

## Frequency / Footage Charts

| Open Pipe Length | 32'   | 16'   | 8'     | 4'     | 2'     | 1'     | 1/2'    | 1/4'    | 1/8'    |
|------------------|-------|-------|--------|--------|--------|--------|---------|---------|---------|
| Note:            |       |       |        |        |        |        |         |         |         |
| C                | 16.35 | 32.70 | 65.41  | 130.81 | 261.62 | 523.25 | 1046.50 | 2093.00 | 4186.00 |
| C#               | 17.32 | 34.64 | 69.29  | 138.59 | 277.18 | 554.36 | 1108.73 | 2217.46 | 4434.92 |
| D                | 18.35 | 36.70 | 73.41  | 146.83 | 293.66 | 587.33 | 1174.65 | 2349.31 | 4698.63 |
| D#               | 19.44 | 38.89 | 77.78  | 155.56 | 311.12 | 622.25 | 1244.50 | 2489.01 | 4978.03 |
| E                | 20.60 | 41.20 | 82.40  | 164.81 | 329.62 | 659.25 | 1318.51 | 2637.02 | 5274.04 |
| F                | 21.82 | 43.65 | 87.30  | 174.61 | 349.22 | 698.45 | 1396.91 | 2793.82 | 5587.65 |
| F#               | 23.12 | 46.24 | 92.50  | 184.99 | 369.99 | 739.98 | 1479.97 | 2959.95 | 5919.90 |
| G                | 24.50 | 49.00 | 98.00  | 195.99 | 391.99 | 783.99 | 1567.98 | 3135.96 | 6271.92 |
| G#               | 25.95 | 51.91 | 103.82 | 207.65 | 415.30 | 830.60 | 1661.21 | 3322.43 | 6644.87 |
| A                | 27.50 | 55.00 | 110.00 | 220.00 | 440.00 | 880.00 | 1760.00 | 3520.00 | 7040.00 |
| A#               | 29.13 | 58.27 | 116.54 | 233.08 | 466.16 | 932.32 | 1864.65 | 3729.31 | 7458.62 |
| B                | 30.86 | 61.73 | 123.47 | 246.94 | 493.88 | 987.76 | 1975.53 | 3951.06 | 7902.13 |
| Octave #         | 00    | 0     | 1      | 2      | 3      | 4      | 5       | 6       | 7       |

NOTE: Any two adjacent tones are related by a factor of 1.05946 (the twelfth root of 2).

Examples:  $(65.41)(1.05946)(1.05946)(1.05946) = 77.78$  that is, (C)(X)(X)(X) = D#

$(440)/(1.05946) = 415.30$  that is, (A)/(X) = G#

| Harmonic              | Subfund  | Sub 3rd | Fundamental | 2ND    | 3RD         | 4TH       | 5TH         | 6TH            | 7TH          | 8TH       |
|-----------------------|----------|---------|-------------|--------|-------------|-----------|-------------|----------------|--------------|-----------|
| B-3 gen #             | 13       | 32      | 25          | 37     | 44          | 49        | 53          | 56             |              | 61        |
| Key (relative)        | C1       | G2      | C2          | C3     | G3          | C4        | E4          | G4             | B#4          | C5        |
| Footage<br>* = approx | 16'      | 5 1/3'  | 8'          | 4'     | 2 2/3'<br>* | 2'        | 1 3/5'<br>* | 1 1/3'<br>*    | 1 1/7'<br>*  | 1'        |
| Classical Names       | Sub-Oct  | Quint   | Unison      | Octave | 12th        | 15th      | Tierce      | Larigot        | Septiem<br>e | Flageolet |
|                       | Double-? |         |             |        |             | Doublette |             | Super<br>Quint |              | Octaaf    |

Fig. 1