

Masking:

Superposition of two (or more) sound signals can make it difficult to “decode” one of them, e.g. listening to a friend talk to you in a crowded/noisy room – known as masking.

Masking problem increases with age and with hearing damage (exposure to loud noises).

e.g. a $L = 60 \text{ dB}$, $f = 1200 \text{ Hz}$ masking tone.

See curve below for the *JND* vs. frequency for 1200 Hz masking tone vs. intensity level of masking tone. One can see the effect of the critical band and also see effect of 2nd harmonic (difference frequency, $\Delta f = f - f_{\text{mask}} = 1200 \text{ Hz}$) – due to quadratic non-linear response term(s) in our ear (and/or brain)! {See UIUC P406POM lecture notes on distortion for details}

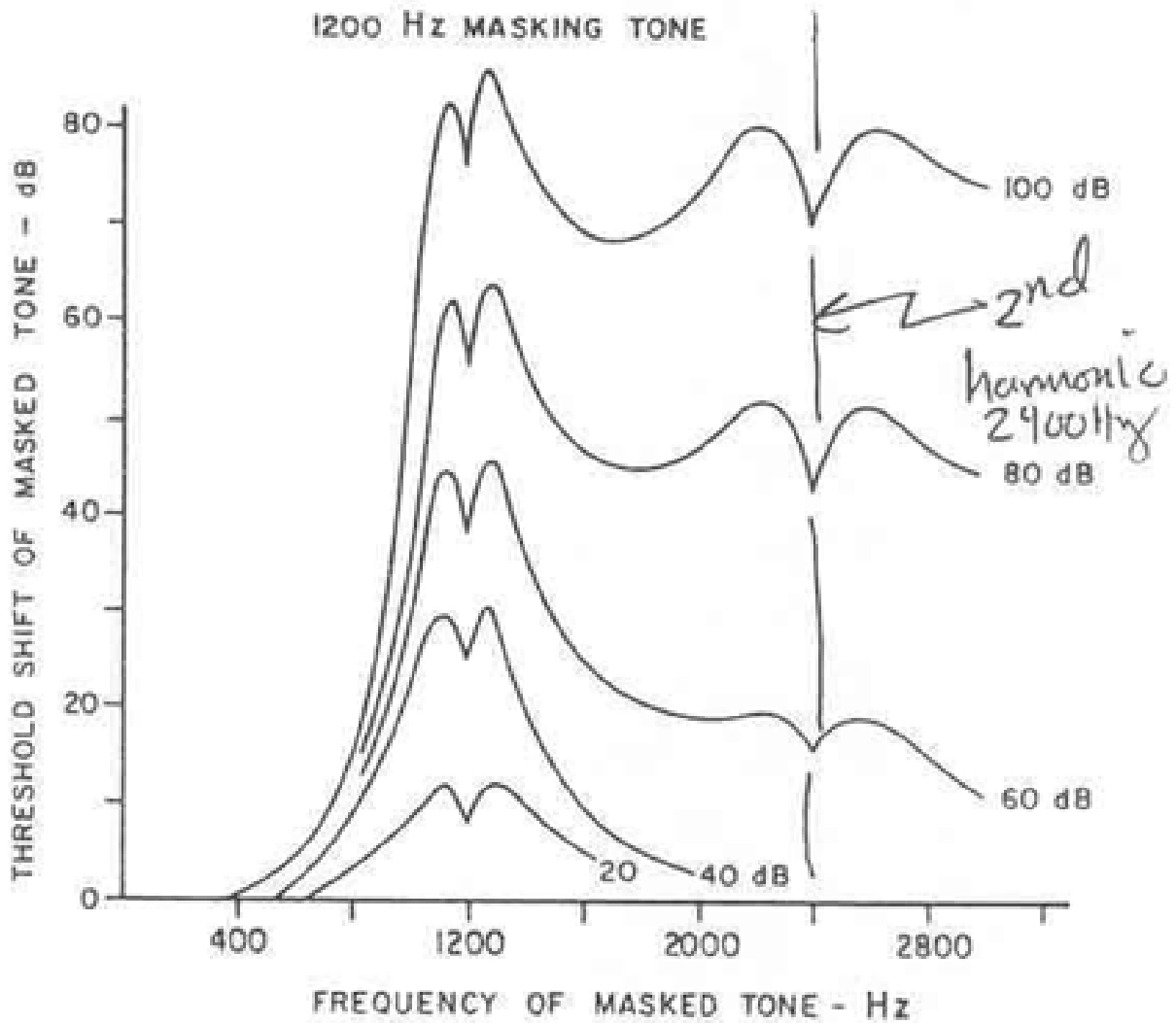


FIG. 5. Masking curves for a masking tone of 1200 hertz.