

Sound Approach

Loopy idea brings in speech loud and clear **BY LARRY GREENEMEIER**

STANDARD HEARING AIDS CAPTURE sound via a microphone and then send an amplified version to an earpiece. They work well in relatively quiet, intimate settings, but in public spaces filled with background noise, most users find them of little use. A simple technology that sidesteps the problem, long available in Europe, has finally begun entering the U.S. market. Advocates hope that with the success of pilot projects, the hearing impaired will be able to find public address announcements and other kinds of speech more intelligible.

The technology is an induction-loop system (known as a hearing loop), whereby electromagnetic waves produced by a microphone, public address system or telephone receiver induce an analogous current in the loop. The loop can broadcast the signals directly to a hearing aid equipped with an appropriate detector—specifically, a tiny copper telecoil wire, which picks up the signal (also via induction) and then sends it for amplification and transmission out of the earpiece. (Hearing loops can also broadcast signals to cochlear implants, which are surgically implanted devices that directly stimulate the auditory nerve.)

Telecoils work somewhat like Wi-Fi for hearing aids, enabling them to serve as customized, wireless loudspeakers, says David Myers, a psychology professor at Hope College and a strong advocate for the devices. Makers of hearing aids are increasingly equipping their devices with telecoils, whose original use was to boost telephone sounds. More than 60 percent of hearing

aids come with telecoils, up from 37 percent in 2001, according to a survey report in the April 2008 *Journal of Hearing*.

Still, Myers notes, although about 36 million Americans suffer from hearing loss, the loop technology has not been as widely embraced in the U.S. as it has been in other regions of the world, particularly in northern Europe. Myers, who himself has impaired hearing, first became aware of the technology more than a decade ago while worshipping in Scotland's

Iona Abbey, where the building's poor acoustics prevented him from clearly hearing the service. At his wife's prompting, Myers switched on his hearing aid's "T" (for telecoil) setting to see what would happen. "The sudden clarity was overwhelming," he adds, "an experience that I have since had in countless other British venues, from auditoriums to cathedrals to the backseats of London and Edinburgh taxis."

Since then, Myers and others have worked to introduce the technology to the U.S., which has lagged in adopting the hearing loops because the technology is not a requirement for public venues, Myers says. Since its 2004 revision, the Americans with Disabilities Act (ADA) has required public venues to offer assistive-listening systems. But rather than installing hearing loops, a venue can offer FM or infrared systems, which require users to borrow equipment.

The ADA's position is that no single approach works for every person and every venue; infrared systems, for instance, are less effective in sunlight than the FM approach but are generally more private. "Differences in [confidentiality], interference, cost, installation requirements and operability make it impossible to simply use one type of [assistive-listening system] in every place," ADA guidelines state.

Myers disagrees, pointing out that many individuals with hearing loss are self-conscious about asking for an ear-



HEARING AIDS with an embedded "T" switch (for telecoil) can pick up clearer sound in the Gerald R. Ford International Airport in Grand Rapids, Mich., which has an induction-loop system (identified by blue signs).

phone setup. And some are averse to using earphones previously worn by others. Installed hearing loops would enable people to use their own devices discreetly.

For fans of hearing loops, progress is being made, if slowly. Janice Schacter, chair and founder of the advocacy group Hearing Access Program, has succeeded with transportation systems. In September, New York City's Taxi & Limousine

Commission approved hearing loops for cabbies who want to install it in their vehicles, a decision that came after a 13-month pilot program with 15 taxis set up with Schacter's help. Hearing-loop technology could exist at up to 642 information booths in the New York subway system, Schacter says, who worked with the city to launch the initial pilot test at the Wall Street station.