

# Questions

**I know that high plate voltage on the output tubes gives an amplifier better headroom, but how does it affect tone?**

—Homer Tong, Century City, CA

We asked THD's Andy Marshall, Fender's Bruce Zinky, Ken Fischer of Trainwreck Circuits, and Harry Kolbe of Kolbe Sound for their thoughts on this subject.

**Ken Fischer:** Voltage has everything to do with tone, but it's different for different tubes. I build a Class A, EL84-powered amp called the Rocket that has a power transformer with two taps so I can supply the tubes with either 315 volts or 370 volts. If I use the higher setting, I get more volume, more headroom, and a tighter bottom, but the amp is less dynamic and gives weaker harmonics. If I lower the voltage, I get better dynamics but a looser bottom. There are certain tubes that respond well to low voltage and other tubes that sound better at high voltage. GE 6550s have much more punch and better tone at higher voltages.

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—KEN FISCHER

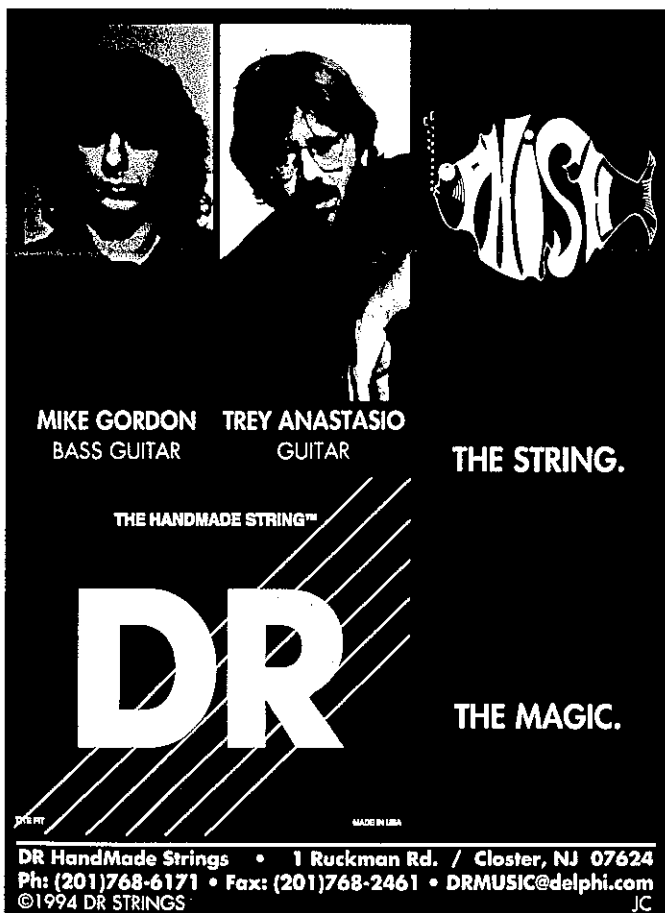
EL34s are very brand-dependent on what voltage they like. The old Mullard EL34s sounded good at high or low voltages—the tone was just different.

A Marshall 50-watt plexi and a 100-watt metal-panel use exactly the same basic circuitry, but the 100-watter sounds bigger and

tighter and has more bottom end because of its higher voltage and different output transformer. There's a sweetness that comes with lower voltages and a more dynamic, aggressive sound that comes with high voltage. It's kind of a trade-off depending on what you like.

**Harry Kolbe:** I probably use a higher plate voltage in my preamps than anyone on the market. When I modify a Marshall, I increase the voltage on the front end by about 50 percent. That's what Eddie Van Halen was trying to do with the Variac. That in-your-face, aggressive sound was really being developed in the preamp, however, and by the time it got to the output stage it had pretty much already happened. One of the problems with the Variac is that it also increases voltage in the output stage. This will enhance your power and headroom, but it puts your output transformer at risk. The output stage does put some characteristic of its own on the total signal, but not so much in terms of transients. And I don't buy

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