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Transducers, Earmolds and Sound Quality Considerations

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> Mead C. Killion
> In Acoustical Amplification for the Hearing Impaired: Research needs
> Studebaker, G.A., and Bess, F., (eds.), 1982.

SOMETHING ABOUT MEAD

This article, published a year before the founding of Etymotic Research, reveals much of what Mead had in mind to devote the rest of his professional life to. His 1979 doctoral dissertation had already demonstrated a major theme: the viability of creating practical hearing aids with high-fidelity sound quality. This article picks up from there to summarize Mead's observations and thoughts about the state of the art in hearing aids, and it frames what he sees as the work ahead — to which he dedicated himself and his company, achieving commercial success and benefiting people with hearing loss. The article includes discussions of the importance of binaural amplification; the need to make sounds not only more audible but to do so without reducing the dynamic range of sounds available to the listener (wide-dynamic-range compression); the importance of a smooth frequency response (no extraneous peaks); the advantage of innovative tubing configurations in earmolds; and the need to test hearing aid performance with soft, moderate, and loud input levels - not at just one level, etc. Interesting to note herein is the enthusiasm with which Mead expresses his ideas, a personal style that invites the reader in, found throughout his professional writings.

SUMMARY OF THE ARTICLE (Transcribed Abstract)

This chapter presents an argument for a shift in emphasis in hearing aid research. (The called-for "shift" includes discussions of: developments in subminiature components; tailoring frequency response through innovative earmold and other design considerations; the importance of sound quality.) The physical limitations on hearing aid performance have now been largely removed, and recent speech discrimination research provides excellent guidance on how to maximize aided speech discrimination for a given individual. Much less information is available on how to maximize the hearing aid's overall utility for a given individual as he goes about his daily life. This is a multidimensional problem, and arguments for multidimensional research are offered.

> Annotated by: Larry Revit