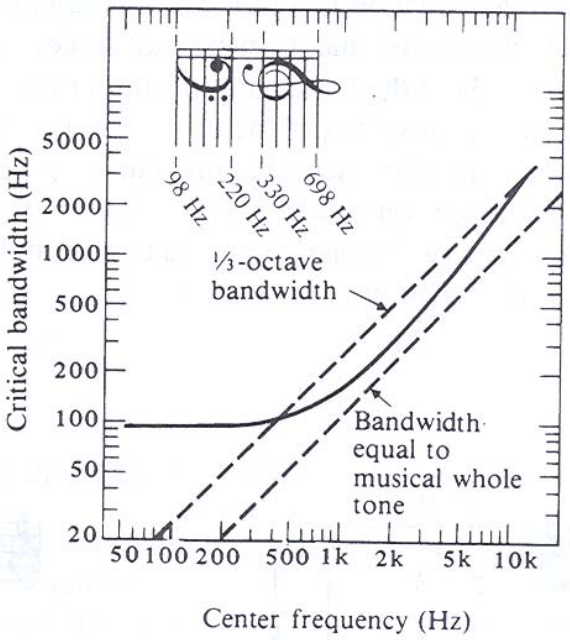

Center frequency (Hz)	Critical bandwidth (Hz)
100	90
200	90
500	110
1,000	150
2,000	280
5,000	700
10,000	1,200

In musical language, note that 1 whole note = 2 semitones; a 1/3 octave BW = 4 semitones = a major third. Note also that *e.g.* a 31-band audio spectrum analyzer covers the entire audio band (20 *Hz* – 20 *KHz*) in 1/3 octave per band.

Binaural Hearing and Sound Localization:

At frequencies below $f < 1000$ *Hz*, sound localization is primarily due to sensitivity to the inter-aural arrival time difference Δt (for sound pulses), or equivalently the relative phase difference $\Delta\varphi = \Delta t/\tau$ (for steady sounds) associated with sounds traveling paths L_1 vs. L_2: