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R 1082 General Purpose Aircraft Receiver.

Frequency coverage 171 Kcs - 15,000 Kcs.

14 pairs of coils [A - P]

6 Valves 1st Value Diode VU 33 Limited Value .4 A

Anode connected to grid
[in back of cabinet.]

2nd Value Screen - grid [knob at top.] VR 18 .15A

RF Amplifier & Volume control by a potentiometer on the Screen-grid. & Selectivity

3rd Value Detector Triode VR 27 .1A

"Leaky grid", with reaction, ~ Potentiometer.

4th & 5th Values 2 AF Amplifiers, VR 21 .1A

Triodes.

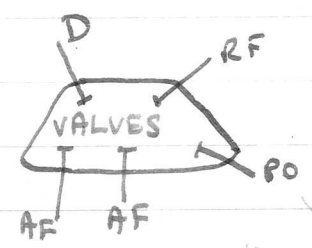
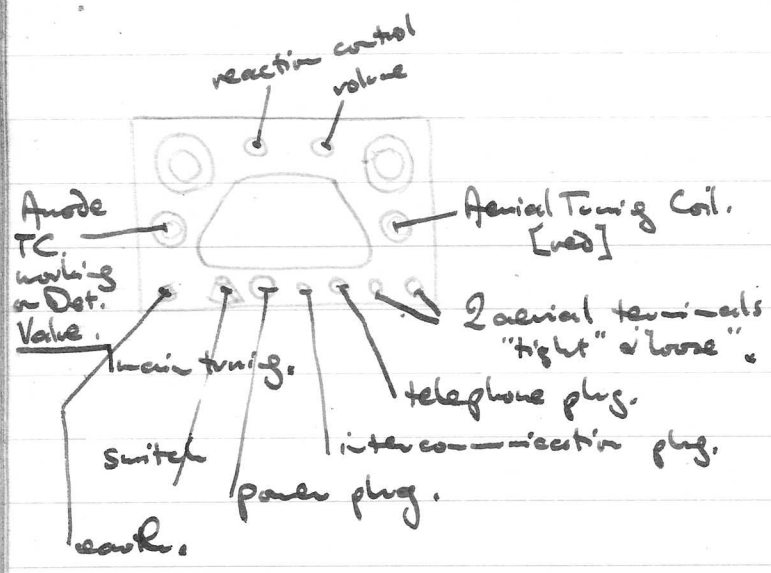
6th Value Triode VR 22 [clear] power output. ?

HT 120v current consumption 10-15 A.

Variable condenser, 0° - full out.

LT 2v 20 1.05 A.

∴ min. frequency



automatic bias HT -ve

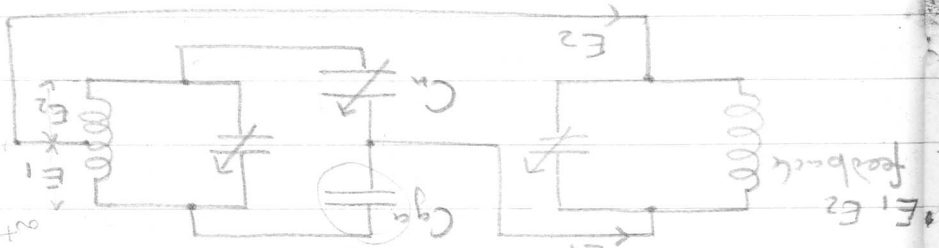
NEUTRALISING

Neutralising P.A.

Output a input circuits are coupled by valve capacity C_{ga} & any value \therefore with the size of this capacity is sufficient will generate oscillations instead of amplifying. \therefore stabilizing the power applied to it.

"Self-osc."

N. to balance the feedback this' value C. by an equal amount - the opposite phase this' output capacity, which can be varied with the 2 effects cancel, leaving a tendency for self-osc to occur.



Output a input of output circuit tends by C_{ga} of P.A. value. The applied voltage across the output

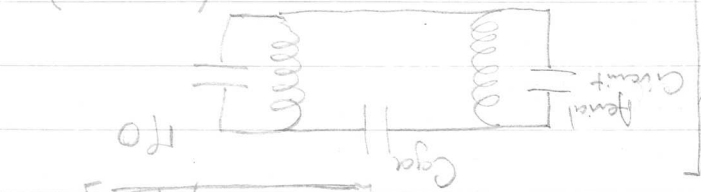
drives a current round the circuit (over-coupling) the effect of the screen grid voltage (setting up a P.D. across the input) \sim this induces an amplification of essentially self-osc. waves. \therefore Neutralize \sim to stop frequency drift

Reasons for Neutralising:

- ① f. Stability
- ② To prevent self-oscillating



Output amplifier voltages from P.A. & if neutralized prevents back coupling for the neutral to the P.A. thus causing f. stability. \therefore increase, f. \downarrow



double by $C_{ga} \times$ (in effect) overall sum of cap. condenser affects $f. \sim 1/20 \times$

Limiter Value VU 33, 1082.

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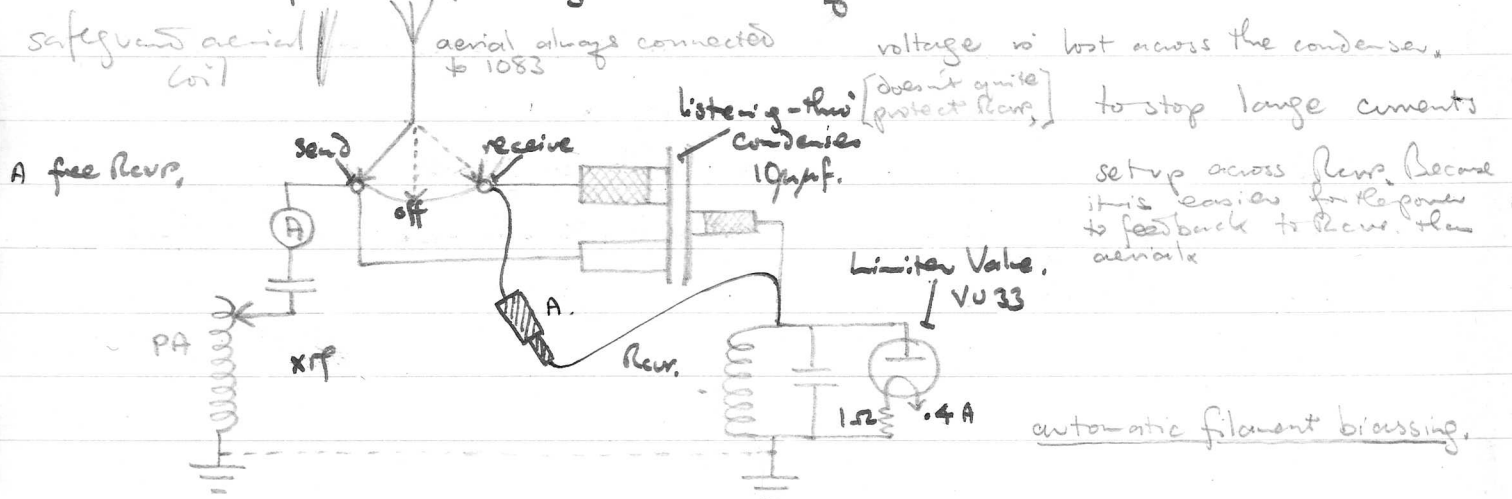
"listening-thru" *

Diode VU33, safeguards the aerial circuit from high currents introduced by the power from the X.P.F. tube.

Action is such that it works as a low resistance shunt, across the aerial tuning.

In order to control the operation, bias is used, making the anode .4 volt -ve. This ensures normal signals are not reduced in strength.

"listening thru": Above, in conjunction with the "listening-thru" condensers enables the x.p.f. to be operating simultaneously with the Rcvr.



* current flow must start small & build up, & the L. value cuts down the flow in the Rcvr.
+ A signal of .4 volts is v. loud. coils x

Necessities for Listening-thru: ① Condensers ② Limiter Valve ③ Smoothing condensers on 10G (sparks to earth.)

Cathode bias [L.T. 1000]

Making PA Valve Imperative

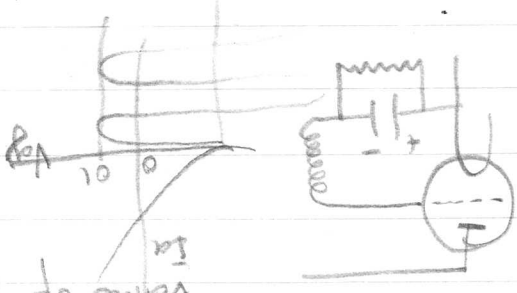
- * ① Overload HF
- * ② Outstep with r_{p0}
- * ③ Also for Neutralizing [to see current going from r_{p0} to PA * : PA Imperative, like tuning]

Automatic Grid Bias

— we Grid will reduce the average anode current & lower the Valve losses
 ① increase V_a
 ② increase — we bias a the feedback

∴ automatic device, valve correctly biased for any

value of anode potential
 $V_a - grid + [0-01]$
 grid leak condenser



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Grid Bias

[So that no current flows & so no oscillations. Class is: Class B, Class C, Class D, Class E, Class F, Class G, Class H, Class I, Class J, Class K, Class L, Class M, Class N, Class O, Class P, Class Q, Class R, Class S, Class T, Class U, Class V, Class W, Class X, Class Y, Class Z]

Self bias! — if oscillations passed on one very things the they are biased right back on the grid