

INTRODUCTION

The following discusses what's new at Richmond Controls since the Third Quarter 1999 Newsletter. Feel free to call if you need additional information - Jim

NEW LOCOMOTIVES AND CARS

Note: I generally don't devote any space to discussing installations in HO Scale and larger locomotives, since installations in these locomotives are so simple and straight forward (at least, when compared to N and Z Scale). It is generally safe to assume that there is a Richmond Controls lighting module for any HO Scale locomotive or car, as well as S Scale, O Scale, G Scale, 1" Scale, etc.

LIFE-LIKE N Scale GP20: This locomotive isn't really that new, but I lately discovered that the EZ01 is the best fit if special effects are desired. The EZ01 can be installed in the far rear end, occupying the space normally occupied by the rear LED board. However, it needs to be attached to the body shell rather than being plugged in. This works out very nicely, because it lets you remove the shell without having wires connecting the light board to the chassis. This makes servicing the mechanism more hassle-free.

For steady lights, like two steady headlights only, the EZ11 can be installed in the same manner.

Nobody has yet asked for ditch lights in a GP20, so I can't comment on that.

NEW PRODUCTS

EZ08: The EZ08 module has become the module to use for O Scale. It can be set up to do all of the things that the other modules do. For lamps in O Scale, I have been using the Miniatronics 18-201, which is a 1.5 V 40 mA bulb with a plain end (not a lens end). By the way, Details West makes a nice O Scale rotary beacon detail part that is just like their RB-106 for HO Scale, but appropriately larger.

The EZ08 module is \$30.00 plus \$2.00 for each light source. If the customer wants "white" LEDs for the headlamps and ditch lights, they are \$6.00 each instead of \$2.00 each. I have been taking an EZ08 with "white" LEDs to shows, but I always get a negative reaction. People think the "white" LEDs have too much blue tint, and I agree.

N SCALE RADIO TOWER: I have started shipping the Showcase Miniatures etched brass N Scale radio towers with lighting kits, in two versions. First, for those with good soldering equipment and skills, plus a lot of

free time and patience, I have a "bag-of-parts" kit for \$50.00 with the antenna, or \$36.00 without the antenna.

I have found it desirable to have two construction jigs when assembling these kits. The kit instructions describe how to make the jigs. You need some good quality 1 x 2 lumber or 3/4" plywood, plus a table saw, to make the jigs. For those who don't want to fool with jigs, I will loan a set of jigs for free, but only if a refundable \$25.00 deposit is sent first.

The second version of the antenna is fully assembled and working. The price is \$150.00, and most people seem to want to purchase this version rather than the "bag-of-parts" kit. I am unable to discount this item to dealers, due to a very low profit margin.

The standard lighting kit includes a photocell to let the controller know whether to drive the lights in a daytime mode or a night-time mode. In the daytime mode, there are two white strobes flashing once per second: one at the top and one in the middle. In the night-time mode, there are two "winking-out" red LEDs located where the strobes are located, plus two bands of three tiny steady red LEDs located at the 1/4 point and the 3/4 point on the tower.

One potential customer talked to me about connecting two towers end-to-end and cutting the top one such that the total length was 19". He plans to use it as a functional ham radio antenna. That should be quite a sight -- I suppose it should work.

NEW PRODUCT PLANS

BUSCH HO SCALE HIGHWAY PATROL CARS: The EZ08 fits inside the Busch HO Scale automobiles, and I am using it to provide a variety of flashing lights on these cars. I am using red, blue and yellow LEDs for the strobe lights, and 1.5 V lamps for the headlights. I am still looking for red and blue LEDs with more suitable profiles, and may have to go to surface mount LEDs. The software works fine, but the LEDs are still a problem.

LOCOMOTIVE CURRENT COLLECTORS: Most of you are probably familiar with the axle wiper current collectors available from RICHMOND CONTROLS for acquiring electrical power from the track. There is one universal design for HO Scale, and several different designs for various N Scale passenger car trucks and caboose trucks. At a recent show, a customer requested wipers for the Con-Cor Big Boy and Challenger tenders, to improve operating reliability of these locomotives. Designing wipers for these tenders is complicated by the facts that the tender's wheels measure about 40" scale,

and both wheels are insulated from the axle. I expect to give it a try.

Meanwhile, I had noticed that all of my N Scale brass W&R FP45s and F45s ran very poorly, obviously due to intermittent electrical contact. Close examination revealed that the electrical pickup was quite poor, consisting of wipers designed to contact the wheel treads of four wheels in each 6-wheel truck. I have recently finished making and installing a prototype set of replacement wheel wipers for an FP45, and it now runs as reliably as a Kato or Atlas locomotive. Running by itself, it never hesitates. I am now selling a set of four wiper assemblies for these locomotives for \$15.00.

This first locomotive wheel wiper set, which my computer will know as EZWPR-SAM6A, fits the Samhonga (sp?) 6 wheel metal truck with an obvious lengthwise step down the center in the bottom surface when viewed from the bottom. The words "SAM" and "KOREA" are cast into the bottom. The axle spacing is about 1/2". There are two slotted screws attaching the gear tower to the assembly, plus one Phillips screw at the far end. I have found these trucks on my W&R F45s and FP45s, plus my Hallmark brass C40-8Ws. Installation is straight forward but a bit tedious.

If anyone has any requests for other locomotive wipers, please let me know. I expect to do the Con-Cor Big Boy and Challenger tenders next.

TROUBLESHOOTING AN EZ-LITE™

Over the past few years, I have noticed that a few problems with EZ-LITE™ circuits have occurred more than once. In the following, I will describe the symptoms and visible clues, and list the causes and remedies.

Special Effects Circuits (Mar, Beacons, etc.): ***Extremely fast operation of the special effects feature, but normal headlight operation*** -- generally caused by a missing timing capacitor or a poor solder joint at either the timing capacitor, timing resistor, or pin 18 of the microprocessor. The timing capacitor is a VERY TINY tan component with silver ends, generally located next to the timing resistor. (The timing resistor is a TINY black component with silver ends, marked "912" on the top surface.) The microprocessor is the integrated circuit with 20 pins; pin 1 is at the corner next to the colored dot, and pins are counted counterclockwise. Thus pin 18 is the third pin from the left end of the top row, generally opposite the letter "P" in the part number on the device. If pin 18 is not solidly soldered, this can be determined by pressing down fairly hard on the microprocessor while

power is applied. If the special effects frequency changes, pin 18 is the culprit.

If the timing capacitor is missing, that should be fairly obvious after a close inspection. If it is present but not soldered well, press down on it or the timing resistor as described above.

All Circuits: ***No lights at all, input diode and/or input capacitor damaged*** -- this is generally the result of applying excessive voltage beyond the 16 volt PEAK rating. (The input diode is a small black two-lead device with no printed markings. If you look closely, you can make out the laser-inscribed marking "B2U" or something similar. The input capacitor is the tallest component, with a silver bar printed on one side and marked "68-16".) Often, the damage is visible in the form of an obvious hole burned in the diode, or the top blown off the input capacitor. To prevent this problem, remember the Groucho Marx routine, "Doctor, it hurts when I do this." "Well don't do that." One earlier newsletter provided details regarding excessive peak voltages from certain popular power packs. While you are waiting for me to repair your circuit, you may want to search for a new power pack.

No lights at all, no obvious physical damage, damaged lamp wire insulation -- This generally occurs when a bare portion of a lamp wire touches part of the locomotive chassis. If track power is applied to the output of the voltage regulator in this way, the regulator (device with 5 or 6 pins) and the output capacitor (small component marked "JA7" or "CS6" or something similar) can be destroyed.

REPAIRS: those modelers not equipped for repair of surface-mount circuits should return the modules for repair, including \$20.00 for repairs and postage. I always treat the timing capacitor problem as a warranty repair situation, and will return the \$20.00. The other problems are not covered by the product warranty, but these problems can be repaired without discarding the module and buying a totally new module.

TRAIN SHOWS

Train Show plans for the year 2000 include Plano TX (January), Chicago O Scale (March), Houston (April), Denver NTRAK (May), N Scale Collector (Reno, June), NMRA (San Jose, August), Santa Fe, SP, and CB&Q Modelers Conventions, Ft. Worth (November), and Oklahoma City (December).