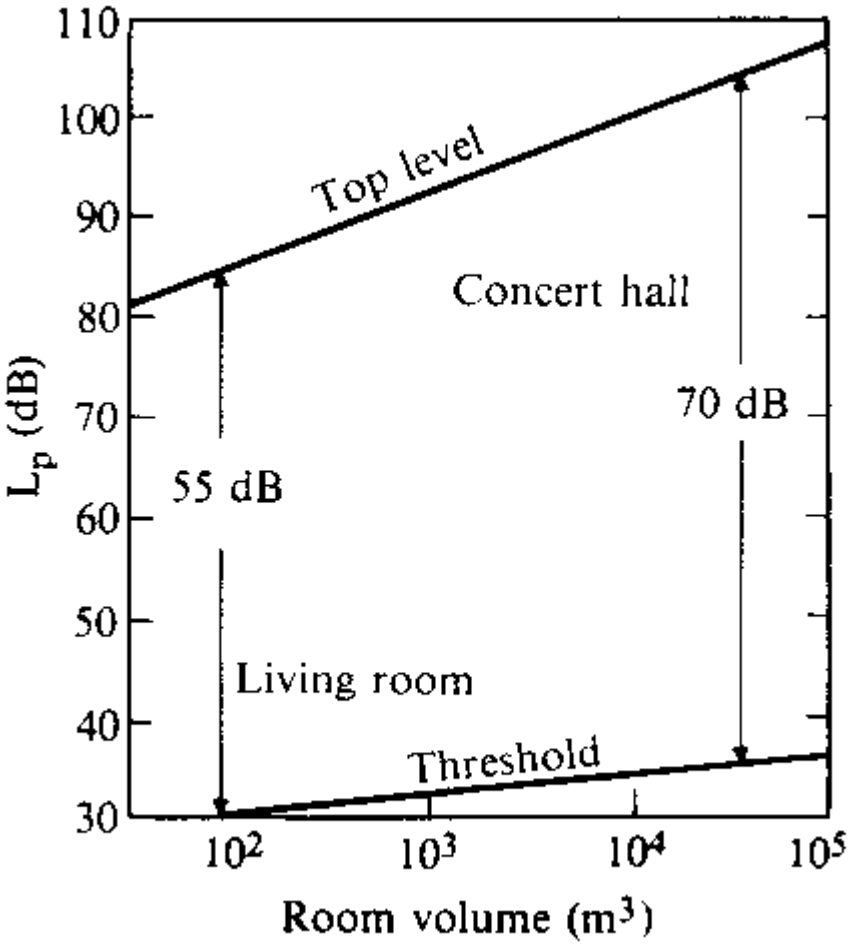
The figure shown below gives a general indication of the loudness and dynamic range at which music may be heard in rooms of various sizes.



It can be seen that a listening room in a home typically has ~ 55 *dB* of listenable/tolerable dynamic range *vs*. ~ 70 *dB* of dynamic range for a concert hall. If the sound pressure level exceeds the top level curve at any point, the (average) listener's response is "it's too loud"… The threshold curve is associated with the minimum adequate signal-to-noise levels associated with average/typical listening rooms of varying room volume *V*.

Not all tone controls/graphic equalizers have acceptable phase-shift attributes at their band-edges, and transient response {"you gitz what you payz for"}. Similarly, 2-way/3-way/4-way loudspeaker sound enclosures with passive cross-over networks may also have unacceptable phase-shifts and transient response at the cross-over frequency points.

Attempts to improve the ambience or spatial-temporal characteristics of reproduced sound in small listening rooms have led to the development of a variety of room expanders, stereophonic spreaders and shifters, *etc*. These are often ignored by hi-fi sound enthusiasts/audiophiles…