IV — Lay out 60 mc IF Amp of B = 20 mc

8702's at $6 \times 10^{+3}$ umhos

$E_p = 120$ $E_g = -1.5$

$E_{s_1} = 120$

$I_p = 10.2$ ma

$I_{s_1} = \frac{3.2 \text{ ma.}}{13.4 \text{ ma}}$

C_{in}, C_{out} } $C_{total} = 8.6$ μμ

$$GB = \frac{6 \times 10^{-3}}{2\pi \times 8.6 \times 10^{-12}} = 111 \text{ mc}$$

$$R_k = \frac{E_g}{I_{kt}} = \frac{1.5}{.0134} = 112 \Omega$$

3 staggered triples

Band shrinkage $\left(\sqrt[6]{2^{1/m}-1}\right) = .8$

Neco. band width $= \frac{20}{.8} = 25$ mc

Stage Gain $= \frac{111}{25} = 4.44 \times$ db $= 20 \log 4.44 = 20 \times .647 = 12.94$ db

total " $= 12.94 \times 9 = 116.1$ db V.G. $= \text{Ant}\frac{116.}{20} = \text{Ant}5.8 = 6.3 \times 10^5$

From Valley + Wall. P 189-190

$f_o = 60$ $\delta = \frac{25}{60} = .417$ $\alpha = 1.19$

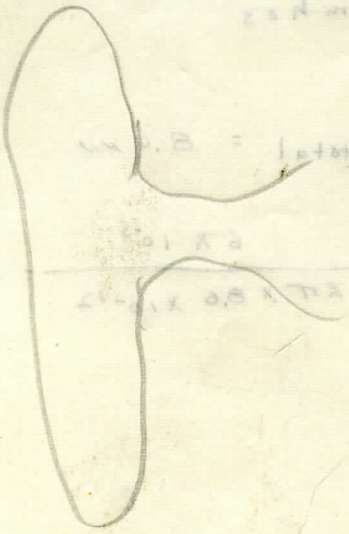
$B = 25$ $d = .21$

1st stage mc.

$f_1 = 60 \times 1.19 = 71.4$ $B_1 = .21 \times 71.4 = 15$ mc.

$f_2 = 60$ mc $B_2 = 25$ mc.

$f_3 = \frac{60}{1.19} = 50.4$ $B_3 = .21 \times 50.4 = 10.6$ mc.



$$X_C = \frac{1}{6.3 \times 1 \times 10^{-9} \times 6.5 \times 10^{7}}$$

$$= \frac{1}{30 \times 10^{-2}}$$

V

dissipation for grid resistors

1st stage

$\beta = 111$ mc.

$\beta_1 = \frac{1}{2\pi RC}$

$15 \times 10^6 \quad \frac{1}{6.28 \times R \times 8.6 \times 10^{-12}}$

$R = \frac{1}{6.28 \times 8.6 \times 15 \times 10^{-6}}$

$= \frac{1}{8.1 \times 10^{-4}}$

$= \boxed{1235\ \Omega}$

2nd stage

$R = \frac{1}{2\pi \beta c} = \frac{1}{6.28 \times 25 \times 10^6 \times 8.6 \times 10^{-12}} = \frac{1}{14.6 \times 10^{-4}} = \boxed{741\ \Omega}$ ~~684~~

3rd stage

$R = \frac{1}{6.28 \times 10.6 \times 8.6} K = \frac{1}{k} = \boxed{1745\ \Omega}$

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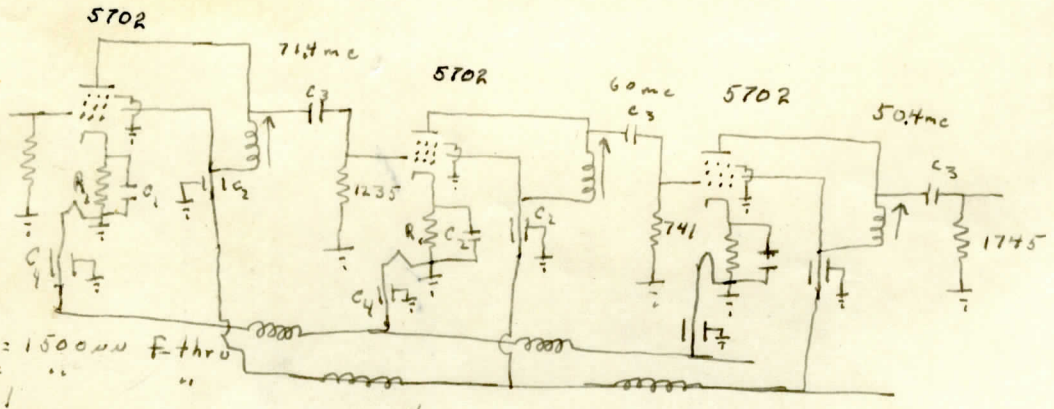
triple



$C_2 = 1500\ \mu\mu f$ thru

$C_4 =$ "

$X_c = \frac{1}{100 \times 10^{-12} \times 50 \times 10^6 \times 6.28} = \frac{1}{.314 \times 10^{-4}} = 3.19 \times 10 = \boxed{31.8\ \Omega \text{ for } 100\ \mu\mu f}$

$C_3 = 1000\ \mu\mu f$

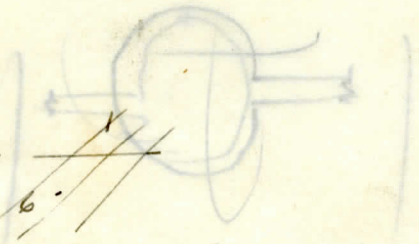
VI –

Det. Inductance of coils + wind them on cer. forms

A — 71.4 mc C = ~~80.6~~ 8.6 mc

B — 60. mc

C — 50.4 "



$$f_1 = \frac{1}{2\pi\sqrt{LC}} = \frac{1}{6.}$$

$$L = \frac{1}{4\pi^2 f^2 C} = \frac{1}{39.4 \times 71.4 \times 10^6 \times 8.6 \times 10^{-12}} = \frac{1}{3.94 \times .714 \times .86 \times 10^{-2}}$$

$$= \frac{1}{39.4 \times 7.14 \times 10^7 \times 8.6 \times 10^{-12}} = \frac{1}{3.94 \times .505 \times .86 \times 10^6} = .584 \times 10^{-6} H$$

$f_2 = 60$ mc.

$$L_2 = \frac{1}{39.4 \times 36 \times 10^{14} \times 8.6 \times 10^{-12}} = \frac{1}{3.94 \times .36 \times .86 \times 10^6} = .821 \times 10^{-6} H$$

$f_3 = 50.4$

$$L_3 = \frac{1}{39.4 \times 8.6 \times 25.4 \times 10^{14} \times 10^{-12}} = 1.162 \times 10^{-6} H$$

VI