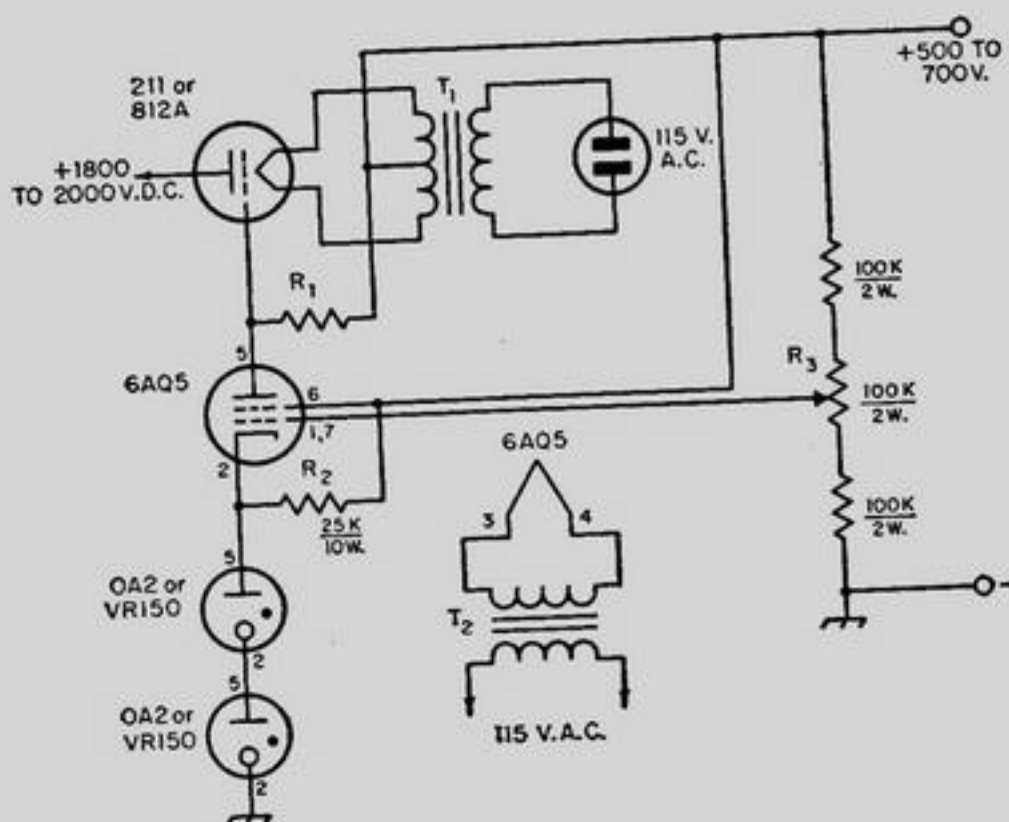


Fig. 12-25—Screen regulator circuit designed by W9OKA. Resistances are in ohms ($K = 1000$).

- R_1 —6000 ohms for 211; 2300 ohms for 812A, 20 watts.
 R_2 —25,000 ohms, 10 watts.
 R_3 —Output voltage control, 0.1-megohm, 2-watt potentiometer.
 T_1 —Filament transformer: 10 volts, 3.25 amp. for 211; 6.3 volts, 4 amp. for 812A.
 T_2 —Filament transformer: 6.3 volts, 1 amp.



obtained with a regulation better than 1 per cent over a current range of 0 to 100 ma.

In the circuit of Fig. 12-26, a V-70D (or 8005) is used as the regulator, and the control tube is an 807 which can take the full output voltage, making it unnecessary to raise it above ground with VR tubes. If taps are switched on R_1 , the output voltage can be varied over a wide range. Increasing the screen voltage decreases the output voltage. For each position of the tap on R_1 , decreasing the value of R_3 will lower the minimum output voltage as R_2 is varied, and decreasing

the value of R_4 will raise the maximum output voltage. However, if these values are made too small, the 807 will lose control.

At 850 volts output, the variation over a current change of 20 to 80 ma. should be negligible. At 1500 volts output with the same current change, the variation in output voltage should be less than three per cent. Up to 88 volts of grid bias for a Class A or Class AB₁ amplifier may be taken from the potentiometer across the reference-voltage source. This bias cannot, of course, be used for biasing a stage that is drawing grid current.

A somewhat different type of regulator is the shunt regulator shown in Fig. 12-27. The VR tubes and R_2 in series are across the output. Since the voltage drop across the VR tubes is constant, any change in output voltage appears across R_2 . This causes a change in grid bias on the 811-A grid, causing it to draw more or less current in inverse proportion to the current being drawn by

Fig. 12-26—This regulator circuit used by W1SUN operates from the plate supply and requires no VR string. A small supply provides screen voltage and reference bias for the control tube.

Unless otherwise marked, resistances are in ohms. ($K = 1000$). Capacitors are electrolytic.

- R_1 —50,000-ohm, 50-watt adjustable resistor.
 R_2 —0.1-megohm 2-watt potentiometer.
 R_3 —4.7 megohms, 2 watts.
 R_4 —0.1 megohm, $\frac{1}{2}$ watt.
 T_1 —Power transformer: 470 volts center tapped, 40 ma.; 5 volts, 2 amps.; 6.3 volts, 2 amps.
 T_2 —Filament transformer: 7.5 volts, 3.25 amp. (for V-70D).

