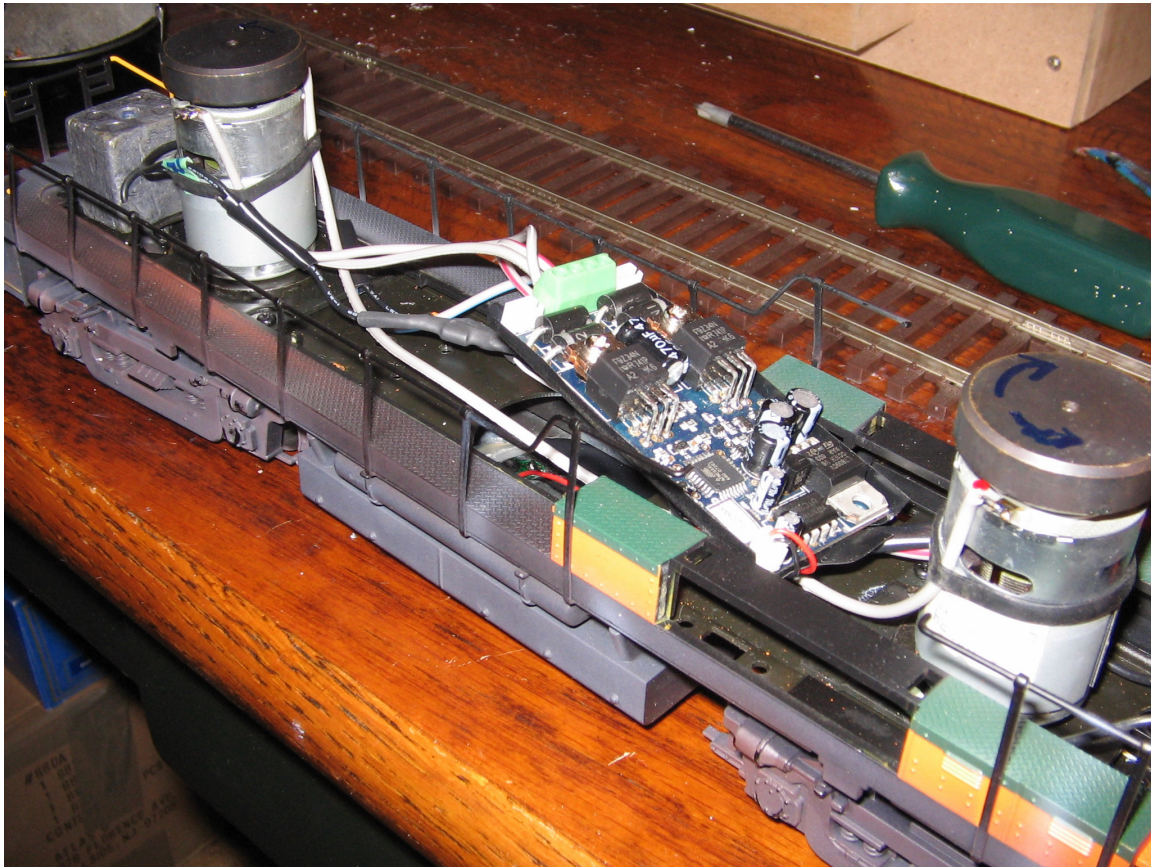


## 5 Amp Dual Mode Sound Decoder by Frank T.Verrico

Model Rectifier Corp.'s latest venture into O scale is a 5 amp. dual mode, [DC/DCC], sound decoder. This full featured N.M.R.A. compatible sound decoder features 4 different prime mover sounds, multiple horns, multiple bells, and 28 accessory functions.



In the DC Analog mode, this decoder will give you just synchronized prime mover sounds, as the track's voltage is increased. Also the user will only get the default prime mover sound, default horn and bell. If the DC user knows someone with a DCC system, they can have them re-program the default sounds to ones that they want. Using the MRC Blackbox, [item no. 0001050], a DC user can access all 28 functions, a few of which let you choose the different prime movers, horns and bells, [without the need to program CV's].

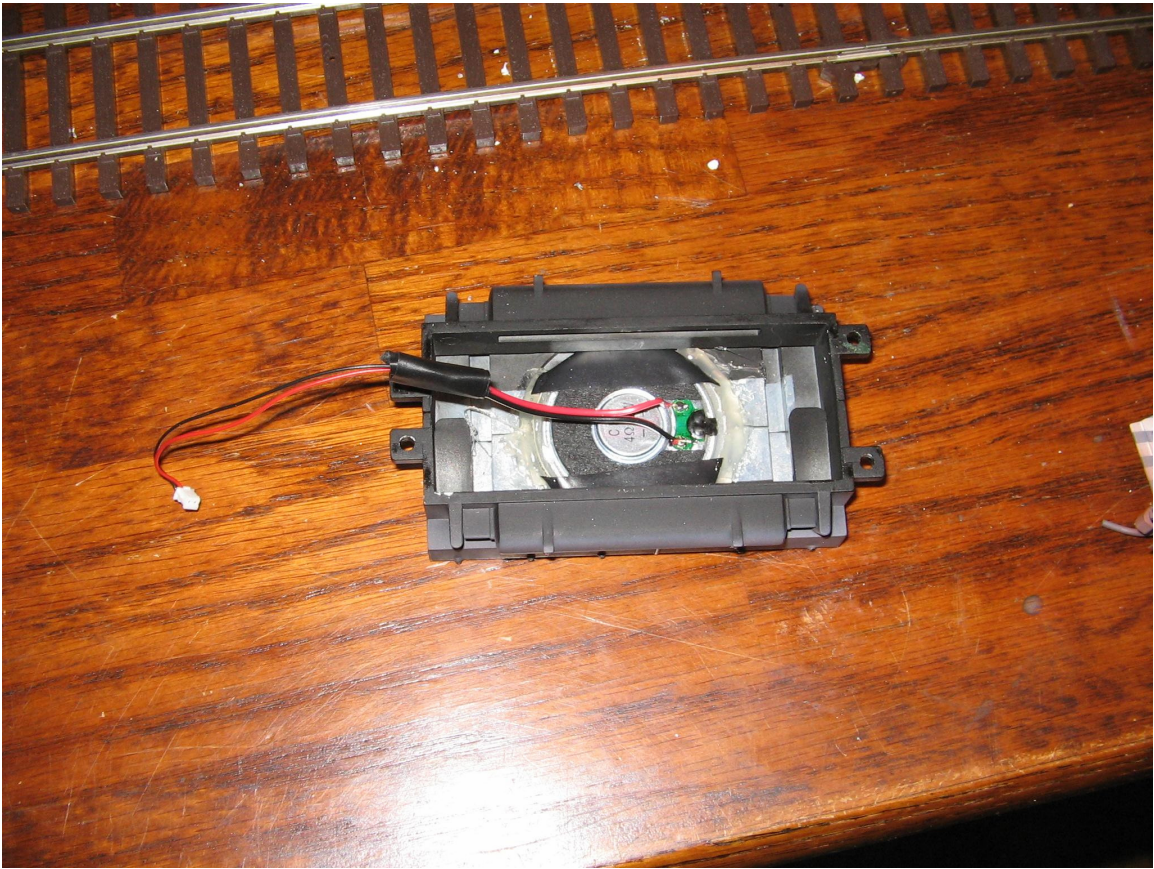


I chose a Weaver RS-11, two-rail loco for this conversion, as there is no electronics package in this locomotive that has to be removed. Four screws hold the body shell and fuel tank casting on the chassis, these screws need to be removed, and the body shell can be removed after popping out the handrails from the cab sides. There is not much slack in the headlight wires, so once the shell is removed, cut these wires close to the pick up wires, and place the shell in a safe place. There are 2 vertical motors with flywheels and 6 wires inside the loco, 2 wires run along each side of the chassis from the right and left side wheel pick-ups to their respective motor brush tabs. Then there are two wires soldered to each of the pick-up wires that go to the front and rear headlight bulbs.

I disconnected the wires from the motor brush tabs, leaving the pick-up wires on both sides of the chassis attached to the trucks. While everything was disconnected I used a V.O.M. to check that everything was isolated for the decoder installation. I drew rotational arrows on the flywheels with a permanent marker, to remind me which way each motor turns. I then wired the motors to run in series, as this tends to give better slow speed response. Once I had wired the motors in series, I checked with a DC power pack to make sure both motors spun in the correct direction and did not fight each other.



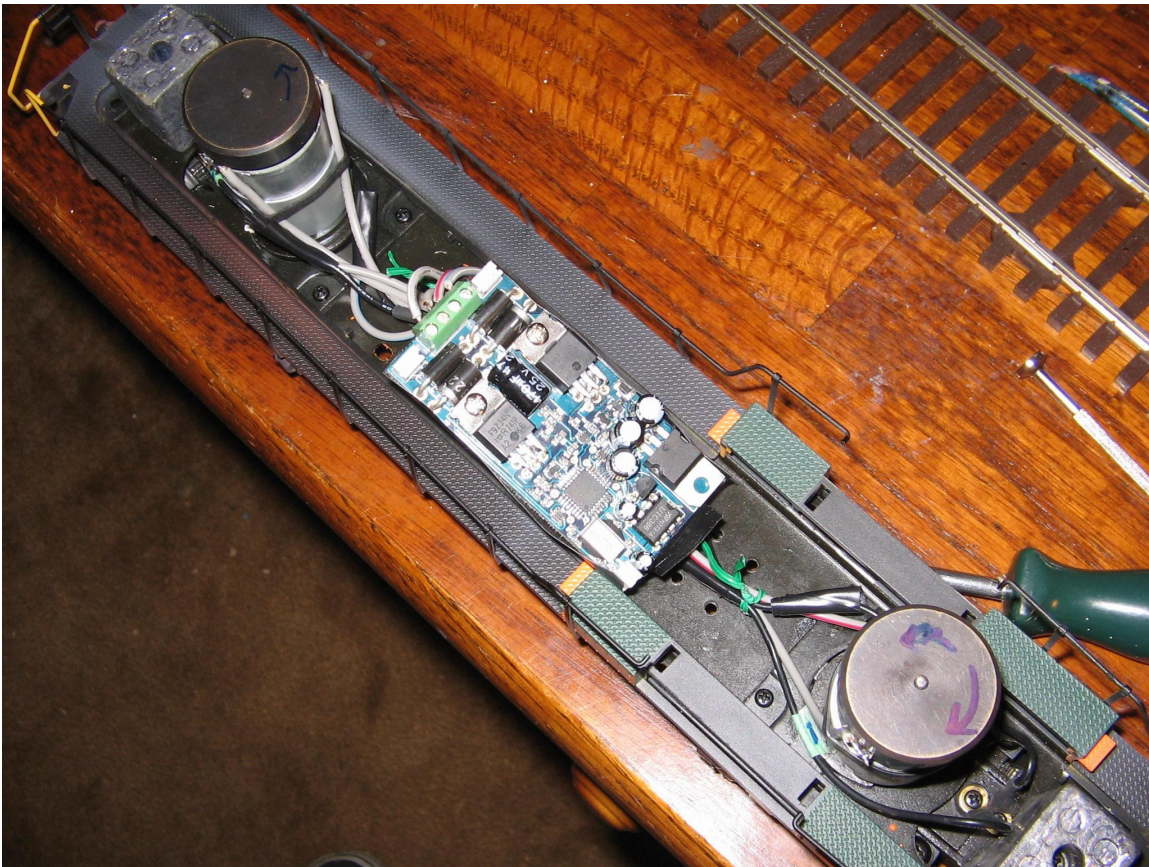
Using the bottom of a plastic craft paint container, I fashioned a thin baffle for the speaker. The speaker with baffle was then hot glued into the fuel tank casting. The speaker wires were also lengthened at this time to afford more flexibility in the final placement of the decoder. Before the fuel tank casting was attached to the chassis, I placed some foam rubber on top of the speaker to add a little bass to the sounds, and routed the speaker wire with plug up through the chassis.



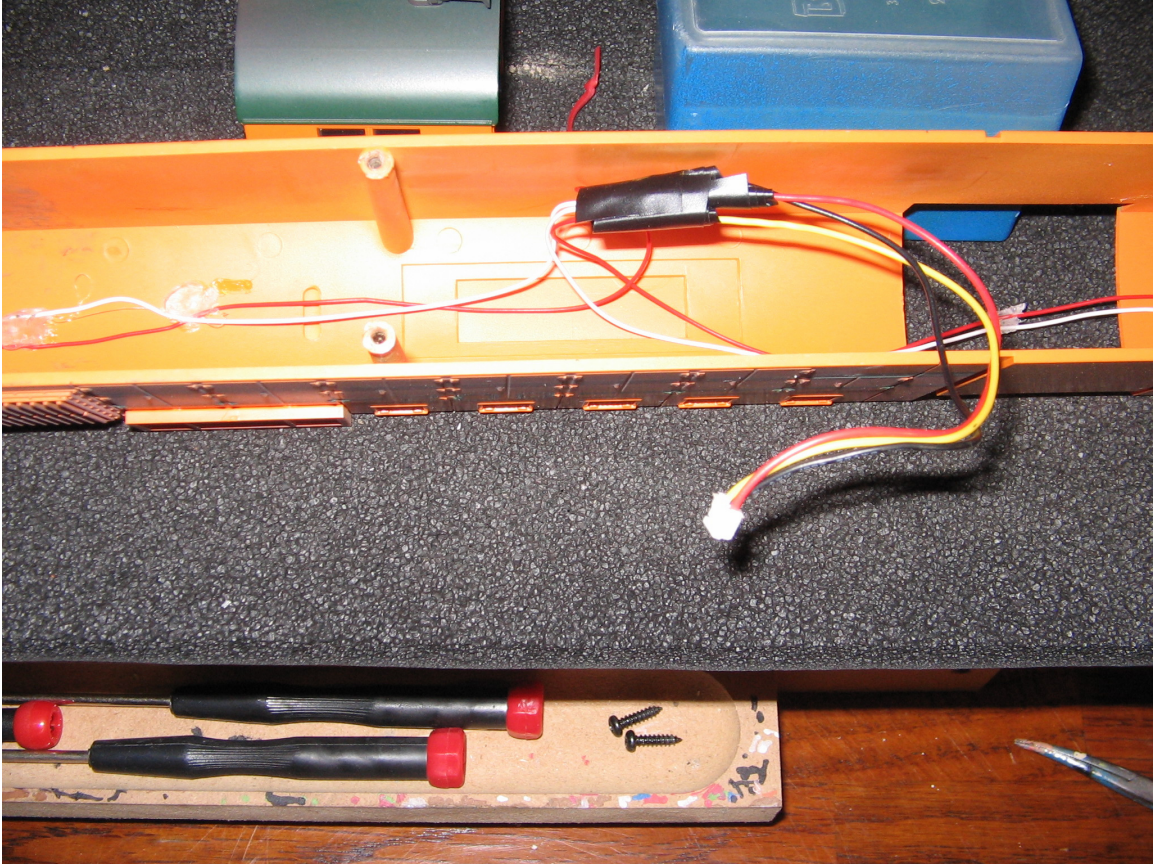
The decoder has a green connector at one end to accept the pick-up and motor brush wires, [the two outermost slots are for the wheel pick-ups, the two inner slots are for the motor brushes]. The wires are simply stripped approx. 1/4 inch, tinned with solder, placed in their respective slots and screwed down tight. Since there is no "F" on the loco to designate the front, I chose to wire the loco to run, "long hood forward".



At this point black tape was used to insulate the bottom of the decoder to prevent any short circuits from occurring. The decoder has two 3 pin sockets on both sides of the green connector, the one closest in the picture is for the directional headlights, the farthest one is for accessory lighting. Since this locomotive has no ditch lights, or strobes I did not use the accessory light plug. The plug for the headlights is wired, front light-pin closest to the green connector, common-middle pin, rear light- pin close to the edge of the board. I soldered the plug that came with the decoder to the light wires that remained in the body shell. Since the bulbs were rated for full track power on DC, no resistors were needed between the bulbs and the plug.



The wires were then neatly bundled with wire ties and the decoder installation was finished except for plugging in the headlights, and re-installing the body shell.



The cab was left off to check inside the shell that nothing was pinched or rubbing against the flywheels or the decoder. Now it was time for the test. I fired up the old DCC system, placed the loco on a test track, dialed up address number 3, and away she went.



The cab was re-installed on the body shell, the handrails were popped back in to their holes and now the loco is ready for working on the railroad.