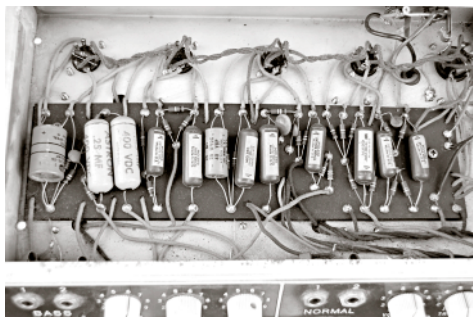


'Blueprinting'



Some people like to 'blueprint' old amps by referencing the schematic and replacing any caps or resistors that are out of spec by more than maybe 5%. Fender amps were originally built with parts that had an allowable tolerance of 10%-15%, which is why some of them sounded better than others even when they were new. Over 40-50 years some of these components can drift, and this is how we wind up with old Fenders that sound like magic, and others that just sound dogged-out. Amps can age in both good and bad ways. You might have an old amp that sounds pretty good, and if you blueprint it with all new components, a lot of the character of the amp can disappear. Everybody has heard stories about the guy who has all the old Astron caps yanked out of his tweed Deluxe, takes it home, plugs in and cries... Sometimes you have to change parts that are shot to enable the amp to work and remain stable... other times it's a judgment call. The most important point of having work done on any amp is to optimize it for *your* specific needs. I try to leave as many of the old coupling caps on the board as possible, because they play a big part in shaping the tone of the amp. Power supply caps are less important, although some people would argue that, and there are good replacement transformers available today when you need them. I usually install a Mercury Magnetics Tone Clone in a classic amp unless the customer specifically wants something else.

Lagniappe



The Chicken Wire mod is a classic for amps owned and provided by club owners as a courtesy to bands. I just did a Chicken Wire mod on a couple of silverface Fenders for Matt at Fat Matt's Rib Shack in Atlanta. Basically, you construct a chicken wire cage around the bottom of the chassis to prevent the tubes from being pulled without first having to remove the back panel. This does a great job of preventing the blues bands that play at Fat Matt's from jacking the tubes out of his amps at the end of the night. I'm not kidding.

Some people like to 'blueprint' old amps by referencing the schematic and replacing any caps or

resistors that are out of spec by more than maybe 5%. Fender amps were originally built with parts that had an allowable tolerance of 10%-15%, which is why some of them sounded better than others even when they were new. Over 40-50 years some of these components can drift, and this is how we wind up with old Fenders that sound like magic, and others that just sound dogged-out. Amps can age in both good and bad ways. You might have an old amp that sounds pretty good, and if you blueprint it with all new components, a lot of the character of the amp can disappear. Everybody has heard stories about the guy who has all the old Astron caps yanked out of his tweed Deluxe, takes it home, plugs in and cries... Sometimes you have to change parts that are shot to enable the amp to work and remain stable... other times it's a judgment call. The most important point of having work done on any amp is to optimize it for *your* specific needs. I try to leave as many of the old coupling caps on the board as possible, because they play a big part in shaping the tone of the amp. Power supply caps are less important, although some people would argue that, and there are good replacement transformers available today when you need them. I usually install a Mercury Magnetics Tone Clone in a classic amp unless the customer specifically wants something else.

Words of Caution

You've heard this before... all guitar amplifiers operate on lethal voltages, which are also stored in the power supply caps, meaning you can be shocked even when the amp is unplugged. Aside from simple speaker and tube swaps, any work performed on the internal circuit of an amp should be left to a professional. And if your amp tech isn't familiar with any of the specific mods we've described here, we suggest you find one that is... One TQ reader had a midrange pot added by a 'tech' who got it all wrong, and he wound up having to send his amp to Jeff. *Mod forth (with caution...)* **TO**

Bakos Ampworks Atlanta, 404-607-8426

When Less is More - The Amp Preserver



Perhaps you've heard how Eddie Van Halen used a variac to coax his vintage Marshall into those gloriously cocky 'brown' tones from his early recordings by knocking the

voltage down to 90 VAC on his Marshall with a variac... As is so often the case in the music world, rumors of the Van Halen variac circulated like the clap among guitarists, some of whom got the story wrong, thinking that by really *cranking* a variac beyond 110 volts (more is better, right?) they would be delivered to electric Shangri-La post haste. As amps blew up, interest in variacs waned.



Other musicians who were at least grounded in a casual, street-wise understanding of physics had discovered that their amps indeed sounded better at slightly lower voltages than the typical 120VAC USA wall current, as Junior Watson sagely noted in our December 2006 'West Coast Blues' cover story. Tonal considerations aside, working the aging components in a vintage amp at 120 volts when it was originally designed to run at 115 isn't optimal either, and this fact was not lost on a tube hi-fi enthusiast in Illinois by the name of Carl Hartman. A guitarist friend of Carl's who owns vintage-

-continued-



amps had seen a voltage reduction circuit somewhere online, inspiring Carl to do some research of his own, since he had noticed that the transformers on his vintage Dynaco tube hi-fi amp would become hot enough to 'fry an egg' at today's higher wall currents. Carl: "I found a design for reducing the line voltage in an ARRL manual – an Amateur

Radio Relay League ham radio manual from around 1944-45. It is a fairly straightforward method of dropping the line voltage using a transformer. If you wire the transformer in phase with the current it will boost it by whatever the output of the transformer is, and if you wire it out of phase it will reduce it by the same amount. So I built this thing and tried it on the Dynaco and you could now put your hand on the transformer – it was running cooler, as designed. I talked with my guitar playing friends and while you can use a variac, they weigh a good twenty pounds, they aren't really portable, and there is no volt meter, so you can't see the actual voltage you're drawing. My design for the Amp Preserver is a labor of love... I hand-machine the box, I have an assortment of chassis punches and it's all hand-drilled and hand-punched, hand soldered and built like a rock."

We agree. Carl's little gray box is indeed built to last in '50s mil-spec style, but that's not why you'll want it. Sure, given a choice, none of us would choose to cook the original components in our vintage amps with five more volts than the 115 these amps were designed for (or the proper 105 VAC for British amps). Here in Atlanta, our line current is pegged at exactly 120, and we've heard that the line voltage in New York can exceed 125! Your vintage American amps were intended to 'see' 115, British amps 105, and the single chicken head knob on the Amp Preserver has three settings – 'Line,' which is your actual line current, -6, which will take our line current in Atlanta down to precisely 115, or -12, at 109.



Fender amps sound clearer and cleaner. No, not as in 'lost' distortion clean... the amps just sound *clearer* at all volume levels, and you'll notice that a certain amount of trashy stuff

Comfortable in the knowledge that you are now no longer over-cooking yer precious babies, you'll also experience a tonal benefit of impressive proportions... At 115 VAC our vintage

lurking in the high frequencies when you overdrive the amp completely disappears at 115. You may not have noticed this trashy stuff... but you will when comparing the 'Line' and -6 settings as the clarity emerges. The net effect is not unlike the difference between a lot of current production 'PAF' humbuckers and vintage PAFs in terms of clarity and note separation. *It's just a superior sound.*



Now, Carl Hartman's home workshop is no factory, so you may have to wait a bit to receive your Amp Preserver, but at \$159, it is definitely an essential, must-have tool. We have ours rigged

with a surge protector/power strip that allows all of our amps to be connected to Carl's box, which features a heavy duty on/off toggle switch on the back. Preserve and enjoy...[To](#)

www.vintagesoundworkbench.com
amp_preserver@hotmail.com

A Momentary Suspension of Disbelief



Since you are clearly a reader, if not an avid one (in which case we salute you for reading this, at least), perhaps you've come across the phrase 'a momentary suspension of disbelief' in the past. Further thought reveals many pertinent and useful applications for such a wonderful notion that would allow us to indulge in trust, faith, romance and

fantasy with childlike innocence untainted by the world-weary adult habit of never quite believing so much, too much, as if doing so will protect and preserve what little is left of the innocence we have already lost. No, 'healthy' cynicism is hardly that... The cynic uses his jaded view of the world to slam doors shut with a crashing bang, and all hopeful voices with them. The cynic has an explanation for everything except his inability to embrace the new and unfamiliar with a sense of wonderment, or even feigned curiosity. He remains ever vigilant with a singular purpose – to pounce on

-continued-