



The Coming World of Hearing-Aid-Compatible Assistive Listening

By David G. Myers

Imagine a happier world for the mushrooming millions of people with hearing loss. In this utopia, hearing aids have doubled their present usefulness. The author describes his advocacy for audio loops and why they are effective assistive listening systems.

In *The Adventure of Silver Blaze* Sherlock Holmes took note of the dog that didn't bark, the dog that curiously did nothing. What is similarly curious about the assistive listening devices now mandated for most public facilities by the Americans for Disabilities Act (ADA) is their visible absence. Rarely does one see people using them. One theater manager in my city estimated that her units get used once per month per theater.

In a new 20-screen theater complex, a ticket seller told me (wrongly, I later learned) that they had no listening assistance (at least nothing he had ever been told or asked about). The receiver/headsets, purchased for more than \$100 a unit, often just sit in closets, many with dead batteries. Although the systems are designed, mandated, purchased, and installed with the best of intentions, most hard of hearing people either don't know about their existence or don't bother to use them.

Most of us who read this *Journal* understand that hearing loss and hearing technology are nothing to be embarrassed about. As SHHH Executive Director Terry Portis, Ed.D., has written, "Our attitude is: Hearing loss will not isolate me, it will not destroy my relationships or my career, and it will not keep me from living a full and meaningful life."

Moreover, many of us have benefited from infrared or FM assistive listening systems in public venues or in our homes. Yet, with our present technology, the unfortunate reality for now is that millions of hard of hearing Americans don't use technology that would help them hear better. Even when people locate and check out an assistive listening device, the earbud or headset offered is often incompatible with their hearing aids, which must be removed.

A Hearing Utopia

Now imagine a happier world for the mushrooming millions with hearing loss. In this utopia, hearing aids have double their present usefulness. They serve as sophisticated microphone amplifiers, yes, but also as personalized loudspeakers. In churches, auditoriums, theaters, and even in home TV rooms, clear sound, customized to one's own needs, is broadcast by loudspeakers right inside one's ears.

Turning on these in-the-ear "loudspeakers" requires but a tap on the hearing aid or a flick of a switch. Tap again and the person can hear both the broadcast sound and voices nearby. With a room or chair pad loop, or a neck loop, telephone sound, too, can be made to broadcast through both ears, enabling clarity beyond single-ear listening with traditional amplified phones.

As word-of-mouth and newspaper publicity informs people of the doubled functionality of hearing aids, curious people are calling audiologists. Hearing aid use is increasing. Patients who are delightfully benefiting from this effortless assistive listening seldom return their new hearing aids or leave them at home in the drawer. In the public eye, the net result is improved quality of life for many.

In Holland, Michigan, and adjacent Zeeland, Michigan, this imagined future is rapidly becoming reality. Most major churches and public facilities, and more and more homes, have installed modern induction loop systems that broadcast sound to hearing aids (via a magnetic signal from a wire that encircles the audience). Supportive audiologists are equipping most of their new patients with telecoil receptors (or "audio coils," as Mark Ross, Ph.D., aptly suggests we rename them to convey their broadening usefulness). Issues that reportedly plagued poorly-designed loop systems of the past — interference, spillover of sound to adjacent rooms,

uneven coverage — have rarely posed a problem for our trained audio engineers.

It's not just in Holland, Michigan. More and more hearing aids are coming with telecoils, thanks partly to the spread of telecoil-compatible phones including many digital cell phones under a recently announced FCC requirement. The United States Access Board's new requirement that future assistive listening systems provide a neckloop option (where loop systems are unavailable) will provide an additional boost to telecoil functionality. Already, in one recent SHHH member survey, 75 percent of respondents reported their hearing aids had telecoils.

Carsten Trads, former president of GN ReSound North America, estimated that 80 percent of their hearing aids now come with telecoils, which routinely come with all behind-the-ear and in-the-ear aids. Moreover, those who most need assistive listening are also those most likely to have such hearing aids and, thus, can enjoy immediate benefit from a home or institutional loop system.

The Response

People's responses to having sound broadcast through their hearing aids have been gratifying, and sometimes moving. Many reports have come from parishioners in the dozens of newly-looped churches in Holland and surrounding communities.

"It is actually fun to go to church, and it hasn't been that way for a long time," reported one woman who could have used her church's previous infrared receiver and headset, but didn't. Another — the only one who had used the old system — reported that, "The experience of actually hearing such clear sounds was thrilling and hard to describe. One has to experience the improvement. It seemed overwhelming."

At another church, one woman broke into uncontrollable sobs when she suddenly found herself hearing the word as she hadn't in years, and then awoke at 4 a.m. the next morning and cried some more.

Some of our churches have been surprised at how quickly usage has expanded. One pastor initially was disappointed to have no users of his church's new loop system (despite the system coming with a receiver and headset for those not yet with telecoils). Eight months later, the happy pastor had three long-absent hard of hearing users who were now attending again, plus three newcomers who were attending his church because it was a place they could hear.

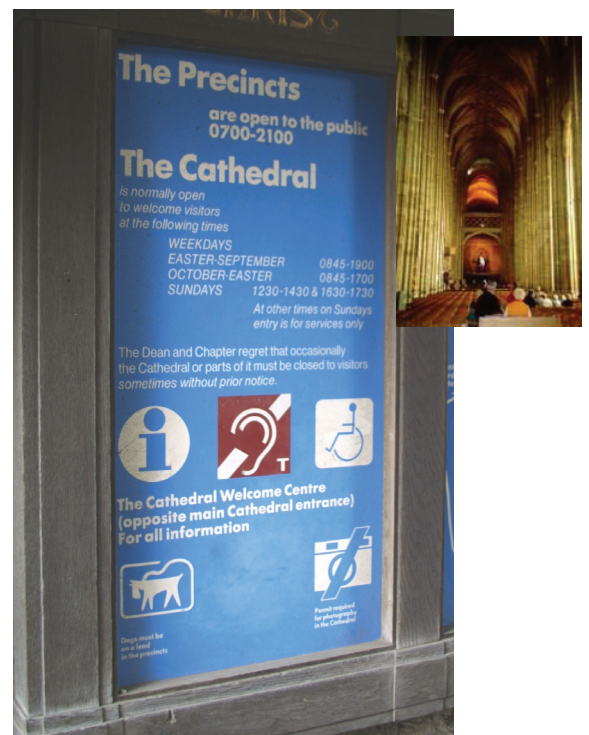
A larger church held an informational meeting and guessed that four or five of their worshipers might be interested in assistive listening. To their astonishment, three dozen reportedly showed up, half of whom were forgotten members with hearing loss who had stopped attending.

One year after a loop installation, another large church, which had averaged about one person a week using their former hearing-aid-incompatible assistive listening system, now knows of 17 people per week using their loop system (not counting others unknown to them who are subtly switching their hearing aids to loudspeaker mode).

Home loop system users also have been elated with their results. Home systems include:

- **Whole-house systems**, professionally installed, that can broadcast various audio inputs, including that from a wireless microphone worn by another family member. "It's remarkable how much I hear now. It's a whole new world," explained one man, whose wife can talk to him even from another room.
- **Room loop systems**. In a matter of minutes, I looped my TV room. First, I patched a line between the TV's audio output jack and the input jack on the small loop amplifier, which sits atop my VCR. Then I dropped the loop wire from the amplifier to the basement below, and stapled the wire, encircling my seating area, to the ceiling studs. (Others have run the wire under carpet or around their baseboards and doorways).

Now, after dialing my desired volume and tone, I can sit back, tap my hearing aids, and enjoy the remarkably clear sound from my in-the-ear loudspeakers. The amplifier can also



The teller at the Clydesdale Bank, St. Andrews, Scotland, speaks to customer's who use the loop.

Canterbury Cathedral ticket window.

Canterbury Cathedral in the United Kingdom (inset).

receive telephone input, which enables much-improved two-eared phone conversation. (Radio Shack sells an inexpensive "Telephone Handset Recording Control" cord, with a built-in on-off switch, that can connect a tele-



phone to either a tape recorder or an assistive listening device.)

• **Loop chair pads.**

The simplest loop system of all, one that my sister greatly enjoys, is contained in a thin pad that slips under the cushion of one's favorite chair. All one has to do is run the thin cord (rather like a

stereo speaker cord) around the baseboard to the loop amplifier. As one sits atop the mini loop, the performance (in our experience) is excellent, and for those in apartments the output is confined to a very small area.



HEARING LOOP INSTALLED
Switch hearing aid to T-coil

The Paragon Bank's drive-through window in Holland, Michigan.

The International Symbol for Communication Access

Momentum Grows

Loop systems are now spreading throughout western Michigan. One Grand Rapids church sound engineer reports that, "Slowly the members of our congregation have been updating their hearing aids and [in four months] we've gone from one user originally to over ten now. Several members have commented on the clarity and ease of use."

Michigan SHHH Adopts Resolution

In late 2002, the Michigan SHHH state organization adopted the following resolution:

"Whereas the number of hard of hearing persons needing assistive listening is fast growing (as the population ages and as the accumulated effects of toxic noise produce an increased rate of hearing loss), and;

"Whereas hard of hearing persons prefer assistive listening systems that:

- are hassle-free (requiring no locating, requesting, and returning of external receivers and headsets);
- are inconspicuous;
- work in transient venues such as ticket counters, teller windows, and airports;
- entail no hygienic concerns regarding public ear pads/buds;
- deliver personalized in-the-ear sound, customized by their own hearing aids to address their own hearing loss; and,

- will therefore become more widely available than assistive listening devices that require special receivers and headsets.

"Therefore, on behalf of Michigan's hard of hearing persons, Michigan SHHH recommends that Michigan's churches, auditoriums, theaters, courts, airports, and other venues where sound is broadcast install assistive listening systems that broadcast sound directly through hearing aids. We further recommend that, as mandated by the United States Access Board, such newly-installed systems also provide receivers with appropriate accessory for those as yet without suitably equipped hearing aids."

Welcome Mat for "Alternative Technologies"

Although loop systems and "audio coils" are, for the foreseeable future, the technology that best enables the Michigan SHHH resolution, the mandate leaves the welcome mat out for alternative technologies that might achieve the same end: hearing-aid-compatible assistive listening, which means the direct broadcast of sound to most hearing aids, including in-the-ear aids.

What we should care about is not the particular technology, but the goal. If tomorrow's engineers achieve hearing aid compatibility with new technologies, such as ultra low-power radio frequency broadcasts to miniaturized receivers (which could also serve as MP3 receivers for normal hearing music buffs), so much the better.

European Assistive Listening

Although little known in the United States, loop systems are becoming omnipresent in Britain and Scandinavia. In my recent visits to the United Kingdom, I have found loop systems operating not only in every church and cathedral I have visited, as well as lecture halls and auditoriums, but also in designated store checkout lanes, post office windows, and tourist information counter stations. By the end of 2004, legislation mandates that "Any business or organisation providing a product or service to the general public must have an Induction Loop System fitted wherever information is verbally provided." Under newly announced mandates, all London taxis and all London Underground ticket stations are also being looped.

American Initiative Considered

Our Michigan state legislators will soon be considering a proposed legislative mandate that, effective some future date, would require newly-constructed facilities with ADA-mandated assistive listening to install equipment that broadcasts directly to hearing aids. Marsha Mazz, technical assistance coordinator for the U.S. Access Board, agrees that facilities that install loop systems to achieve this goal should be exempt from the required neckloops and should enjoy a reduced requirement to purchase, maintain, and replace receiver-headset units (given that fewer would be needed). This cost-savings should largely offset the small, added cost of carefully engineered loop installations. Moreover, a system that costs slightly more, but has many more eventual uses, will be most cost-effective when measured by what counts: *cost per user*.

A national initiative that promotes hearing aid compatibility for both telephones and assistive listening systems is under consideration as one possible outreach of SHHH's new National Information and Training Center for Hearing Assistive Technology. SHHH has previously urged that, "Telecoils be given the prominence they deserve as a valuable hearing aid feature that will allow the expanded use of assistive listening devices" and now anticipates the development and massive distribution of a new telecoil-promoting brochure.

My vision of an ambitious "Let's Loop America!" initiative — or a more open-ended "hearing aid compatible assistive listening initiative" — would reach out to audiologists, hearing aid specialists, hearing aid manufacturers, audio engineers, architects, facilities managers, churches, the hard of hearing population, and the general public. Such audiences can be reached through their organizations, their periodicals, and their educational institutions, as well as through media that reach the general public and service organizations such as local Lions Clubs.

Although most Americans are unfamiliar with the assistive listening alternatives, hard of hearing people's preference for hearing aid compatibility can be easily explained in these examples:

Put yourself in the shoes of a hard of hearing person. When you go to a play, to worship, to a lecture, or to a movie, which of these two systems would you prefer?

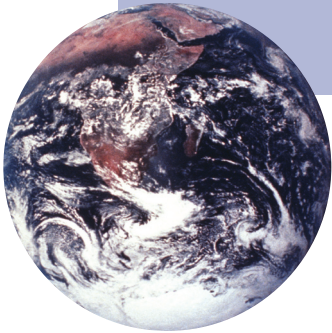
System 1 is hearing-aid-incompatible. It requires you to locate and check out a special receiver and headset, to check that its battery

The Case for Hearing-Aid-Compatible Assistive Listening Audio Loop Systems (Hearing Loop Systems)

- ✓ Require (for those with telecoils) no pick up or return of portable receiving units and headsets.
- ✓ Require purchasing/maintaining/replacing fewer portable receiving units (for those as yet without telecoils).
- ✓ Operate on a universal frequency (FM systems operate on differing frequencies, requiring receivers for each venue).
- ✓ Are inconspicuous.
- ✓ Work in transient situations. They can serve people with hearing loss at ticket counters, teller windows, drive-through stations, airport gate areas, and train and subway stations — venues where other assistive listening systems are impractical.
- ✓ Are hearing-aid-compatible. There's no need to juggle between hearing aids and headsets (for example, when shifting from sermon to singing during worship).
- ✓ Contain sound. Because sound broadcast through hearing aids is contained within one's ear, there is no risk of leaked headset sound bothering others nearby.
- ✓ Afford flexible use. Can allow either direct listening or loop broadcast modes, or both.
- ✓ Deliver personalized in-the-ear sound — sound customized by one's own hearing aids to address one's own hearing loss.
- ✓ Are, for all these reasons, much more likely to be used — and to be increasingly used, once installed (as people purchase future aids with T-coils). Moreover, it is those who most need hearing assistance who are most likely to have telecoils. (Thanks to portable receivers, loop systems, can also serve everyone, including all who are served by existing systems.)

"In 2002, our audiological practice delivered over 90 percent of all hearing aids with T-coils installed. Our patients benefit because the person speaking is broadcast directly to their ears. Our practice benefits from hugs, excited stories and tears of happiness. People are often referred for demonstration with the admonition, 'you have to hear it!' Never in my audiology career has something so simple helped so many people at so little cost."

—Audiologist Jerry Owens,
owner Lakeshore Hearing Centers,
Holland, Michigan



is charged, to remove your hearing aids, to wear a headset, and, afterwards, to remove the equipment, replace your hearing aids, and remember to turn in the equipment.

System 2 is hearing-aid-compatible. It requires you to merely push a hearing aid button and, voila! Your hearing aid becomes an in-the-ear loudspeaker, broadcasting sound customized for your own hearing loss.

Which of those two systems would you prefer? Our experience is that, given the choice, essentially all hard of hearing people will elect the second alternative, which is becoming commonplace in the United Kingdom, Scandinavia, and Australia (in contrast to System 1, which prevails in the United States).

The Vision: Doubled Functionality

Imagine this future world, where the actual and perceived usefulness of hearing aids has doubled. Isn't it reasonable to suppose that hearing aid use would therefore also double? And, as more and more people benefit from hearing aids and assistive listening, wouldn't the stigma of hearing loss and hearing aids diminish? Wouldn't support for insurance and Medicare/Medicaid funding for hearing aids likely grow?

History, together with my own field of psychological science, teaches us that the way to change the world is less by admonishing people than by altering their environments. "Drive

carefully" campaigns may have boosted safety a little, but divided highways and mandatory seat belts have done much more. Brotherhood dinners and appeals did far less to change racial attitudes than did court-mandated desegregation, the Civil Rights Act of 1964, and the Voting Rights Act of 1965. Admonishing people with hearing loss to purchase and use hearing aids and assistive listening devices helps a little. But doubling the functionality of hearing aids by changing the environment — by making hearing-aid-compatible assistive listening available everywhere — will do vastly more to increase the use of, and support for, hearing technology.

Is this an impossible dream? Or was Robert F. Kennedy right to encourage our vision: "The future does not belong to those who are content with today, apathetic toward common problems.... Rather it will belong to those who can blend vision, reason and courage in a personal commitment to the ideals and great enterprises of American society."

Margaret Mead echoed his optimism: "Never doubt that a small group of committed people can change the world. Indeed, it is the only thing that ever has."

I invite those who wish to bring hearing-aid-compatible assistive listening to their community to visit www.hearingloop.org for further information on the rationale, the applications, the cost, and the suppliers.



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Prize have appeared in two dozen periodicals. Dr. Myers also has digested psychologist research for the public in magazines from Scientific American to Christian Century, and through 15 books. He is the author of psychology texts and books for the general public, including A Quiet World: Living with Hearing Loss (Yale University Press, 2000).

Dr. Myers is a Seattle native, a member of SHHH, an all-weather bicyclist, and an avid noontime basketball player and fan of his college's basketball teams. David and his wife, Carol, are parents of three adult children, sons Peter and Andrew, and a daughter, Laura.

The author adapted this article with permission from an article he wrote for the May/June 2003 issue of Advance for Audiologists. For more information on David Myers and his work, go to: www.davidmyers.org.