Canadian Audiologist
The Official Publication of the Canadian Academy of Audiology

An “Acoustically Invisible” Hearing Aid

Published November 12th, 2025

Mead Killon, PhD

> Mead C. Killion
> Hearing Instruments, 39 (10), 39-44, 1988.

SOMETHING ABOUT MEAD

This 1988 innovation was known as the K-AMP and while we all knew what the K in K-AMP stood for, as a field, we initially didn’t “get it”. But within a few years, the K-AMP became the mainstay of many hearing aid manufacturers’ offerings and was the go-to hearing aid for musicians. It was perhaps the last of the analog era’s great accomplishments, later replaced by the Digi-K and a few other innovations. There is no other word than “genius” to describe the K-AMP. This was the brainchild of Mead’s PhD thesis almost a decade earlier and was the first truly high-fidelity hearing aid that essentially popped out of a wearer’s ear when the input level became very high, thereby allowing high-level sounds such as music to reach the wearer as if they weren’t even there. In only the past several years have we finally caught up to this 1988 analog innovation with modern digital hearing aids. On a personal note, at least in the early and mid-1990s, I knew the whereabouts of every single K-AMP IC chip in existence for my music patients, and of one willing manufacturer in the United States who would do the legwork to actually solder them. Even today, I get emails and phone calls from audiophiles and musicians asking where they can get a new K-AMP hearing aid. I had one client who had been wearing K-AMP aids until he passed away last year (and with a friendly engineer at a local hearing aid manufacturer, we were keeping them running – this musician used to play with Oscar Peterson and composed music for Benny Goodman’s band, and the K-AMP was the only hearing aid he would consider).

SUMMARY

This is an article on “translational research”- it describes the missing link between what the human auditory system requires and how to address it with technology. The article is in two parts: Part 1 consists of the problem with hearing aids, and Part 2 addresses the K-AMP solution. The K-AMP was a single-channel hearing aid that used different low- and high-frequency compression detectors with different time constants. For low-level inputs, the hearing aid was linear. As the inputs became louder, a gradual (and mild) input compression was applied to the signal (no more than 1.7:1), and as the input increased, the gain dropped to zero, perfectly replicating the open-ear response for high-level inputs. The K-AMP was also among the very first hearing aid to use the class D receiver. In modern jargon, one would consider the K-AMP to be the first successful

WDRC hearing aid- something we all take for granted now. (And on a personal note, I would recommend that anyone take five minutes to (re)read this 2-page classic article, along with the acknowledgements section at the end.) Mead recognized that his accomplishments were only made possible with cooperation from many others.)

> Annotated by: Marshall Chasin