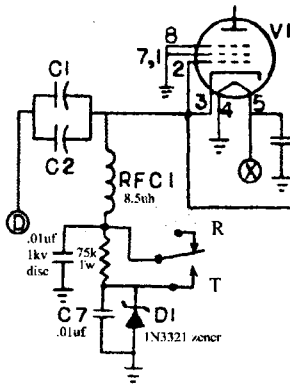


zener. The equivalent 24 volt string of 1N4007 diodes becomes quite cumbersome compared to the single package.

The K1 relay should have a diode paralleled across the coil to eliminate the spike produced when the coil magnetic field collapses (back emf). The banded cathode end is soldered to the positive power supply side coil contact, the remaining diode anode (un-banded) end is soldered to the relay coil contact which leads to the rear panel ground to transmit jack.

Cutoff the tube current in standby:

During standby, the amplifier tubes continue to conduct full transmit value no-signal plate current, a major weakness in the GLA-1000B amplifier and other similar designs. It's a very simple and straight forward modification to reduce the tube cathode current during standby conditions. A 75K, 1 watt resistor installed in series between (cathode choke) RFC1 and zener D1 develops a cutoff voltage to reduce the standby cathode current. During transmit, the unused center set of contacts on relay K1A are brought into service to short across (eliminate) the added resistor [6]. Disc capacitors should be used to RF bypass the new resistor-choke-wire lead junction and both relay K1 (resistor shorting) wire leads routed to the relay. The addition of this simple current cutoff modification will greatly extend the usable life the tubes. This article includes a graphic to display the Authors recommended circuit.



*1st draft*

Things to check:

A quality AC voltmeter is used to check the tube heater voltage at the base pins. Keeping the heater voltage less than +3% of maximum would be desired. Excessive voltage is reduced by the addition of resistance [8] to the heater circuit.

Additional thoughts:

Parasitic oscillations have plagued amplifier operation for many decades. Excellent informative articles have been written and published, describing methods to prevent amplifier parasitic oscillation [9]. There appears to be little tendency for the GLA-1000B to suffer the parasitic issues of other "large bottle" grounded grid amplifiers [10]. The gain of a typical sweep tube drops off fairly quick near the upper HF range. The author knows of only one >100MHz sweep tube amplifier [11]. There is additional shielding provided by the grounded suppressor when using beam pentodes in grounded grid and super cathode driven designs. Sweep tubes often have considerable anode capacitance relative to ceramic tetrode and pentode tube designs. After all, they were originally designed for applications at a much lower frequency.