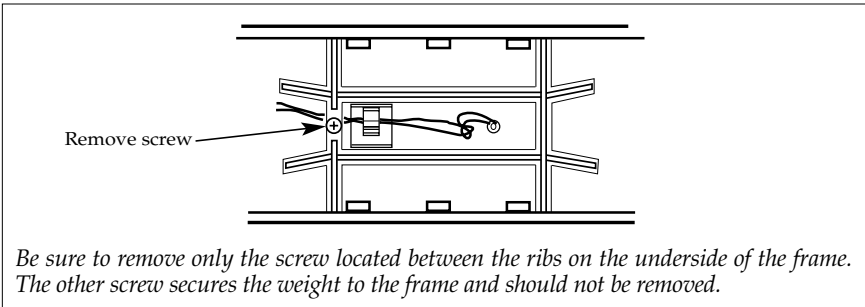
Press the two white radar dishes onto the radar mast. Align the key tab on the radar mast assembly and insert it into the slotted hole. Insert the figure into the nub on the seat, facing the radar screen.

To replace the bulb that lights the radar screen, first remove the radar antenna platform from the upper housing by pulling it off the shaft. Next, remove the screw on the underside of

the car as shown below.

Carefully lift up the upper housing from the car while pushing the four barbed posts through the mounting holes in the flatcar. Unscrew the bulb and replace it with Lionel lamp no. 600-2314-300, available at your Lionel Authorized Service Center or Lionel Service.

To reassemble the car, reverse the procedure.



Lionel Service

Your Port of Lionel City set is built with pride by Lionel and carries a warranty to support continued reliable operation. If service is required, bring it and its warranty card to your local authorized Lionel Service Center. To find the nearest dealer or Service Center, simply call 1-800-4-LIONEL or search on our website: www.lionel.com.

If you prefer a Lionel factory repair, call 810-949-4100, fax 810-949-5429, or write Lionel Service, P.O. Box 748, New Baltimore, MI 48047-0748. State the problem and the product's purchase

date. We'll send a return authorization letter to assure proper handling while at Lionel. You may choose to have your product repaired by Lionel Service after its warranty has expired. A reasonable service fee will be charged.

CAUTION: Make sure your product is properly packed to prevent shipping damage. The shipment must be pre-paid and we recommend it be insured. Please follow these instructions carefully. This warranty gives you specific legal rights. You may have other rights that vary from state to state.