Resonance Column II

AIM:

To compare the frequencies of two tuning forks.

APPARATUS: Resonance column apparatus, Tuning forks ,Rubber hammer etc.

THEORY:

If l_1 and l_2 are the first and the second resonance lengths of the air column with tuning fork frequency f_1

Then velocity of sound in air

$$v = f_1\lambda = 2f_1(l_2 - l_1)$$

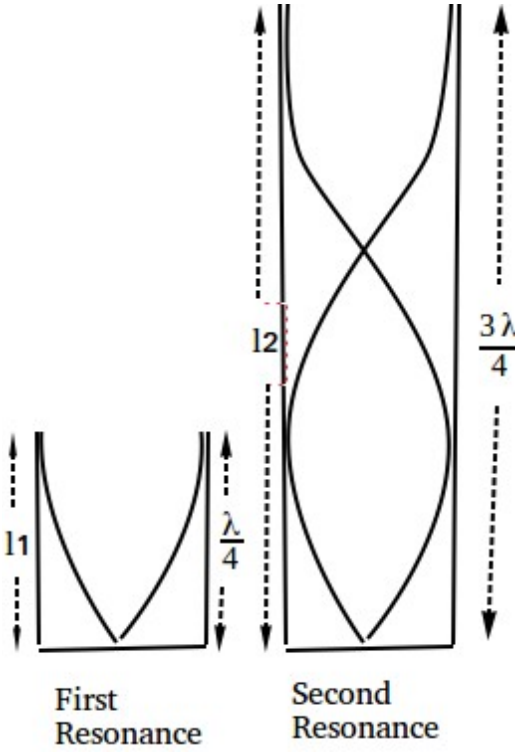
If the experiment is repeated with the tuning fork of frequency f_2, we can write the velocity of sound in air as

$$v = f_2\lambda = 2f_2(L_2 - L_1)$$

where L_1 and L_2 are the first and second resonance lengths with frequency f_2

Then the ratio of frequencies of the tuning forks,

$$\frac{f_1}{f_2} = \frac{L_2 - L_1}{l_2 - l_1}$$



OBSERVATIONS:

Frequency of tuning fork, ν (Hz)	First resonating length, l_1 (cm)			Second resonating length, l_2 (cm)			$\frac{f_1}{f_2} = \frac{L_2 - L_1}{l_2 - l_1}$
	1	2	Mean	1	2	Mean	
f_1 =							
f_2=							

RESULT:

1. The Ratio of the frequencies of the tuning forks =