

How hearing loops can help

By Stefanie Weiss, April 10, 2012



Doug Kapustin/FOR THE WASHINGTON POST - An orchestra and chorus performed an oratorio last month to accompany the silent film "The Passion of Joan of Arc" in a hall rigged to transmit the music directly to people with hearing aids.

New technology has dramatically improved the quality of hearing aids in the past decade, but some say an old technology could have the most profound impact in the decade to come on millions of people with hearing loss.

Just as WiFi connects people to the Web in wired places, hearing loops — simple wires that circle a room or part of a room — can connect many hearing aids and cochlear implants directly to sound systems. Bypassing ambient noise, this wireless connection lets users clearly hear actors on stage, the person in the subway information booth, their ministers or rabbis, announcements at an airport, even their own television sets.

But as with all things that seem too good to be true, there's a catch. Actually two catches. First, for hearing loops to work, users' hearing devices have to be equipped with something called a telecoil — which is common but not universal. Second, public places have to be "looped." In the United States, very few are.

Still, you have to start somewhere, and two national organizations — the [Hearing Loss Association of America \(HLAA\)](#) and the American Academy of Audiology — have started by encouraging performance venues to install temporary loops, just to let people give them a try.



(Doug Kapustin/FOR THE WASHINGTON POST) - A sign at Meyerhoff Symphony Hall in Baltimore alerted patrons that a hearing loop had been installed there for a performance in March.

Last month, I went to Baltimore to attend a special performance at the Joseph Meyerhoff Symphony Hall. The hall was temporarily looped to coincide with an HLAA board meeting taking place in Baltimore. The performance featured the Baltimore Symphony Orchestra and the Baltimore Choral Arts Society performing the oratorio [“Voices of Light”](#) while a giant screen projected the 1928 silent film classic [“The Passion of Joan of Arc.”](#)

Before the show, I asked half a dozen people wearing hearing aids if they had come that night just to try the hearing loop. None knew what I was talking about. When I explained that you need a telecoil in your hearing aids to use the loop, not one knew if they had one.

After the show, I spoke with the oratorio’s composer, Richard Einhorn, a relatively new member of HLAA. In 2010, Einhorn got hit with the same freaky, sudden, one-sided deafness that I have. Adding insult to injury, he lost significant hearing in his “good” ear, too. (His hearing aids have a telecoil; mine don’t, so I can’t report personal experience with loops.)

A former record producer and an expert on sound quality, Einhorn listened to his own composition at the Meyerhoff by setting his hearing aid to “T.” “It was amazing how good it sounded,” he said. The first time Einhorn used a hearing loop — at the Kennedy Center last year — he said, “I literally started to cry. I hadn’t heard live sound that good in over a year.”

I did find two other people at the performance who listened via their telecoils and were happy to have the opportunity; one was very enthusiastic about the sound quality, the other not so much.

I had a lot more questions. Here’s what I found out.

What exactly is a hearing loop?

A hearing loop is a simple wire that circles a room or part of a room — an auditorium, an information booth, a place of worship, even your den — and connects to the sound system or sound source there. If you have a telecoil — a small metal rod wrapped in wire — in your hearing aids or cochlear implants and switch to the “T” setting, you will hear as if you are connected wirelessly to the sound system. There’s no ambient noise, and the sound doesn’t have to travel all the way from the stage to your third-level seats or be blasted from your TV to your couch.

How does it work?

I asked Fred Palm — who helped design temporary loops at the Meyerhoff and the Kennedy Center, plus permanent ones in such places as the movie theater at Ellis Island, Yankee Stadium (the ticket booths, food vendors and help desks) and New York subway kiosks — to explain.

“If you run an AC current through a piece of wire, it emits a magnetic field,” said Palm, who owns a business called [Assistive Audio](#). If you take that wire and run it around a room, then “bring another piece of metal within the looped area, the second piece of metal will be magnetically induced, or picked up. It’s called induction.”

With hearing loops, “the second piece of metal in the equation is the telecoil in the hearing aid [which] picks up the signal [and] feeds it to the processing chip within the hearing aid. The circuitry in the hearing aid then processes the sound and feeds it to the person’s ear, and they hear.”

How much of a difference do loops make?

Apparently they make grown men cry. Here’s loop advocate David Myers’s story: “I visited Scotland shortly after getting new hearing aids back in 1999. I was totally lost, and sound was reverberating around 800-year-old walls. My wife saw a sign [saying the site had a hearing loop], so I turned on my telecoil for the first time. It was emotionally powerful. Suddenly I heard a clear human voice, instead of this verbal fog. I was on the verge of tears. I didn’t know sound like this was possible.”

Not all adults have this reaction. Terry Jones, a certified public accountant and financial planner in Fairfax, wears hearing aids. She attended the performance in Baltimore and told me the telecoil setting “makes the music sound more focused and clear,” but it came with a “mildly annoying” buzz.

It’s important to note that people’s reactions to hearing devices are unpredictable: An identical correction can be experienced differently by two people with the same type of hearing loss.

Why not use the traditional headsets that most theaters and auditoriums make available for those with hearing loss?

The headsets can work well, but most loop advocates say that few people with hearing loss bother to check them out. It’s a hassle, most say. The question sent composer Einhorn on a tear. Requesting and wearing the clunky and often unreliable headsets “is so embarrassing, undignified and uncomfortable that there’s no point. They don’t work very well and they’re unsanitary. They’re just terrible in many, many different ways.”

Most loop advocates I spoke to feel the same way. “If all you have to do when you’re having trouble hearing is push a button, you’ll do it,” Myers said. “If you have to make a fuss, you’ll just sit there and endure.”

As hearing rights activist Janice Schacter Lintz said, “No one should have to ask permission to hear.”

Is this a big breakthrough?

Not at all. Telecoils were first put in hearing aids in the 1940s to help wearers use telephones without screeching feedback. Hearing loops aren’t new, either. Nancy Sonnabend, 77 and a board member of HLAA from Boston, remembers when her mother, who was also an HLAA board member, “used to throw a loop around the area where she was talking with a microphone” back in the 1960s and ’70s.

Do all hearing aids have telecoils?

No. Trade publications report that the percentage of U.S. hearing-aid fittings that included a telecoil increased from 37 percent in 2001 to 58 percent in 2009. But several audiologists I spoke to in the Washington area said that only about half of the hearing aids they sell have telecoils. Ironically, some of the newest models don’t have them because, as aids get smaller, there’s not enough room for telecoils. And people seem to like small.

As for the original purpose of telecoils, today’s “feedback cancellation circuitry is so much better than it used to be,” said University of Maryland audiologist Margaret McCabe. “Many people [wearing hearing aids] can hold a phone up to their ear with no problem.” No telecoil needed.

If you don't know if you have a telecoil in your hearing aid — four out of five of my friends with hearing aids didn't — ask your audiologist. (The fifth one knew she had a telecoil but had no idea why or how to use it.)

What does it cost to loop a room?

That depends on its size and the construction of the facility. Palm said it cost about \$9,000 to temporarily loop Meyerhoff Hall with 3,000 feet of cable. (To permanently loop the space would have required lifting the carpeting to put the wires under it. Many places, I'm told, install loops when they replace carpets.)

Joe Duarte, who has cochlear implants and a small business in Fairfax that installs sound systems for people with hearing loss, said, "Most simple loops, like small meeting rooms with perimeter loops, cost between \$3,000 and \$5,000, depending on their size and the labor involved."

My audiologist, Jeff Zolt in Silver Spring, says he looped his waiting room for a few hundred dollars.

"We're laying pieces of wire on the floor," Palm said. "There's nothing glamorous about it."

Where are loops widely used?

In Great Britain, Scandinavia — and in western Michigan, largely because that's where Myers lives. Years ago, he told me, people working to accommodate those with hearing loss had to make a choice. "Scandinavia and the U.K. went one way," installing hearing loops, while in the United States, "audio contractors saw FM and infrared as meeting the ADA [Americans with Disabilities Act] requirements."

Today, if you travel to London, Myers said, you'll find hearing loops in Westminster Abbey, the airport and "the back seats of all London taxis," among many other locations.

Myers, who teaches at Hope College in Holland, Mich., and other loop advocates in the state have been busy. Dozens of churches there are looped, as are auditoriums, libraries and community centers, even the Grand Rapids airport and the Michigan State University basketball arena.

What about the rest of the U.S.?

You can find loops across the country, from Santa Fe, N.M., to Seattle to Sarasota, Fla., but it's a big country, and loops are hardly commonplace. Some recent big news comes from the Big Apple, where Schacter Lintz and others have been advocating for hearing loops: New York City Transit used federal stimulus money to loop more than [300 subway information booths](#) last year. And just last week, Nissan announced that 13,500 new city taxis, to be phased in as old cabs are retired, will be equipped with hearing loops. The partition between the front and back seat can make it hard for passengers to hear drivers; the loop will fix that.

Elsewhere in New York, you'll find loops in the Metropolitan Museum of Art, information booths on Ellis Island, the Lower East Side Tenement Museum, the New-York Historical Society, the Shake Shack on the Upper West Side and more.

Are there loops in the D.C. area?

Yes, but not many. Congressional hearing rooms are looped (as they should be; they're hearing rooms!). You'll also find loops in the main chamber of the House of Representatives, the Holocaust Museum, some Gallaudet University classrooms, several meeting rooms at the Library of Congress, some places of worship and more.

The Kennedy Center, which installed a loop last year for one performance of “Wicked,” has no plans to make it a permanent fixture.

Duarte has contracts with Montgomery and Fairfax counties to loop public buildings. Right now, he’s working with an architect to install hearing loops in the renovated Gaithersburg library.

How can I check out a hearing loop?

The Web has a cool video demonstration of sound quality with and without hearing loops. (Einhorn made it at a subway booth in New York.) You can listen to and watch it at bit.ly/hearingloop. No hearing aid required.

What has to happen for this technology to take off?

A heck of a lot of education and advocacy. People with hearing loss, audiologists, hearing-aid manufacturers, those who run performance venues and business owners all have a role to play. My conclusion: Hearing loops could help millions of people hear better — if only more people, with and without hearing loss, had heard of them.

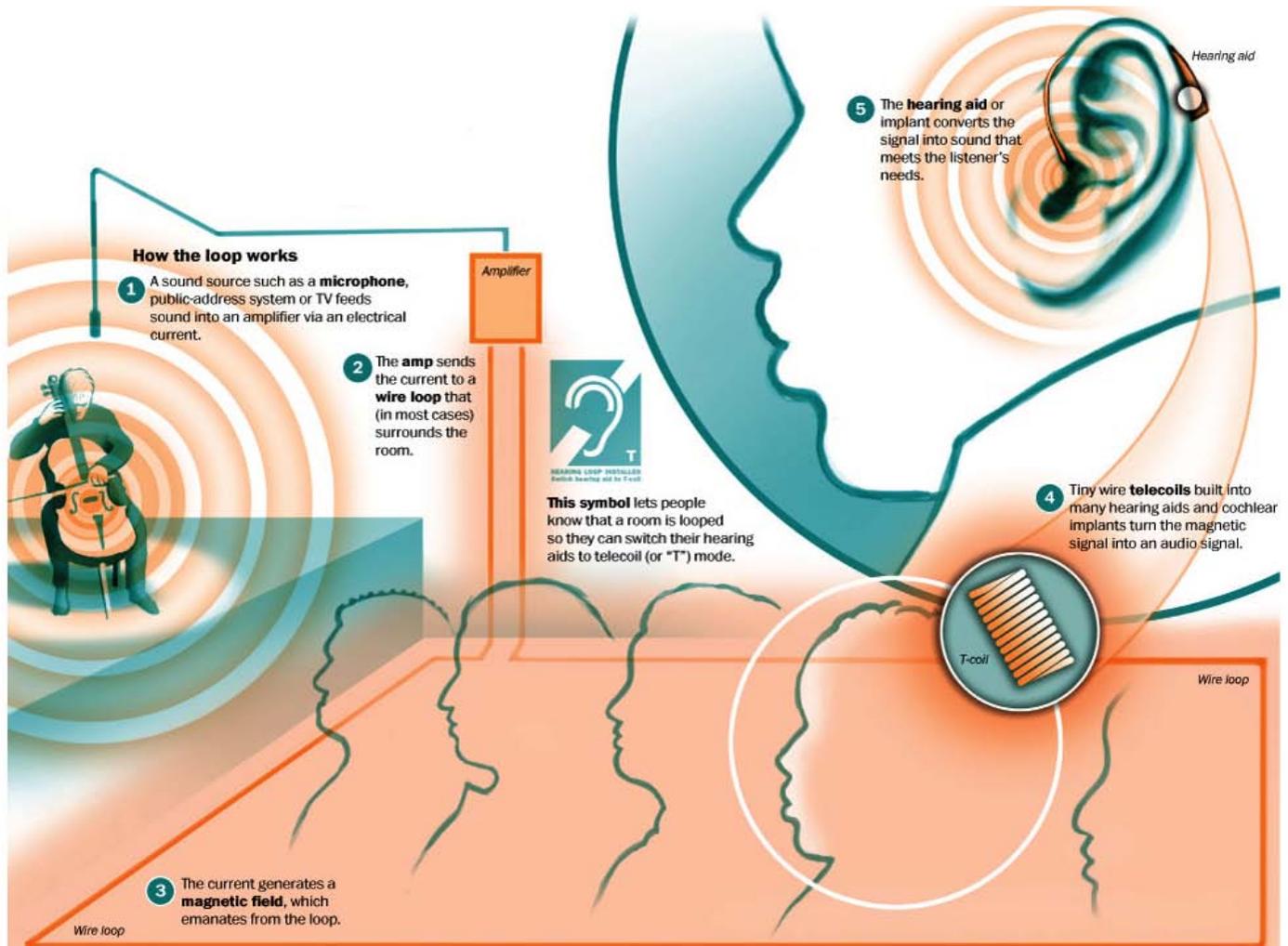
For more about the efforts of the American Academy of Audiology and the Hearing Loss Association of America, go to www.hearingloop.org.

One last question: Is the best-film Oscar that the silent movie “The Artist” won this year a comment on our increasingly loud world or an accommodation for boomers suffering from age-related hearing loss?

In February, the Los Angeles Times reported that of the 5,765 voting members of the Academy of Motion Picture Arts and Sciences, 86 percent are older than 50. You gotta wonder.

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Which loop is best? | Different situations require different types of loops.

<p>COUNTER LOOP A compact, usually vertical loop that is mounted inside a desk or counter — or a living room chair or car. Works well at ticket counters, in taxicabs and other small areas.</p>	<p>PERIMETER LOOP A single loop of wire circling a room. Works well in living rooms and small public areas that have no telephone wiring or metal framing that would interfere with the signal.</p>	<p>SINGLE ARRAY A continuous loop laid in segments to avoid metal or wiring that would cause interference. Works well only in fixed-seating areas such as lecture halls.</p>	<p>CANCELLATION LOOP A version of a single array in which a second loop on one side creates a dead zone so people in nearby looped rooms don't pick up audio accidentally. Works well when two looped rooms are adjacent.</p>	<p>LOW-LOSS PHASED ARRAY Two loops are overlaid in a very large area, but they are offset from each other, so the entire area is covered and has no dead spots. Works well in large spaces that have metal interference, such as Baltimore's symphony hall.</p>	<p>ULTRA-LOW-SPILL PHASED ARRAY Two loops arrayed and offset in a way that one blocks the magnetic field of the other, rendering the signal inaudible just a few feet outside the loop. Works well in areas where confidentiality is necessary or where separately looped rooms are close together.</p>
<p>LOOPS DON'T WORK in settings such as parties in which there is no single sound source to amplify, but they are extremely useful in places where a main sound source fights with lots of background noise, such as an information kiosk in a subway.</p>					

Sources: Fred Palm of Assistive Audio, whose team temporarily installed a loop for the Baltimore Symphony; HearingLoop.org. | By Bonnie Berkowitz and Patterson Clark/The Washington Post.