Building a Toad Braking Bypass Circuit

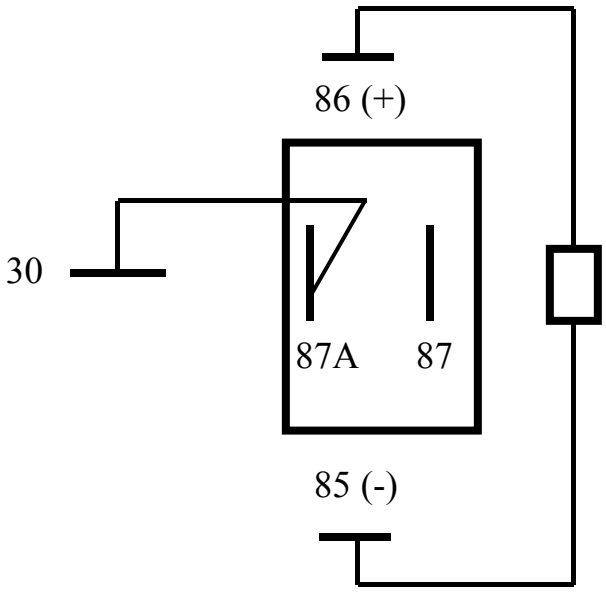
This circuit will prevent activation of the toad braking system during engine/exhaust braking.

I will write this document using my knowledge of the Freightliner chassis wiring scheme. Both Powerglide and Spartan chassis's use similar wiring schemes.

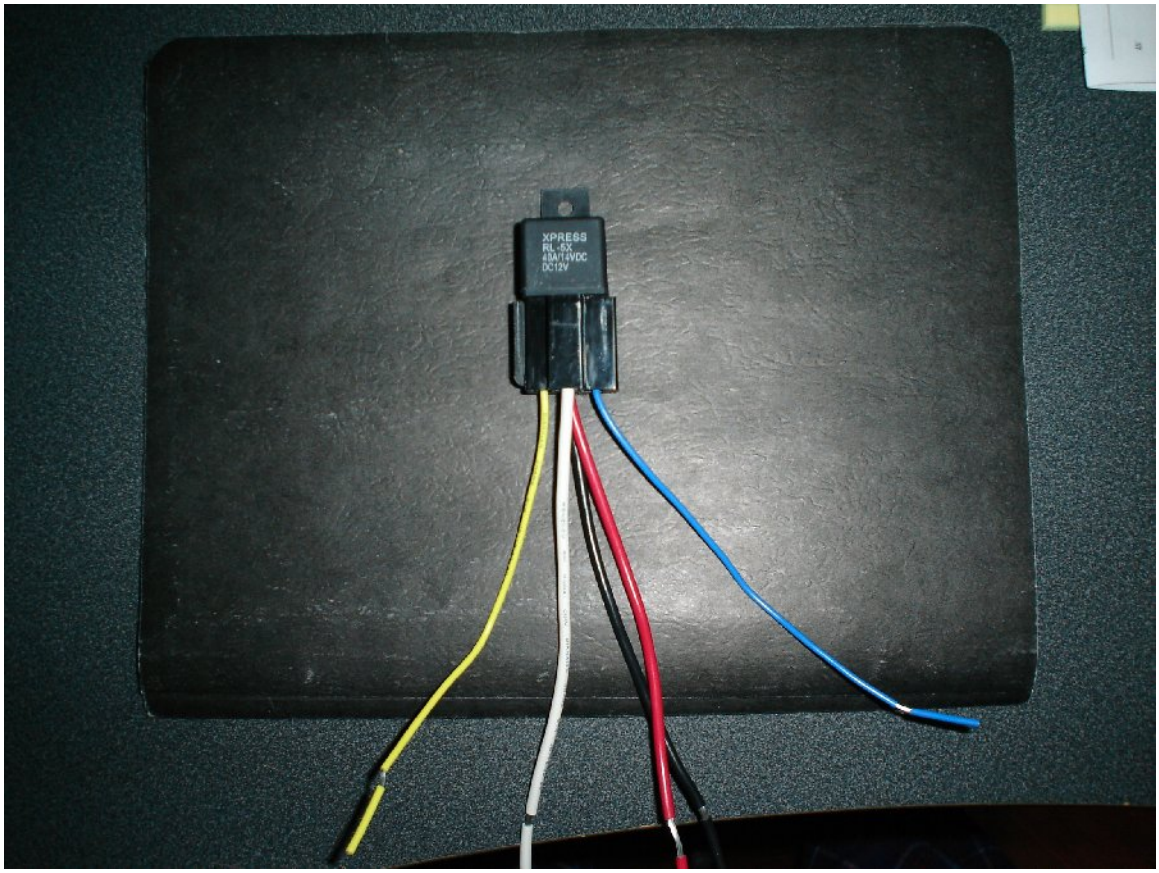
Freightliner uses two brake light switches (wired in parallel) to control the voltage to the rear brake lights. The switches use air pressure to create an electrical connection across the brake light switch. 12 volts from the coach battery is applied to one terminal of the switch when the brake pedal is depressed the air pressure makes a connection between the two posts of the switch. When that happens, the battery voltage is passed through the connection to the circuit which supplies control power to the coaches' rear brake lights.

On the Freightliner chassis that wire is numbered 36G. 36G is the control power to the brake lamp supply relay. The brake lamp relay is housed in the fuse/relay box under the center drawer stack. The power to the relay is supplied through a fuse in the same box. The output of the relay when energized by 36G is on wire number 36E. 36E is the wire which routes through the bulkhead connector and then under the coach floor along the inside of the frame to the rear passenger side panel. That panel contains another box which is used for the 7 pin tow connector with relays and fuses.

The purpose for writing this document, in some cases the toad supplemental braking is energized by the coach rear brake lights. When that happens during engine/exhaust braking, the toad brakes can be damaged by constant application of the toad brakes. Using the following simple electrical circuit can prevent that damage from occurring.



Tap into wire number 36G and connect the wire to relay terminal number 86 (+) on the relay harness. Connect relay terminal number 30 to a fuse (fuse amperage determined by the toad system) which is in turn connected to 12 volt coach battery power. Connect relay terminal number 85 (-) to a know chassis ground connection. Unless your coach has a spare wire (such as the blue trailer braking wire on the Freightliner chassis) you will need to run a wire from relay connector 87 to your toad supplemental braking circuit. The wire size will be determined by the amperage needed for the supplemental brake circuit.
Below is a picture of the relay and harness I use in most of my wiring projects. The relay and harness together are about $ 6.00. The relay has 40 amp contacts @ 14 VDC.



Of course there are many other ways to complete this project. This just happens to be my way.
Anyone who desires to use this idea is free to do so, with my blessing. Print out this document, then build and install it yourself or have someone build and install it for you.