For the first, we start with the last, here's the finished product.

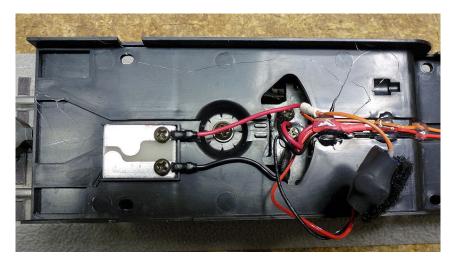




Here's the frame of the car. Note that we tied the DC voltage into the two contact pads provided to make disassembly easier.



Here's the end of the car with the current conversion components completely assembled and the Velcro mounted for securing them inside the compartment



This is the other end, we just route the power and DC lines back to the other end of the car.



This is the middle of the car. Note the PTC to limit current between the rollers in the case of a derailment.



This is the completed lower level lighting. The connections for power come through the spring contacts on the left.



Here's the detail of the power connections of the lower level, they just tie into the existing connector for the spring contacts.



Here's the other end with the completed module attached with the Velcro to the bulkhead. The Velcro allows the module to be easily removed to lift the bottom seats off the chassis.



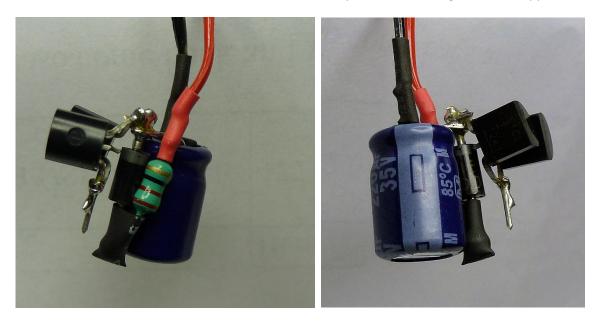
This is the completed top level lighting. As in the bottom level, the existing spring contacts are used to conduct power to the light strip.



As with the lower level, the existing spring contacts are connected to the lighting strip and used to convey the power to the frame connection.



Two views of the detail of the current regulating module. The open wire hanging down is where the final wire will be connected, that's the constant current output. Note two regulators to support two LED strips.



With all of these projects, there always seems to be some spare parts left over!

