REGULATING VINTAGE POWER SUPPLIES

A word of caution on regulating the 260vdc supply down to 200vdc in the SR-400A. The 260v supply is not just the screen supply for the PA it also the plate voltage source for all tubes in the unit. It is also the source for the 230v supply and the source for the 150v reg.

The 230v supply which is an unregulated supply via R102 will be reduced to approximately 170 volts. This supply feeds V5B, V9A, V14A&B AND V19A&B. Low voltage on V19A causes warble in the audio.

The 150 volt line normally sinks about 55mills. With the B+ at 200vdc it only has 25 mills to work with. 11 mills are required by the VFO V13, 3 mills each for screens of V6 and V7A, another 2 mills for the balanced modulator bias. That leaves only 6 mills for V10 to work with and I may have missed a bias line or two.

Most of the PS-500's 260v supplies run from 285 to 315vdc. That means the 1K 10w dropping resistor used to feed the added regulator tubes will be short lived. Also, the transformer which is running close to max at the higher line voltages of today will need to pass more heat.

To sum it up, *Yes*, technology has changed since the late 50's and 60's. But the design engineers of that day were every bit as cleaver as the engineers of today. Yes, in today's semiconductor technology regulated supplies are common place. In the tube era regulation of voltages over 300 volts was not practical or cost effective. As load current goes up the high voltage drops, it was a fact of life. But this loading effect was uniform. It caused the screen voltages and the bias voltages to drop also. As the high voltage loaded down so did the screen voltages and the bias voltages. Circuits were designed around this condition. You will most likely do more harm than good by "re-engineering" the voltage supply schemes of the vintage power supplies.