

# On Board Battery Operated String LED Lighting for HO Passenger Cars

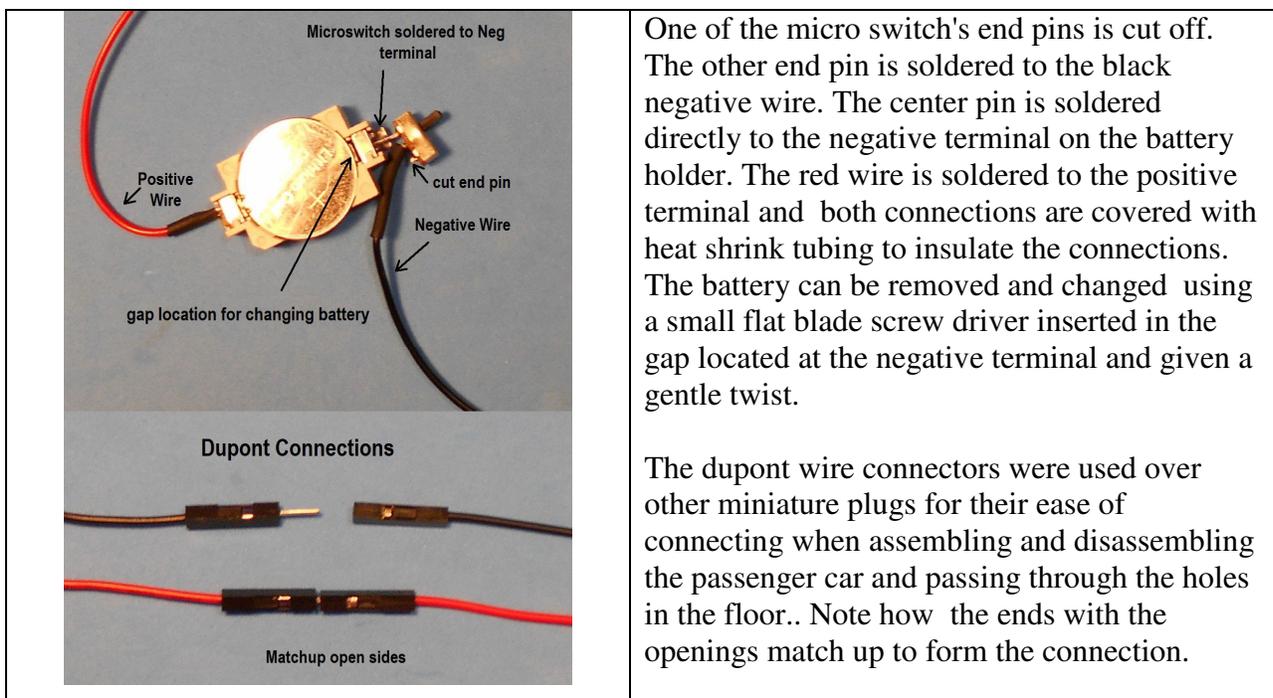
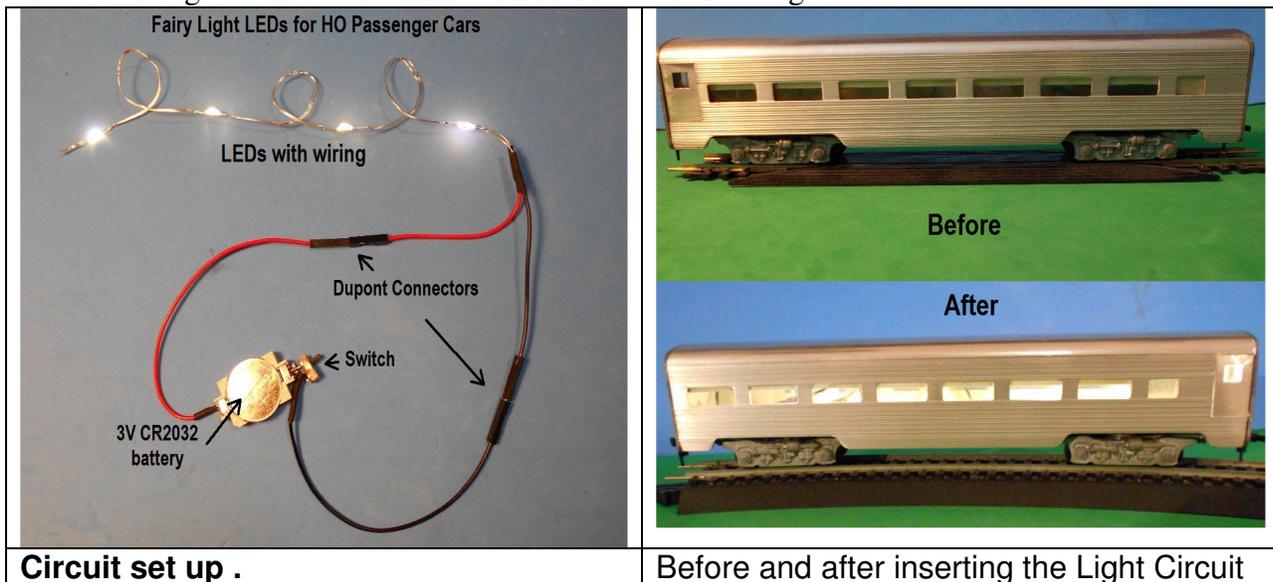
[modeltrainsounds.com](http://modeltrainsounds.com)

*Robert J. Wilkins (Aug 2020)*

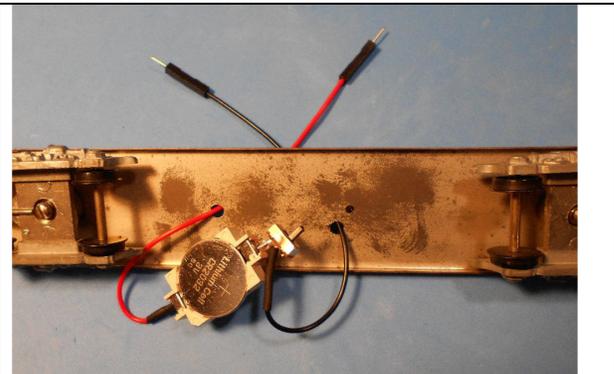
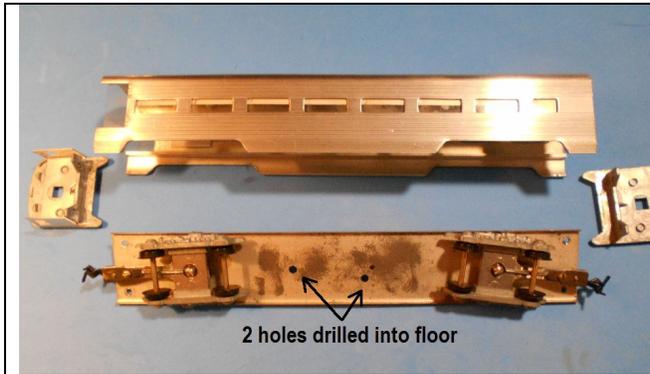
The use of a compact, simple, battery operated lighting system for HO Scale passenger cars is described. This is achieved using "fairy" string LED Lights that have recently become available for use in decorative home lighting. These LEDs are gallium surface mounted LEDs, roughly the size of a rice grain. They are arranged in parallel sequence connected by thin lacquer covered wires that form a string of lights requiring a low voltage to light. A small 3 Volt battery can illuminate 4 of these LEDs continuously for several days

The circuit is set up using a 3 Volt disc type battery (CR 2032) set in a low profile battery holder. A small micro-switch is attached to turn the lights on and off. Wires with Dupont<sup>(R)</sup> connectors are used to link the battery to the 4 LEDs used for cabin illumination. This circuit is set up in the passenger car with the battery holder attached to the under carriage of the car hidden from view. The wires pass through two holes drilled into the cabin floor.

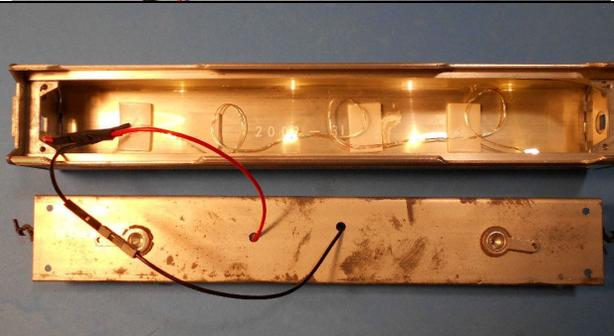
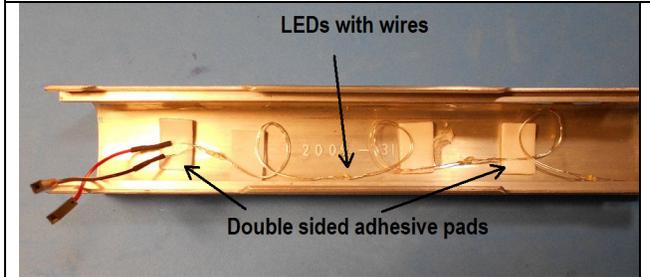
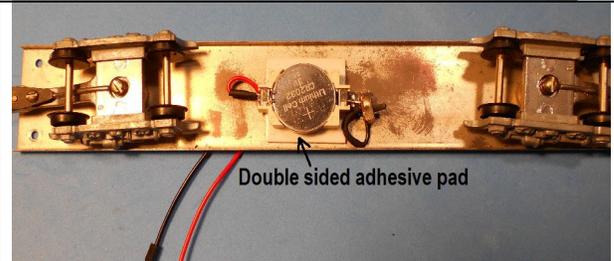
Here a vintage all metal streamlined KMT HO scale Passenger car is used for the installation.



# Circuit Installation



The car cab is disassembled from the floor. Using the battery holder as a guide, select two spots where holes will be drilled thru the floor. Start with a pilot drill and widen holes to 1/8-9/64" in diameter. Thread the wires through the holes and secure the battery holder to the floor using a double sided adhesive pad.



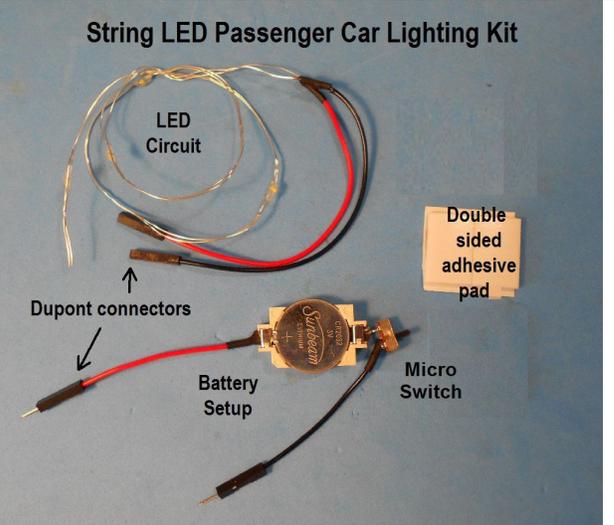
The wires for the LEDs are easily bent and curled so that the lighting can be distributed evenly throughout the cabin. Face the LEDs downward. Use adhesive tape to secure wires to the cabin roof.

The matching dupont connectors are attached and the circuit tested with the switch before reassembly. If all works well reassemble the car. The car is ready for the track.

This system requires very little preparation and minimal soldering or drilling. For convenience a Kit containing the components already assembled is available at the website. [www.modeltrainsounds.com](http://www.modeltrainsounds.com) The kit contains

- 1, The 4 LED String light circuit
2. Dupont Connection wires
3. Battery Holder with
4. Microswitch soldered to the holder.
5. Double sided adhesive pad

*No battery is included due to postal regulations A 3 Volt CR2032 is required .*

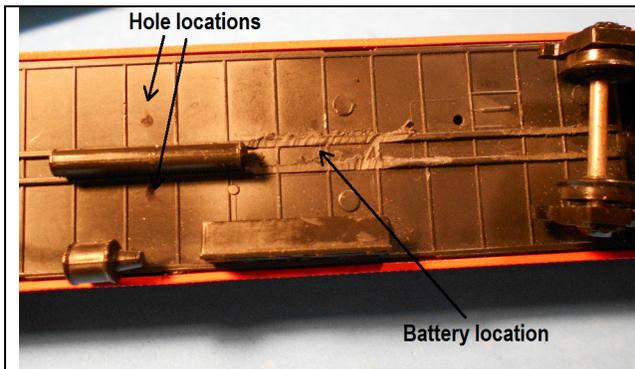




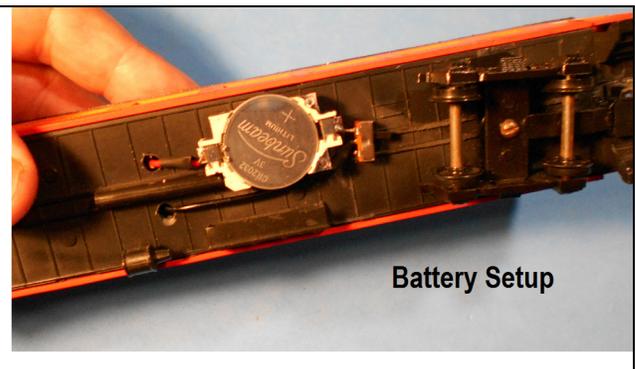
Another example of an HO Scale Pullman Passenger car



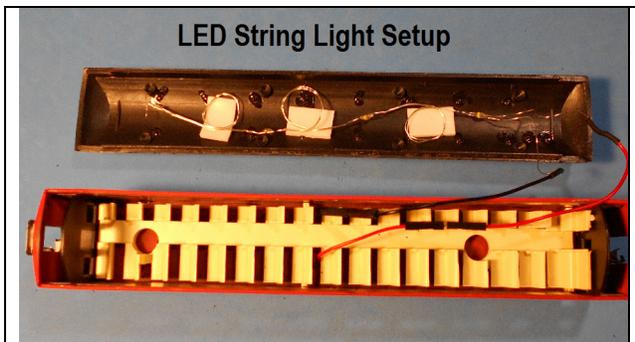
The car was disassembled . A metal plate in the floor was removed



The undercarriage was filed flat where the battery holder would be placed and the drill hole locations were determined. Holes were drilled using a pilot drill the 9/64" diam.



The battery holder is affixed with double sided tape and wire passed into the cabin. The perimeter of the battery holder was blackened using a black felt pen to disguise the holder



The lighting circuit was adhered to the cabin roof and wires connected. After testing the car is reassembled and ready for the track.



The car is illuminated with the switch ON. Turn OFF when not in use to conserve the battery. One battery will illuminate the cabin continuously for up to 72 hours.

For more information check the website [www.modeltrainsounds.com](http://www.modeltrainsounds.com)