Mass Exp-
Calculations:

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$$f_n = \frac{1}{T} = \frac{1}{2\pi}\sqrt{\frac{Kg}{W}}$$

$$T = \frac{1}{f_n} \quad \therefore \quad \frac{1}{T} = \frac{1}{2\pi}\sqrt{\frac{Kg}{W}}$$

$$\propto \frac{1}{\sqrt{\frac{Kg}{W}}} = \frac{T}{2\pi} \propto \frac{2\pi}{\sqrt{\frac{Kg}{W}}} = T$$

$$T^2 = \frac{4\pi^2}{\frac{Kg}{W}} = 4\pi^2 \frac{W}{Kg}$$

$$T = 2\pi\sqrt{\frac{W}{Kg}}$$

$$T \propto \sqrt{W}$$

Numerical Example:

$W = 100^{\#}$

$g = 32.2\ '/sec^2 \times 12''/' = 386.4\ ''/sec^2$

$K = 10\ \#/''$

$$\tau = 6.2832\sqrt{\frac{10^2}{3.864 \times 10^2 \times 10}} = \sqrt{2.588 \times \sqrt{10^{-2}}}$$

$$\approx 6.28 \times 10^{-1} \times 1.7 = 1.0676$$

cks c̄ Nomograph

p-2.2 S&V HB

Numerical Examples:

? T_1, T_2

$W_1 = 150.^{\#}$

$g = 386.4\ ''/sec^2$

$K = 20^{\#}/in$

$W_2 = 150.1^{\#}$

$$T_1 = 2 \cdot 3.1416 \sqrt{\frac{15. \times 10^{-1}}{386.4 \times 10^{2} \times 2 \times 10}}$$

$$= 6.2832 \sqrt{\frac{15.00}{7.728} \times 10^{-2}}$$

$$= 6.2832 \sqrt{1.9409937 \times 10^{-1}}$$

$$T_2 = 6.2832 \sqrt{1.9422877 \times 10^{-1}}$$

Using 5 Pl Logs

ΔW 10^{-3} $\propto \rho^3$ ΔW

$1.3\ 9\ 2\ 4^2 = 1.9387777$

$\sqrt{1.94\ 099\ 370}$

1

20 3 | 94
23 | 69
260 9 | 2509
2421
3780 2 2 | 8893
7564
27840 | 132970

$T \propto \sqrt{\frac{W}{g}}$

$\sqrt{10^{-3}} = \sqrt{10 \times 10^{-4}}$

$T \propto \sqrt{.1}$

$= 3 \cdot 10^{-2}$

D = VT
V = 6"/sec
T = 5×10^{-4}
D = $5 \cdot 5 \times 10^{-4}$
= 2.5

$1.3\ 9\ 2\ 9^2 = 1.9401704$

$\sqrt{1.94\ 22\ 8770}$

20 3) 94
69
260 | 2522
2421
3780 2 | 10187
~~349~~
7564
27840 | 262370

Log 1941 = $\frac{28803}{2}$
14401

Log 1942 $\frac{28825}{2}$
14412

D = VT
5
$.5 \times 10^{-3}$
$5 \times .5 \times 10^{-3}$
$= 2.5 \times 10^{-3}$