
Subject: Re: Sometimes I surprise myself

Posted by [Thermionic](#) on Fri, 01 Aug 2008 18:00:04 GMT

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The 5U4 did drop the B+ rail voltage probably 30 or 40 volts versus the 5AR4, but that wasn't the only reason everything lost focus and loosened up. You also raised the impedance of the supply with the 5U4. And, it's always seemed to me that the 5AR4 just naturally seems to have a sharper, firmer sound than the 5U4. It's definitely a much "faster" rectifier, no doubt about that. I know there are those out there who disagree that different rectifier types sound different. I myself have a friend who is a trained, highly gifted engineer, but being such his major focus is specs on paper. He calls rectifier tube rolling "a disease," because they all sound the same. He tells me that I *think* I hear a difference between them, but it's just a placebo effect; my mind playing tricks on me. Well, sorry, it just ain't so.... While on this topic, I thought I'd mention an experiment I once did when tweaking the design of a certain EL84 SE amplifier. I used identical amplifiers with identical power supplies, except for different power transformers. Each trafo's secondary voltage was chosen so as to yield the same net B+ rail voltage with its corresponding rectifier tube type (5AR4 and 5U4). Both power transformers even had the same nominal current ratings, and fairly similar secondary DCR. That way, I would be comparing apples to apples with no other variables involved. The verdict? The 5AR4 version amplifier beat the pants off the 5U4 version, with tighter focus, cleaner overall sound, and far better bass performance. But, interestingly enough, substituting a 5R4-WGA "tater masher" in the 5U4 version amp made everything MUCH better. The 5R4 lowered the B+ rail an insignificant 10 volts versus the 5U4, but there was a huge improvement in every area of performance. While not precisely the 100% equal of the 5AR4 version in the areas of coherency/focus and bass performance, it was nevertheless very close, and as a plus it had a somewhat sweeter midrange tone. One of the things I've noticed from 25 years of experience with tube amps is that 5U4s just seem to sound better in circuits with some seriously big current draw. When lightly loaded, they always seem to sound fuzzy and unfocused. I prefer the 5AR4 and 6CA4 for small, low powered amp designs. Just my observations and my 2¢ worth. Keep the change. Thermionic