

Final Project
Ben Hay

Many ideas and details have changed on my project this semester, but finally I have finished. I now have a very unique guitar amplifier to my specifications that I have named "The OX" (for different reasons). The basic concept of this project was to construct a guitar amplifier that would have a uniquely clean sound with the warmth and tone of a Fender Twin. I took a Fender Bassman chassis (see layout in back), and put together the basic layout, only instead of using a 022798 (2 ohm) output transformer, I put in a Hammond 1650R 100 watt transformer (and let me tell you, this transformer is big! I had to make extra support brackets in my cabinet just so the chassis would hold.) I used this big of a transformer to create the cleaner sound that I am looking for. With this Hammond transformer I will have an 8 ohm load on two twelve inch speakers, unlike the original Fender Bassman which has a 2 ohm load on four ten inch speakers. As for the power transformer, I used a bottom-mount so that I could fit the five 20/500 filter capacitors in the chassis on top of the power transformer instead of outside under the chassis. Other minor modifications include bypassing the ground switch and using

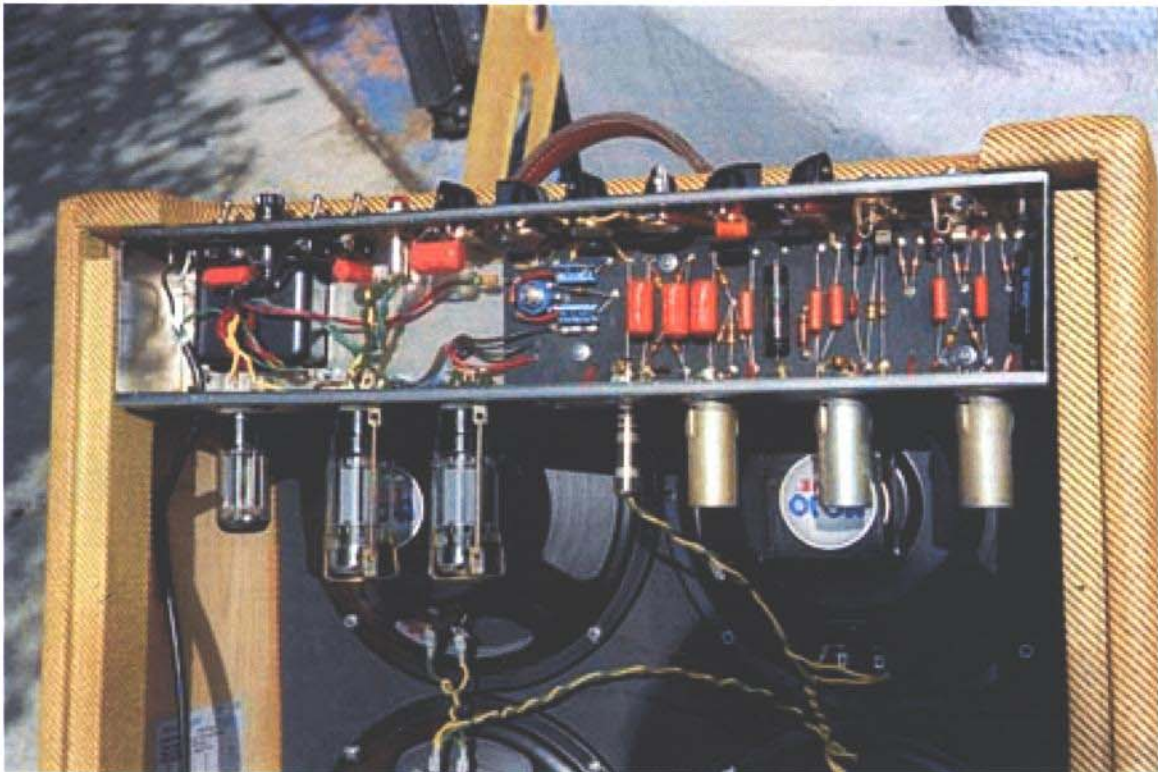
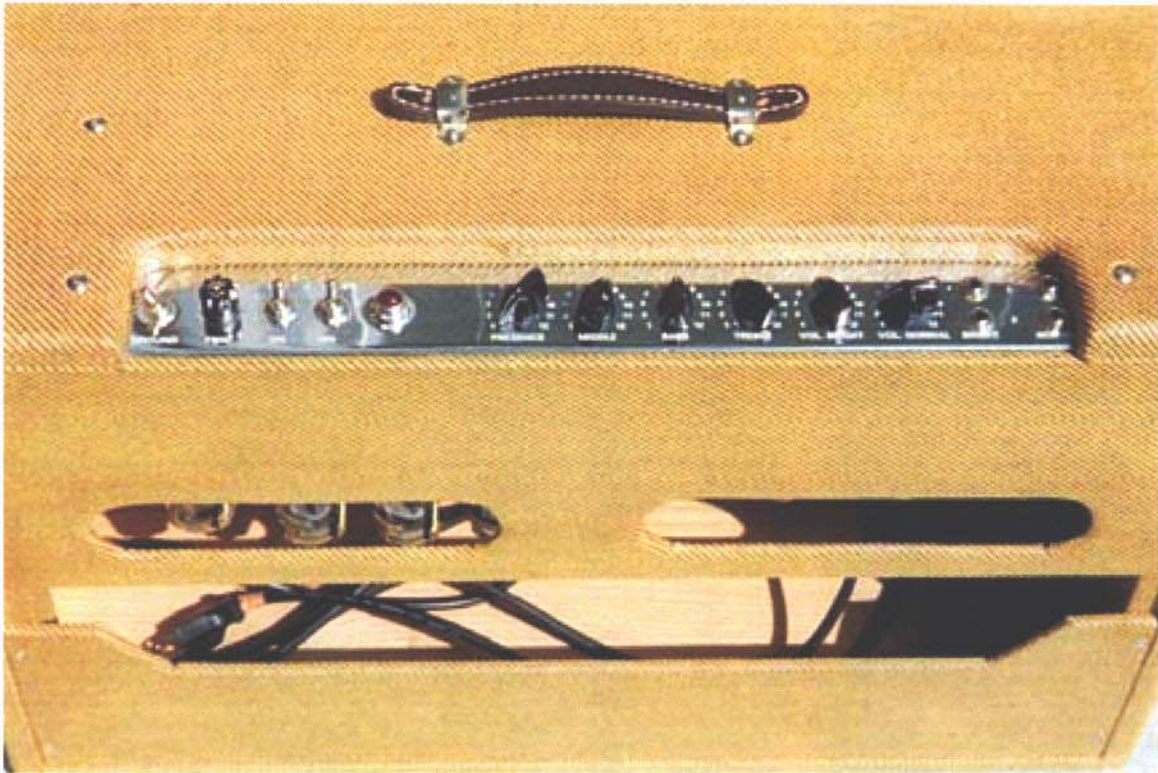
a pot to control the negative bias. I set the bias at 20 milliamps DC current.

In the beginning, the plan was to build the head separate from the cabinet, but that got changed when looking at some of the old tweed style bassmans. With the two twelve inch speakers instead of the four ten inch speakers, the cabinet combo would obviously be different. (See picture of four ten example in back) So, I made the cabinet to the specifications of a Fender Twin Reverb (20" high, 26" long, 10" deep), and modified it to fit the tweed style chassis along with the two twelve inch speakers. This style seemed to work out just fine, but of course the whole "tweed" thing wasn't my style. I decided to get some pine wood from the lumber yard. This was nothing fancy, just a $\frac{3}{4}$ " by 10" board. I used the specs of a Fender Twin Reverb (with the chassis modification) and then I cut, clamped and glued the boards. Before staining it a fruitwood color, I sanded it down. After staining it I put about four coats of satin, polyurethane finish. This brings out the wood look and protects the cabinet a little more. Another reason I want the plain wood finish is because I think it will have a fuller, different tone. I also stretched the grill cloth over the baffle-board. I used a tobacco / brown color. This combination makes my

amp look similar to a Richtone Twin (see picture in back), only mine, of course, doesn't have the tweed finish, and has the staggered speaker baffle-board like the Fender Twin Reverb.

Overall, I learned so much doing this project. It took many hours, and hard work, but my goal was met, and I figured out how a guitar amp really works. I would like to thank Ben Juday and Steve Errede for all the help, this amplifier would not be here without them. I'm sure I will still have some small details to work on, but I hope to have this amp forever.

Bassman 4-10



Richtone Twin

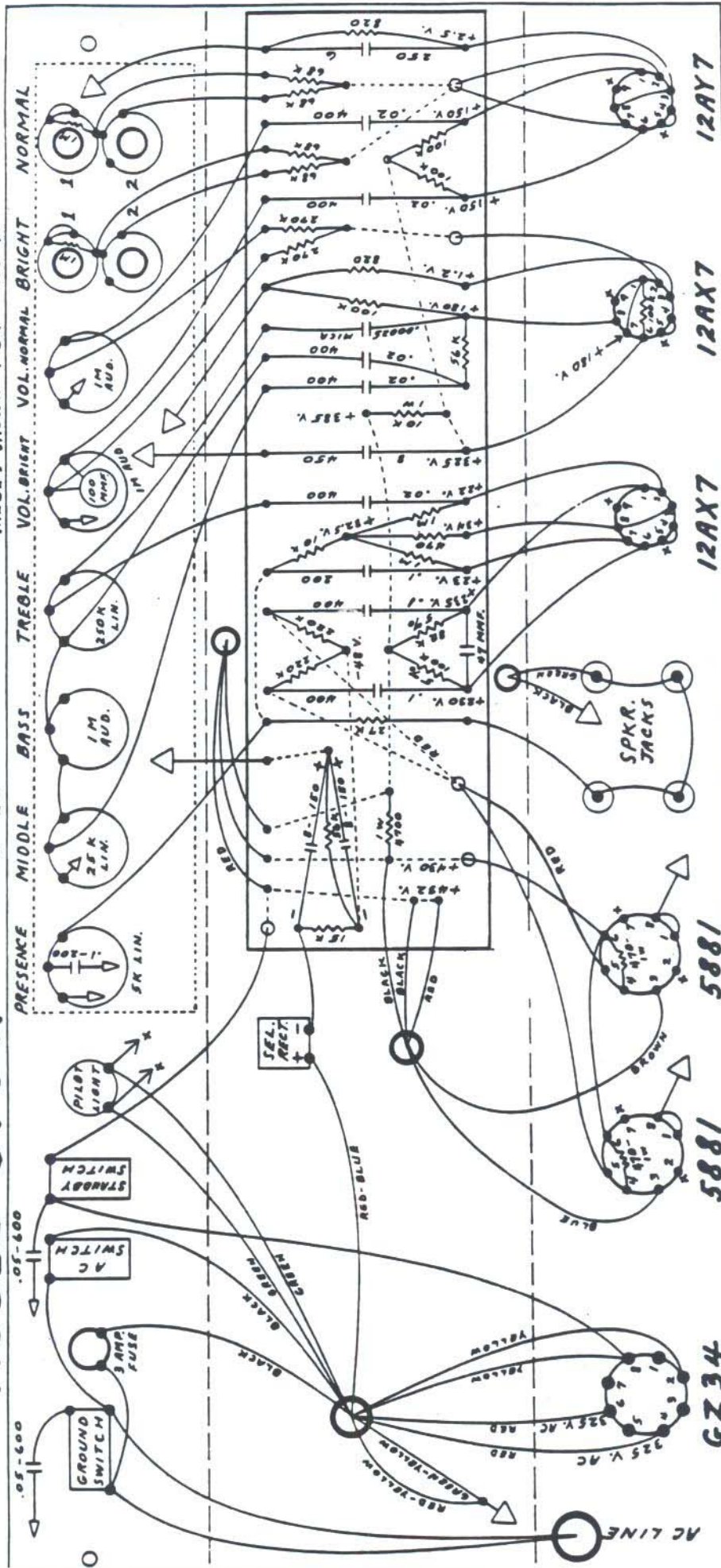


FENDER "BASSMAN" LAYOUT MODEL 5F6-A

NOTICE

VOLTAGES READ TO GROUND
WITH ELECTRONIC VOLTMETER
VALUES SHOWN + OR - 20%

I - EG



NOTE - ALL RESISTORS ARE ONE-HALF WATT 10% TOLERANCE UNLESS OTHERWISE NOTED

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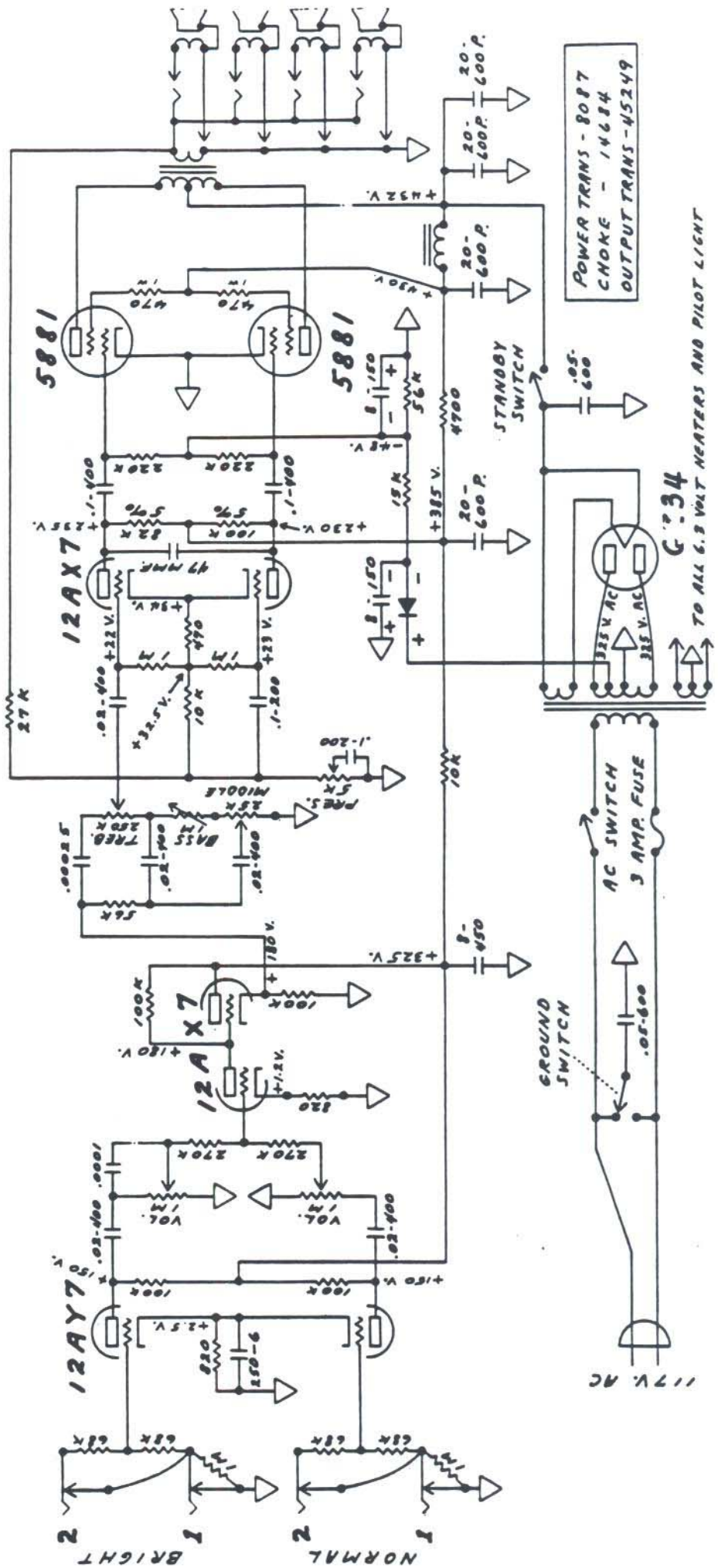
FENDER "BASSMAN" SCHEMATIC

MODEL 5F6-A

I-EG

NOTICE

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POWER TRANS - 80B7
CHOKE - 146B4
OUTPUT TRANS - 45249
C-34
TO ALL 6.3 VOLT HEATERS AND PILOT LIGHT

GROUND SWITCH

STANDBY SWITCH

BRIGHT 2 1 NORMAL 2 1

