

# Letter to the Editor

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## NOISE CONTROL/HEARING CONSERVATION

### To the Editor:

After reading the paper entitled "Effect of Simultaneous Exercise and Noise Exposure (Music) on Hearing" by Vittitow et al (1994) and the ensuing correspondence with Paul Kileny, I would like to offer some additional comments. Dr. Kileny's comments regarding additivity of sound sources on temporary threshold shift are well founded and justifiable. The motivation for my letter, however, stems from my concerns with the response given to Dr. Kileny. Drs. Windmill and Cunningham explained that the difference between the music (primary source) and cycle ergometer (secondary source) exceeded 30 dB, measured in the vicinity of the ear canal entrance. They then assumed that the ergometer did not contribute to the overall SPL.

A similar common problem exists in noise control/hearing conservation, where it is necessary to calculate the contribution from two or

more contributing noise sources in order to predict total output in SPL or to evaluate validity of noise measurements. Published tables for this purpose show that, as the difference in output levels between two sources approaches 10 dB, the additive effect is negligible ( $< .5$  dB) and for all intents and purposes is 0 dB when the difference is 16 dB (Harris, 1991). Thus, the potential problem Dr. Kileny pointed out could have easily been predicted prior to the experiment by measuring the outputs at the sources. Second, the authors interchanged the terms "SPL" and "intensity." These are quite different entities with dissimilar applications in acoustics, and are confusing to the reader.

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Harris CM. (1991). Introduction. In: Harris CM, ed. *Handbook of Acoustical Measurements and Noise Control*. New York: McGraw-Hill, 1.1-1.29.

Vittitow M, Windmill IM, Yates JW, Cunningham DR. (1994). Effect of simultaneous exercise and noise exposure (music) on hearing. *J Am Acad Audiol* 5:343-348.