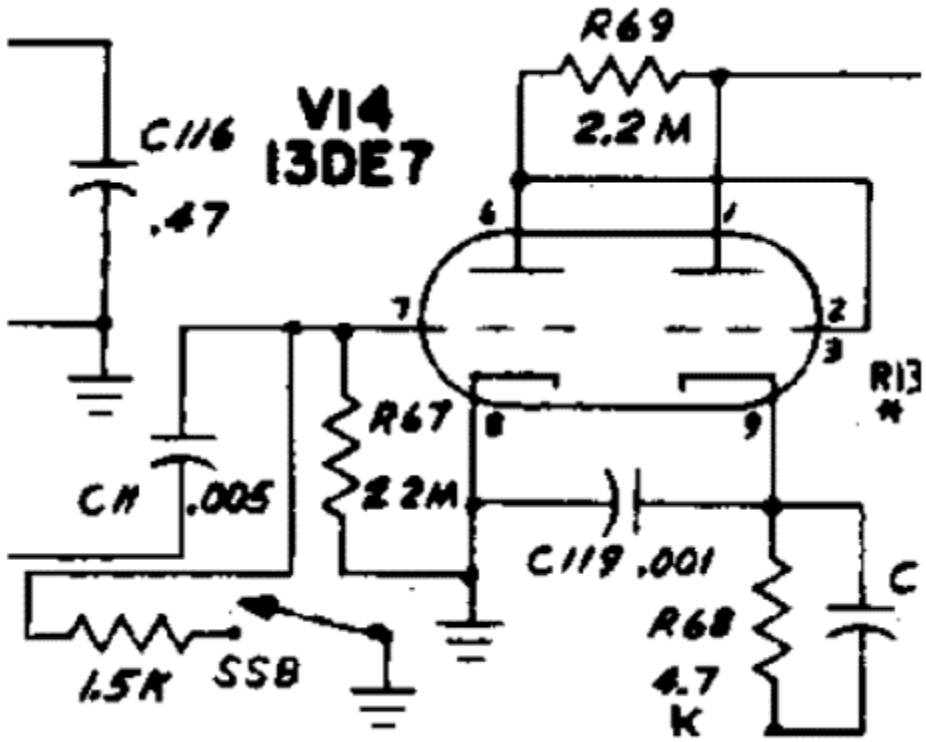
**DRAKE TR-4 transceivers employ controlled carrier AM modulation. Unfortunately a single triode (1/2 12AX7) is used with cathode output for the SSB ring modulator and anode output for the AM controlled carrier modulator. Because the cathode of left triode of V14 is connected to ground it loads the 12AX7 like a diode-RC circuit. The end result is a strongly non-linear load on the anode of the 12AX7 with consequent non-linear components in the anode current, which is also the cathode current, which is also proportional to the SSB drive voltage. The distortion is very strong during modulation transients.**

**This behavior can be easily corrected with a resistor (1.5 k in the picture) and a switch, which must be closed in SSB mode. The switch can be a relay driven by the same circuit used for my AM filter modification. T4 transmitters are similar, but they employ attenuators in this part of the circuit, and this phenomenon is almost negligible.**




**SSB Modulation Improvement for Drake TR4 line of transceivers.**

**SPICE simulations and experiments have shown a remarkable improvement. Just try and let me know….**

**Best Regards. IN3IEX Giorgio…**