Random Notes

Preamp

Coupling Caps – block DC voltage, yet allow the AC signal to pass.
Lower values will limit bass and reduce gain, increasing values increase bass response.

Cathode (Bypass) Caps

Increasing the value of Cathode caps increases bass response.

In old amps then, if cap values have drifted up over the years the amp will have MORE bass.

Power Tube Connections (6L6, 6V6, etc.)

The **plate** is connected to the amps B+ (coming from the Output transformer)
The signal comes into the **Control Grid.**
On most Fender Amps a 1.5k resistor is connected there, referred to as a Grid Stopper. They are there to help stop oscillation.
Cathodes are usually grounded (they may have a cathode bias resistor from it to ground)
Screen Grid (on Fenders there are usually 470 ohm 1 watt resistors affixed here. They help regulate current and dissipate heat).

Testing a Reverb Pan

Measure the input and output resistance of the tank to see if it is bad. Remove the plugs from the chassis jacks (be sure you know which one goes to which jack). Using any portable DVM or DMM, connect its negative lead to the outer connection or "shield" of the gray co-ax cable. Connect the positive lead to its center pin. The reading should be approximately 200ohms or so, indicating a good reverb return transducer. Now, leaving the negative lead connected to the shield on the gray co-ax, connect the positive lead to the center pin on the single white wire plug. This should read approximately 30ohms. If both of these readings are correct, then the reverb tank should be good. If either transducer read open (no reading) then the tank needs to be replaced.

GENERAL – you'll have to decide for yourself

Some say MATCHED POWER TUBES are necessary. Others say they aren't. Certainly none of the vintage amp makers matched power tubes during the manufacture of the great amps of the past. Perhaps the widely available American made tubes from the 50's and 60's were much better than what is available now, but …….. The whole matched tube thing came from audiophiles and their stereo amps. Matched tubes offer lower distortion… which is what they were going for.

Some say matched caps between the Phase Inverter and the power tubes are also unnecessary as they mostly control the frequency cut-off.

Some say that BLUEPRINTING your circuit to EXACT values as shown on the schematic makes a huge difference and that the wide tolerances used (up to 20%) are why some amps sound great and others don't. Others say the value "drift" of resistors and capacitors that occurs over time is what can make them sound great or terrible.

Nearly everyone says that when replacing filter capacitors, they should be "formed" slowly, using a variac, bringing the voltage up slowly, over a 24-hour period. Now you know that Fender, Marshall, et al, didn't do this in their manufacturing process. It was mass production – they didn't have time!

Everyone also says that capacitors have a useful life of approximately 10 years. In our shop MOST amps come in with original filter caps. Meaning most amps we see have caps that didn't fail for 40 years!

Lots of controversies out there like the above. Pick your guru or decide for yourself. Remember when we pointed out the backward caps on the circuit board in the 1st DVD? These are the caps where the outer foil lead should be connected to the most grounded side of the circuit. Sure the Fender techs installed them backward and technically they should be turned around. We usually leave them alone! Why?
We don't normally HEAR a big difference….. maybe it's our ears??