

Shay - Electrical IV - Cab & Tender Lamps

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The tasks are to:

- Fabricate a light to illuminate the steam pressure and water gauges.
- Make tender headlamp and mounting arrangement.
- Connect wiring from lamps to switch panel.

Cab Light: The LEDs seemed to work well for the headlamp so a LED was tried for the cab light. The LED (#276-320) and LED holder (#272-080) were purchased from Radio Shack. The LED is rated at 3.6 volts/20 ma. A 75 ohm 1/4 watt series resistor was used to limit the current from the 3-cell 4.5 volt supply. The current is about 15 ma which gives off more than enough light. The holder is mounted in the brass bracket shown in photo on right. The bracket is fastened to the left side of the cab using two of the screws that attach the left side roof prop retainer. The piece above the lamp is a shade.

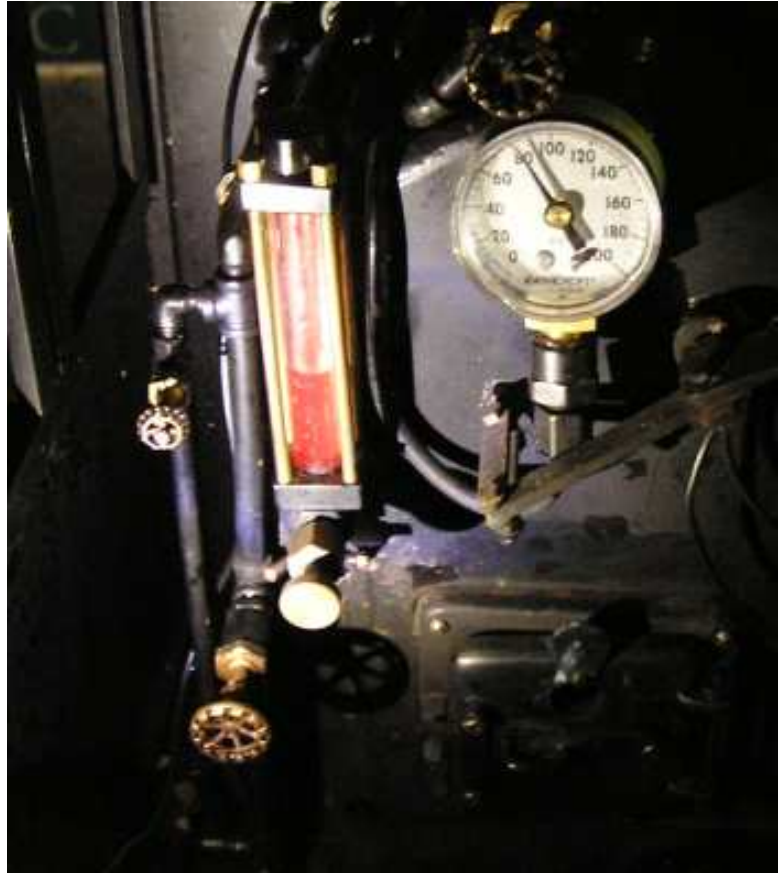


This photo shows the lamp unit mounted to the left side cab wall.

The brass was finished initially with Hobby Black. That quickly wore off so the visible parts were later painted.



The lamp is on (at night in a dark garage). I used compressed air to run up the pressure gauge to make a more realistic photo.

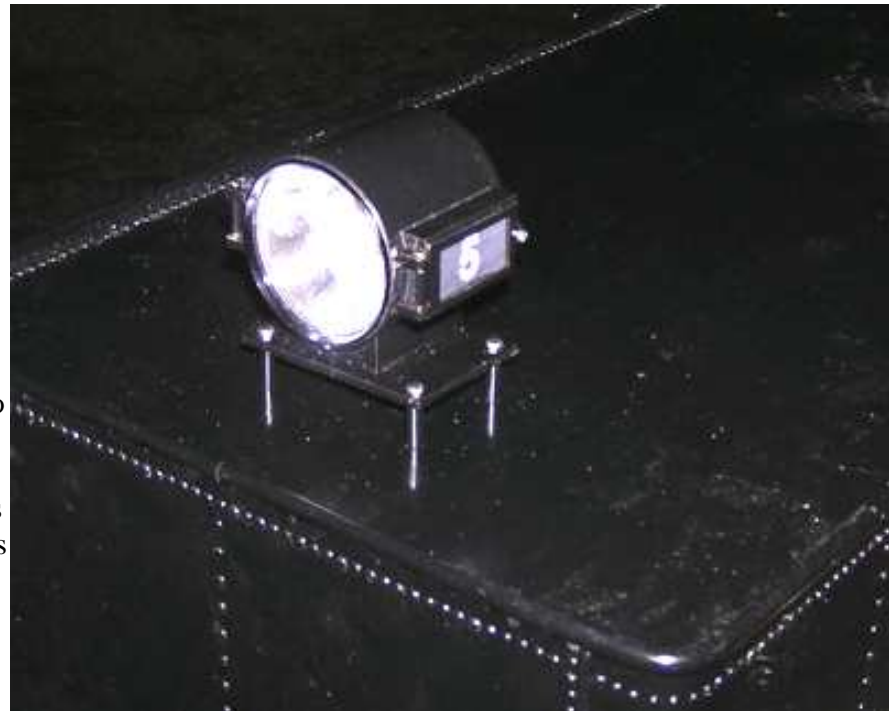


Tender Headlamp: The shays in many cases were used on short line and logging railroads where there was no way to turn them around so they ran forward in one direction and backwards in the other direction. As seen in the photo on the right, the Cass 5 tender headlamp is identical to the headlamp at the front. The mounting arrangement is however simpler. The lamp case attaches directly to the base which in turn is held above the tender top with rods or pieces of pipe.



Tender Lamp: The photo shows the finished tender lamp. The basic lamp was made just like the headlamp. A brass base was made by milling a radius to match the radius of the lamp case. The flat base is steel. The spacers are 3/16" copper plumbing tube. The base is attached to the tender top with 4-40 screws that go through the spacer tubes.

When making the front headlamp I found that it was very difficult to get silver solder as well as soft solder to stick to the exhaust tube used for the lamp case. This time it was impossible to solder to the tube. I had assumed the material was plain steel. If it is steel, it has some additive to keep solder from sticking --- maybe it's a corrosion preventative. This time all the parts were screwed together.



Lamp Wiring: The feed wire for the headlamp and cab lamp goes from the connector between the tender and the locomotive (see Electrical I), under the cab floor and then up through the hole for the left side feed water pipes at the left rear of the backhead. The plan is to install female pin plugs on the power wire and use male pin plugs on the end of the cab lamp and headlamp wires. The three are currently tied together with a wire nut in the left front bottom corner of the cab. The cab lamp

wire runs along the bottom edge of the left cab side. The headlamp wire is currently fastened to the feed water pipes on the left side of the boiler and then along the pipes than run down the rear of the boiler. This wire will run in the hand rail when it is installed later.

The tender lamp power wire is routed from the switch panel to under the overflow pipe. The lamp wire goes into the tank through a grommet under the lamp and then down the overflow pipe. The two wires are currently connected together under the tender frame using a wire nut. That connection will also be converted a pin plug at some point.

I think this finishes everything needed to run the shay at the track. The problem now is to get to the track and to get the shay to run.

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