IMPROVED PREAMP

I have improved the Bruce Rozenblit preamp ("A Line Level Preamp," *GA* 2/91, p. 1) by using an asymmetrical mu-follower. The ECF82 (or its equivalents 6U8A, 6AXS, 6KD8, 6678, and CV5065) is the best tube for this amplifier.

The triode section is used for the bottom tube in the circuit; the pentode section is used as a triode for the top tube. The output impedance is 800Ω and the gain is 16. I don't use high-impedance output, because, for these loads, distortion is the same for both outputs. It is always preferable to use the low-impedance output, as it is less sensitive to hum.

The new circuit's distortion is 0.015% at 1V RMS 1kHz (the Rozenblit circuit distortion is 0.06%). At 10V RMS the distortion figures are ten times higher (0.15% and 0.6%).

The filament voltage of the 12AU7 is 12.6V, and 6.3V for the ECF82. If a 12.6V transformer is used, the filaments of the two tubes in the amplifier must be connected in series. The current is 0.4A for the 6KD8 tube, and 0.45A for the ECF82, 6U8A, and 6AX8s. The filament is connected to Pins 4 and 5.

Finally, change resistor R4 in the power supply to 3.3Ω 2W.

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TABLE 1
LINE LEVEL PREAMP PARTS LIST

QTY.	REFERENCE	PART
1	C8	0.22
1	C10	2,200µF
1	R7	1k2
1	R8	10k
1	R9	2k2
1	R10	100k
1	R11	470k
1	R12	33k
2	V1B, V1A	1/2 ECF82

TUBE LIFE SAVER

I have developed an inexpensive and effective way to extend tube life (*Fig. 1*). It can be used, with variations, in several tube amps in association with AC filament supplies and solid-state rectifiers.

To switch on automatically:

1. Turn the AC line on. When LED 1 begins to flash and the time starts running, the AC filament will be at nearly half voltage.
2. After approximately 10 seconds, RE1 will supply full filament voltage to the tubes.
3. After approximately 40 seconds, RE2 will switch on B+, and the LED 1 light will change from flashing to constant.
4. Now the amp is ready to work.

Some tips: the transformer current is dependent upon RE1 and 2 current; the diode type is dependent upon tube current. Use either 20A Schottky diodes or, for lower current, 1N5403.

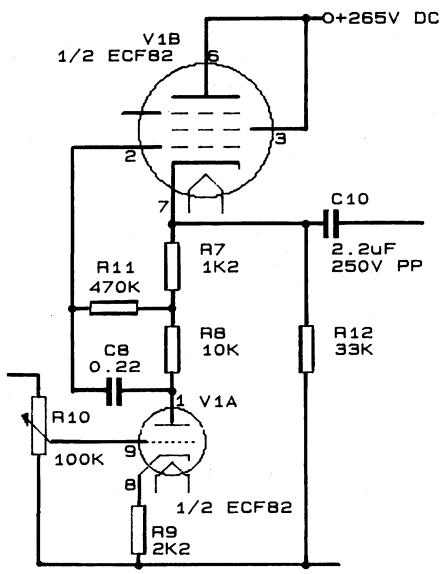

FIGURE 1. Improved preamp circuit.

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LINE VOLTAGE REGULATOR

I recently needed to improve the line regulation of a high-voltage regulator. I found that