

Justin,

Sorry for the excessive delay with this info.

1) Relay controlled reverb switch in fender deluxe.

All of the modern fender amps that I have ever played with, including the deluxe, use an AC signal of about 18V for channel switching that is partially rectified or reduced by diode drops introduced by the footswitch. These changes in the AC signal are detected by the amp which allow channel changes to be made. NOTE: this AC signal and it's ground that goes to the pedal is very noisy and should be kept away from audio signals.

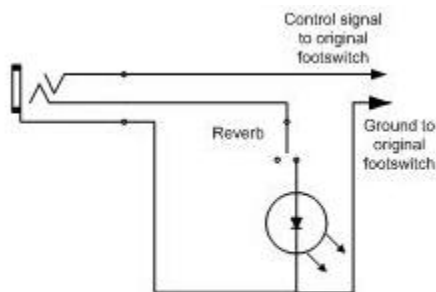
The deluxe uses a very simple two button footswitch.

The goal was to instead of using a mono cable for the footswitch, use a stereo cable with the third wire controlling the reverb but still maintaining the original two button functionality if a mono lead was used.

The reverb switch mod that is already on your site refers to shorting out R35 to ground. This is what I did originally but didn't like using an additional lead taking the ground signal out to the footswitch and back which collected a lot of noise. I had two problems with it. a) the amount of noise it introduced to the reverb, including the pop that could occur and b) running an additional lead from my amp.

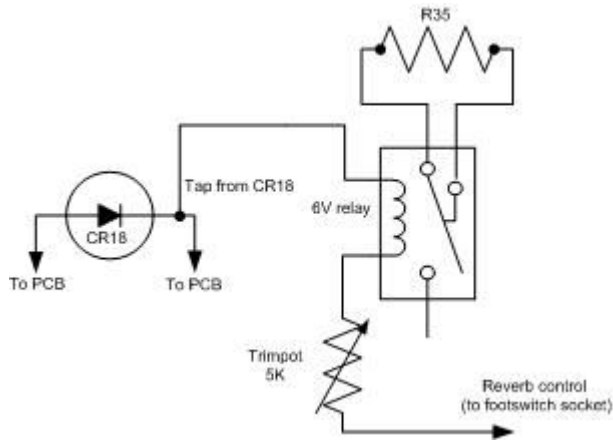
I tried using the ground in the AC pedal lead and just a stereo lead but this ground was VERY noisy and essentially unusable.

The plan was to use a relay in the amp to pull R35 to ground and control the relay with a footswitch. This way I could use the AC ground used by the original pedal and still keep the audio signal path short and internal to the amp and hopefully noise free.



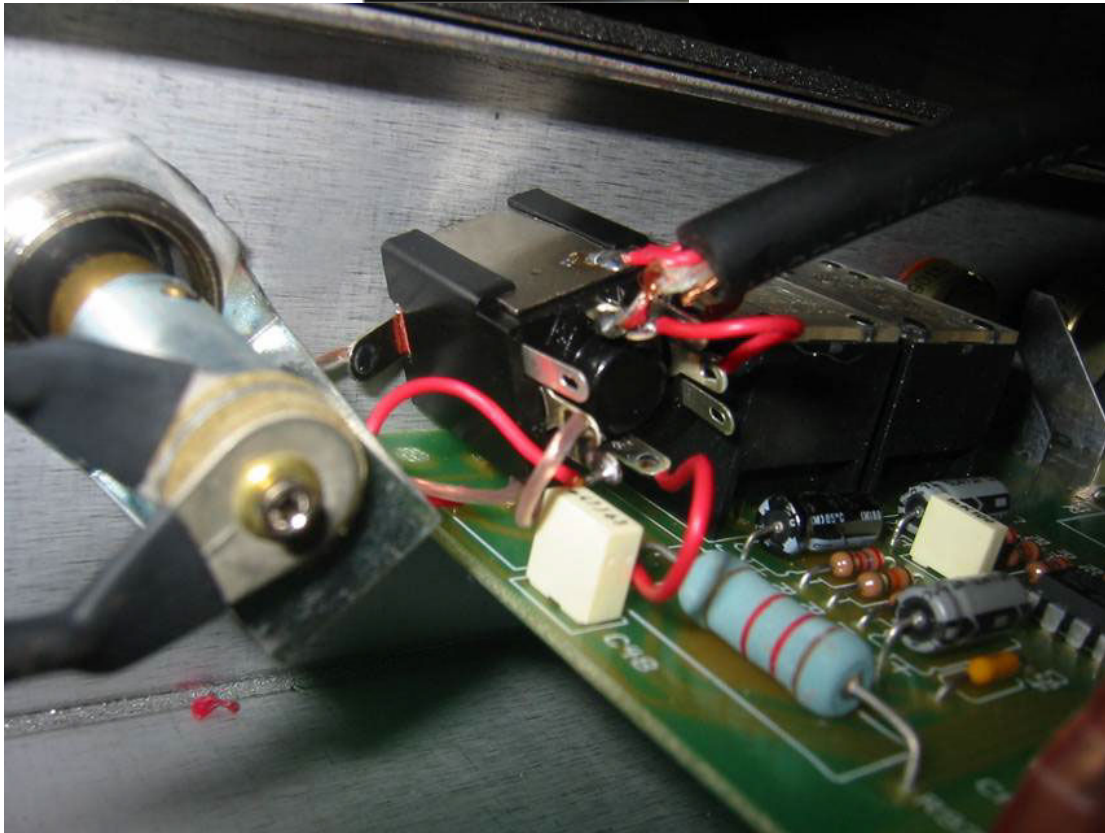
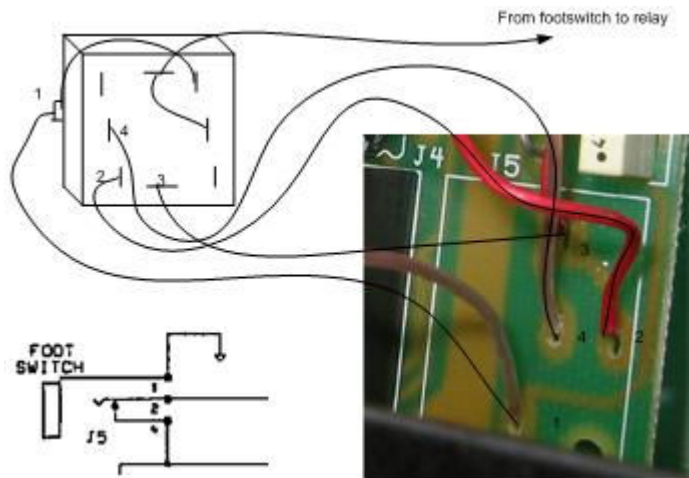
So the plan was to tap the 16V rail control signal of one of the relays in the amp => through the control of our reverb relay => down to the footswitch which is just a LED and switch (shown above) => to the AC ground in the original two button footswitch.

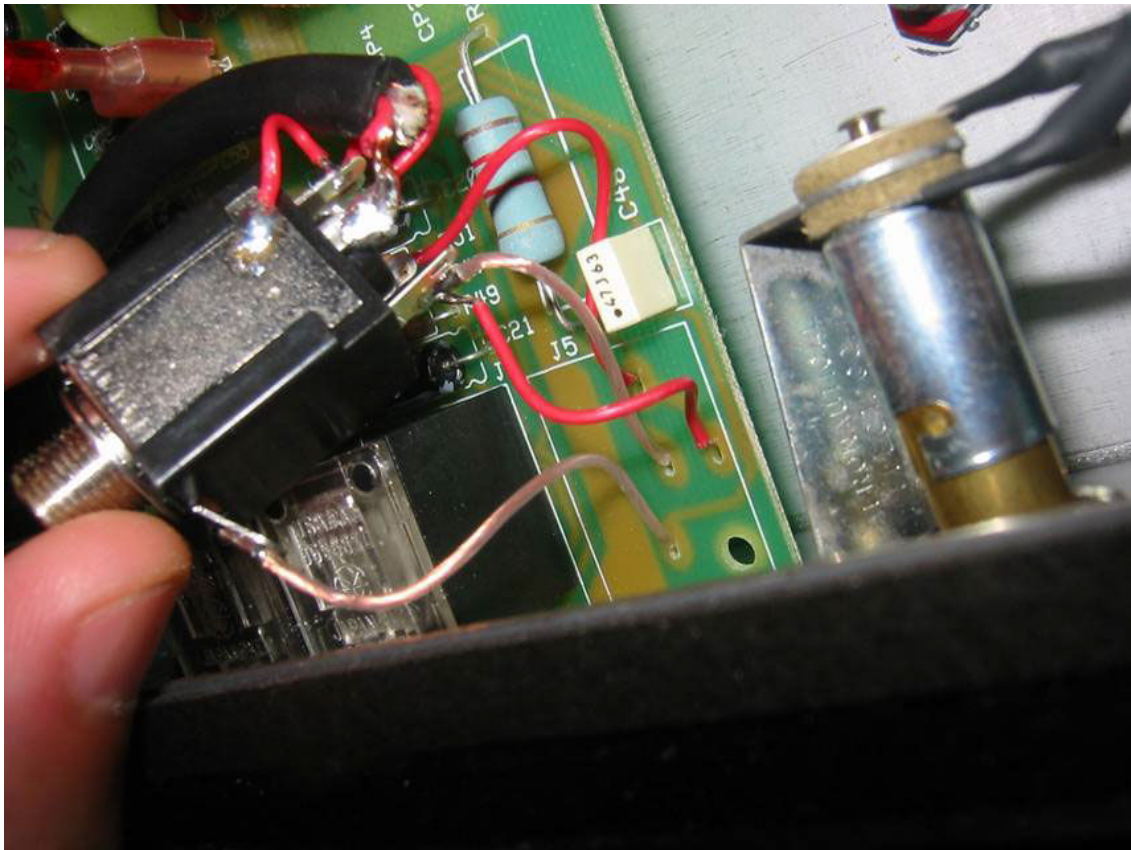
I had a low voltage relay originally installed which worked quite well. Problem was that it was normally open and had no normally closed pin so that when the reverb was ON the relay was normal and therefore the LED was OFF which is backwards. I purchased the next available relay with both pins which was a 6V relay and it affected the normal operation of the amps switching. When the relay was closed it shorted out the 16V as it was held closed and affected the normal switching of the channel. After trying a few things the best end result was to tap the 16V and use a trim pot in line with the relay control path so that its effective resistance when closed can be adjusted until normal channel operation still occurs.



This was tapped at front side of CR18 which is where the relays K1 and K2 are fed.

Next was to install a stereo socket where the mono footswitch one was on the amp. I used a stereo (jack switchable) socket to maintain normal channel operation via buttons on the amp while the footswitch cable was not in the amp. I removed the original socket from the PCB and connected the 4 wires to our new socket as shown. 1) gnd 2) connected for button operation 3) input 4) connected to input as shown below: where the socket's pin one is the ground or chasis.





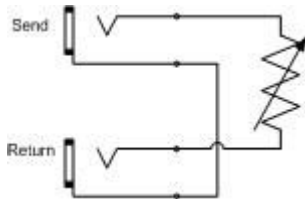
The socket maintains the switching for the amps front panel channel buttons operation.

That's it! We now have a reverb footswitch with led that's not noisy an anyway. It also does not require any change to the chassis of the amp. Essentially an invisible mod.



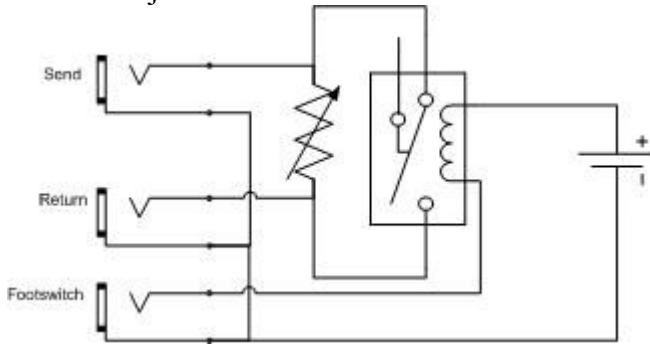
2) Foot switchable volume boost.

This is basically the volume cutting box design from your site that sits in the effect loop at the amp and has only a volume nob which reduces the output signal after the effect loop.

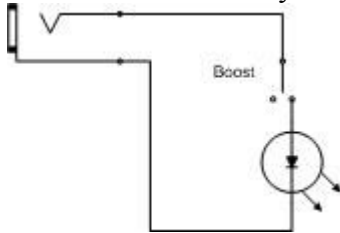


All I have done is add a relay that enables it to be switched in and out so that when its' switched out you get a clean volume boost, a battery to run a LED and the relay, and a

footswitch jack.



The footswitch is very simple:

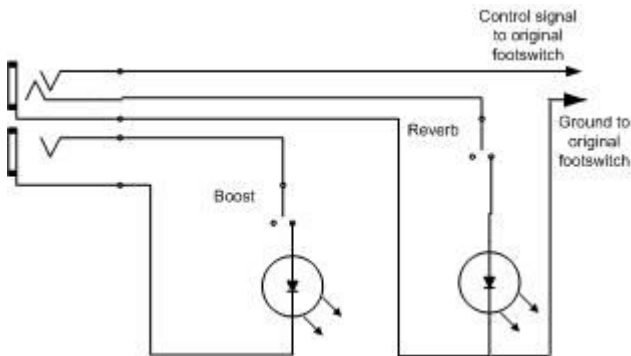


Its just a jack with a switch and a LED.

The effective resistance in the relay is enough resistance that you do not need a resistor inline with the LED. This may vary for different relays and LEDS. Can add one if you like, it wouldn't hurt.

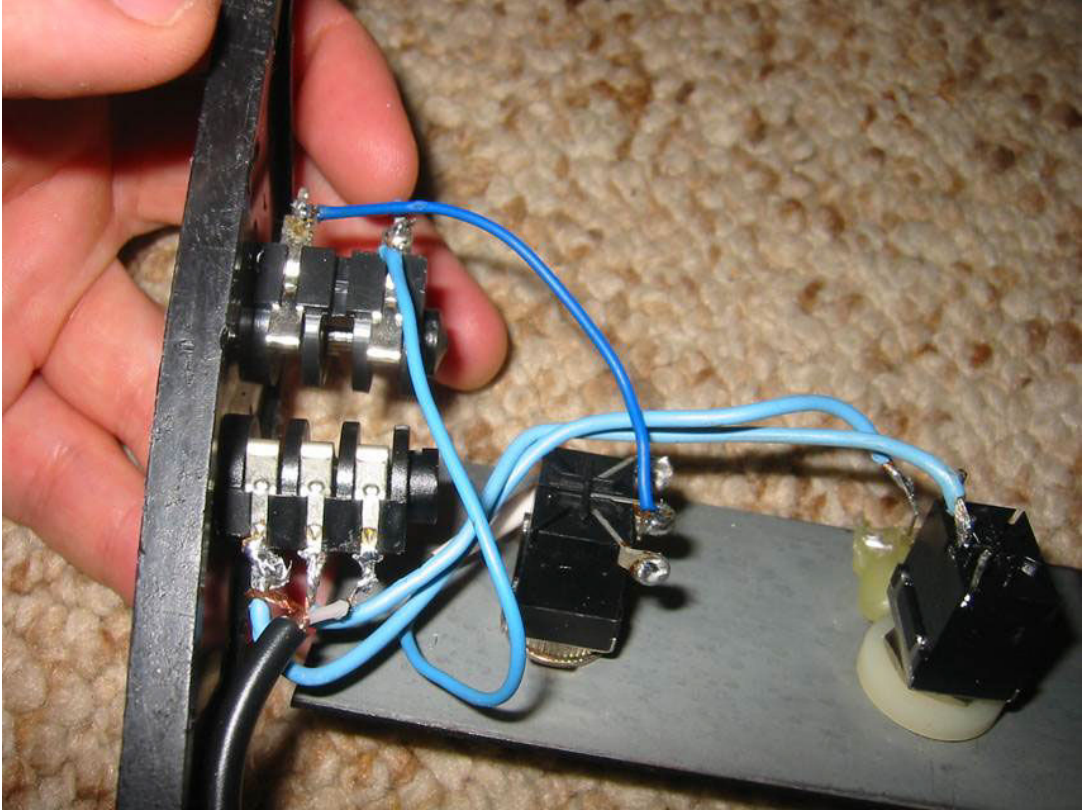
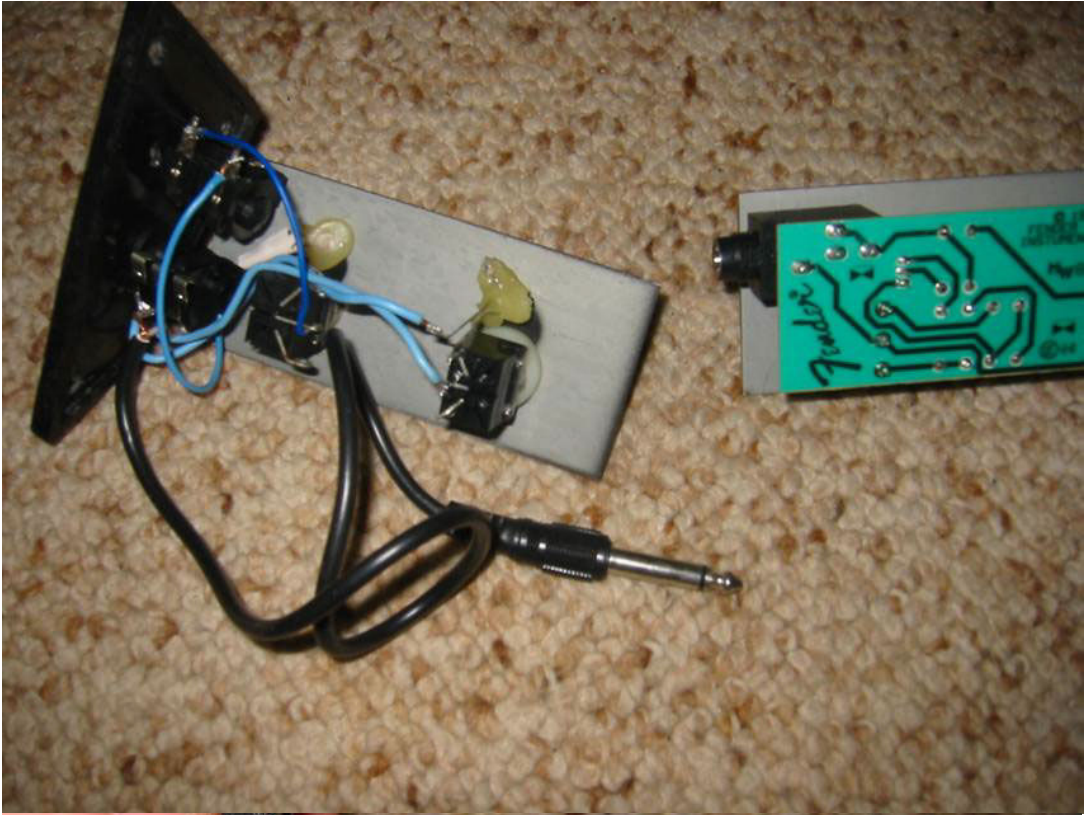
Now to combine the two ideas.

We are going to get a second two button footswitch and connect it to the side of the original two button footswitch for the deluxe. Remove the guts of the new foot switch and install a button and a LED for your reverb and a button and a LED for your boost. Install another socket for the boost lead so that the plastic side where the lead plugs in will now have 1 stereo socket and 1 mono socket. Wire it as follows:



I wired the control signal and ground to a short lead with a guitar jack on the end so that it can plug into the other footswitch so as to not make any damaging mods to the original switch.

End result looks like this:



Shit house soldering I know.... But hey it was a prototype so I used spares that melt and don't solder well. I have no excuses.





I haven't labelled the footswitch yet but the yellow LED channel select is the reverb and the chorus is the boost.

The advantage of using a second lead for the boost is that if you don't want to use the boost for a gig you don't need it to have the 3 button operation of the amp and just run the single stereo lead.

Alternatively you could have installed the reverb switch into a 3 button pedal which I tried but the button spacings for the two button switch are not the same as the three button switch so I didn't want to buy more parts to duplicate the circuit or damage the original pedal by gutting it and taking out the pcb.

So now if you use a stereo lead for your footswitch you can change reverb as well. If you use a mono one it will still function as a two button footswitch.

Also this boost pedal idea can be taken to any amp with an effect send and return. Its very simple and when the battery fails in the unit at the amp the relay simply stops responding, and your LED doesn't operate. Your amp still runs perfectly, you just can't boost.

The best thing about these two mods is that its totally reversible and you can apply it to most amps that don't have boost or reverb.

--again sorry for taking so long to respond Justin. I've been in my own world with a '93 fender super amp and forgot about this for a while.

I hope this is useful. It's a very easy mod to do. I'm sure I'm not the first.

Cheers,

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