

# Notes on the Classic 30 "Tweed Bassman" Mods

By David Becker

## Introduction, Prerequisites and Personal Prejudices

Anyone wanting to work on a Classic 30 would do well to read Steve Ahola's excellent articles on both the Classic 30 and Classic 50. He offers many ideas for additional mods as well as some very practical tips for dealing with the Classic 30's internal construction, which seems to have been conceived by a sadist on a Monday morning when the office coffee maker was broken. Steve deserves a large part of the credit for these mods as well. He originally came up with the "Tweed Bassman" mods for the Classic 50. I have "ported" them over to the Classic 30.

These mods don't of course, really make your C30 sound like a tweed Bassman. They do however give the amp a looser, raunchier sound that is more responsive to pick dynamics. If you find the stock sound of the C30's OD channel a little too modern, or find that it gets too saturated and compressed too early, these mods might be for you.

All of the modifications I will present here assume the technician has a stock C30. In conjunction with these mods, it might be worthwhile to consider adding adjustable bias, changing to a higher grade of coupling caps, and etc. People who work on the C30 will learn to get the most amount of work done with each disassembly. Getting the amp apart is a chore and frequently causes "collateral damage" such as broken inter board jumpers. This is a shame because it discourages the best of kind of experimenting: where you change one component only and listen for a change. Those who want to experiment with, for example, several different values of cathode bypass cap, are advised to rig some kind of temporary switching or jumpering arrangement. Trying to A/B components otherwise quickly becomes an exercise in frustration and futility.

I would also advise the experimenter to keep good notes on what was done and his or her sonic impressions. Right now I can't remember whether I changed R1 to 100k ohm or left it the stock 150k ohm. I'm not looking forward to taking the amp apart to find out.

Before we begin let me clarify my goals in modifying my C30 and you can decide whether they match YOUR goals. I was attracted to the C30 because it was small, light, inexpensive and that faux tweed just looked so damn cool. My biggest problem with the C30 was the OD channel. I greatly prefer power tube distortion to pre amp saturation so I found the compressed Mesa Boogie like voicing of the original OD channel to be not to my liking. I prefer some thing I call "vintage raunch," a midrange heavy sound that is very responsive to picking dynamics. My goal was to not have so much pre amp distortion but to present the power tubes with a big fat signal that would cause them to be more easily driven into distortion at "reasonable" levels.

## First Things First

Anyone considering modifying their C30 would be well advised to first consider some of the easiest, but most expensive parts to change: the speaker and tubes.

I replaced my speaker with a Mojo Vintage 30 copy. This is an Eminence made speaker, as was the original. However not all Eminence speakers are created equal. The original had a harsh, high end stridency when played at higher volumes that wouldn't go away unless the treble was cut to the point the signal was unusable. The Mojo replacement breaks up much more gracefully.

There are a myriad of other speakers out there and your wallet is the only limit. The Weber High Power series offers some interesting choices, as do his line of premium speakers. Just about any Celestion has the potential to work well. I would advise staying away from any high efficiency speaker that tends to emphasize high end, as the EL84 tends to be a rather bright tube.

I have tried Sovtek, JJ and Mullard power tubes in my C30. The Sovteks tended to sound somewhat bland and offered up a rather flat sounding power tube distortion. The JJ's were a significant improvement. They gave a more harmonically rich sound when distorted. The Mullards were a lucky find from a high fi wreck at a local thrift store so they have an unknown number of hours on them. The Mullards and the JJ's actually sound somewhat similar, with the Mullards giving out more high end, which in this particular amp, is not always a good thing. The Mullards delivered a sweeter distortion.

I would encourage experimenters to try as many of the 12A7 type tubes as they can get their hands on in the pre amp sockets. Of particular interest is a 12AT7 in the V2 socket. This offers a noticeable decrease in gain. I found this to be just too grainy sounding in the C30's original form but once I did the mods detailed below, it proved to be just the ticket.

## And Now the Mods:

Here are the basic modifications. All experimenters are cautioned to know intimately the basics of electricity and electronics. The basics of electricity and electronics are the key to electrical safety. All experimenters are advised to familiarize themselves with the particulars of working on vacuum tube audio equipment, such as safely discharging filter capacitors, always working on de-energized equipment, and how

to keep your body from completing a path between two different electrical potentials. If you did not understand every part of the previous sentence, please put your tools away and do not even attempt these modifications.

1. **Replace C8 with a jumper.** The rationale behind the inclusion of component C8 in the circuit is not immediately clear. I suppose if one were to screw up big time and insert a signal into the front of the amp containing a large DC component, C8 would offer some protection. One could argue that the .1 uf value of the cap is large enough to make no real difference but in the spirit of "keep it simple," I have removed it.
2. **Remove C10.** The inclusion of this component makes even less sense to me. Why one would want to bleed highs before the first gain stage is a bit hard to understand. Out it goes.
3. **Replace R6 with a 68K resistor.** A very valid argument can be made that no one can hear the difference between a 47K resistor and a 68K resistor in this application. However damn near every classic Fender and Marshall uses a 68k resistor here so since we've got this thing taken apart, why not change it.
4. **Replace R10 with a 1M resistor.** The logic is similar to step 3. However, the difference between a 470K and a 1M in this application is perceptible.
5. **Replace C4 with a 680pf Silver Mica cap.** This is a fertile area for experimentation. I found the 680 to pass a better balance of highs and lows than the stock 470.
6. **Remove C7.** High saturation pre amps like the C30s stock configuration often require tonal shaping with shunt and series capacitance to keep from sounding horrid (or more horrid than they already do, depends on your preferences). However as we lower the gain in the C30s OD channel we will find that we have less need of these things and can let the tubes "speak for themselves." Plus in my minimalist world, "less stuff = better amp."
7. **Replace R9 with a 1M resistor.** See step 4
8. **Replace C13 with a 25uf/25vdc electrolytic.** Again this is an area for experimentation. Some people may want to go for a more "Marshall-esque" value where I have stuck with the standard Fender value.
9. **Replace R2 with a 100K resistor.** The logic is again similar to step 4.
10. **Replace C2 and R5 with jumpers.** We are now constructing our DC coupled pair. Where these components used to be will be how the signal gets from the plate of V2A to the grid of V2B.
11. **Remove C1 and R11.**
12. **Cut the trace to pin 2 of relay K1. This is very important. If you omit this step or do it wrong, you will short the B+ on V2A directly to ground. This is a very bad thing.**
13. **Replace R3 with a Jumper.** We are now constructing the cathode follower part of our DC coupled pair.
14. **Replace R17 with a 100K resistor.** This resistor will be the load for our cathode follower.
15. **Remove C15.**
16. **Remove R7 and C5.** Remember this is now a cathode follower circuit.
17. **Replace C16** with a 47pf silver mica cap.
18. **Run a jumper wire** from the R17/C15 junction to the C5/R13 Junction. Shielded cable is recommended. This is easier to show than explain. Since this is a PCB board amp we are jumpering over part of the circuit with wire for our new signal path.
19. **Put .01uf cap** in series with the jumper in step 19 and VR3. One of the inter board jumpers can be removed and replaced with the cap. In fact, this is the easiest way to do it. Just make sure you are replacing the right one!
20. **Replace VR3** with a 500Ka pot. This is one of the indications of how much gain has been removed! Lately I have been thinking the 500ka pot is too much, the amp gets loud very quickly. I am thinking of experimenting with a 250Ka pot but have just too busy to try it out. Try both. See which you like.
21. **Replace R59 and R60** with 5k/1watt resistors. This will raise the pre amp plate voltages.