

THE Hearing Review®

www.hearingreview.com

Vol 17 No 2 February 2010

Looping the World

How we can double hearing aid utility
with induction loop technology

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Progress Toward the Looping of America—and Doubled Hearing Aid Functionality

The time has come for universal induction-loop access in America

BY DAVID G. MYERS, PhD

For Americans with hearing loss, the inclusion of telecoils in all hearing aids and the looping of America would double hearing aid functionality, increase hearing aid sales and patient satisfaction, and, most importantly, enable those of us with hearing loss to hear—to hear in countless situations where we now experience uncertainty and stress.

Many of us 8.4 million Americans with hearing loss who own hearing aids feel grateful to the hearing care professionals who enable us to hear. Without your professional support, we would increasingly live in a quiet world, bereft of the communication that transfers information from one mind to another and that helps satisfy the human need to belong and connect.

As you, in turn, seek to understand our experience, imagine yourself as a person with significant hearing loss. While seated at the theater or at worship, or standing at a ticket window, you find yourself struggling to hear. Which of these hearing solutions would you prefer? Would you want:

- 1) To take the initiative to locate, check out, wear, and later return special equipment (often a receiver with a headset or earphones that are likely incompatible with your hearing aids), or
- 2) To push a hearing aid or cochlear implant button, turning your own hearing instrument into a wireless loudspeaker that broadcasts sound customized for your own ears?

Solution 1 is the only option at most venues in the United States. Solution 2 may be found throughout the United Kingdom, Nordic countries, and now West Michigan and increasingly more American locations.

In Britain, most cathedrals and churches with public address (PA) systems surround worshipers with a magnetic hearing loop that wirelessly transmits sound to hearing aids. The hearing aids need only have

an inexpensive telecoil sensor—which is now available on most aids and implants—that also transmits telephone conversation. If I worship at Westminster Abbey, the priest's echoing voice is indecipherable. But when I activate my hearing aid telecoils, a clear voice speaks from the center of my head.

Writing while in Norway, one acquaintance who hears with a cochlear implant e-mailed recently:

We were lucky enough to get tickets for Swan Lake at the new Oslo Opera House. I noticed that it had been looped for T-coil. I flipped the switch on my processor, and the sound came in beautifully. ...“All the churches have them,” the organist at the Stavanger Cathedral told me yesterday...Sure enough, when I switched on the T-switch, the sound came in so clearly that I was sure I could have understood every word of the minister had she not been speaking Norwegian.

In recent years, modern versions of



FIGURE 1. Sign announcing telecoil compatibility at the Grand Rapids Airport in Michigan.



David G. Myers, PhD, (davidmyers.org) is a professor and social psychologist at Hope College in Holland, Mich, who has a hearing loss and is one of the nation's foremost advocates for making induction loops a universal technology. He is also the author of the book *A Quiet World: Living with Hearing Loss* (Yale University Press) and creator of hearingloop.org.

this classic technology have also spread to smaller British venues—including 11,500 Post Office Ltd branches and thousands of ticket windows, bank teller stations, and tourist information counters. In London taxis, a dashboard microphone picks up the driver's voice and transmits it to a backseat hearing loop.

Thanks to a recent initiative, hundreds of West Michigan venues, including most churches and Grand Rapids' convention center and airport, now broadcast wireless sound to hearing aids. "Never in my audiology career has something so simple helped so many people at so little cost," reported Jerry Owens, AuD, the former owner of my city's largest audiology practice.

As one user explained, after a hearing loop was activated in his place of worship, "The experience of actually hearing such clear sounds was thrilling and hard to describe. One has to experience the improvement. It seemed overwhelming."

This person's experience has been repeated over and over. One skeptic from another state undertook due diligence to assess the suitability of a hearing loop for his own church:

I can certainly attest to the spread of the loop system in Michigan. Before we installed our [church's] system I telephoned a number of facilities listed by a loop vendor as having installed such a system. I was amazed to discover that not a single installed site had anything but vociferous praise for the product! One would expect at least one nay-sayer in a group that large (22). But there was not a single one!

I understand. My hearing aids now serve me as customized wireless loudspeakers whether I'm watching the evening news in my looped home TV room, at worship in my church, or awaiting an airline boarding announcement at my home airport in Grand Rapids (Figure 1). Thanks to their doubled functionality, I now love the hearing aids I once barely tolerated.

I am comfortable with technology and could afford any of today's high-end wireless hearing technologies. I welcome near-field induction devices that directly connect hearing aids to phones and music players. Often in conjunction with telecoils, these devices offer another layer of higher assistive technology. Yet, I also appreciate why so many people, who often are older users, appreciate the low cost and simplicity (ie, no special equipment to master or take along) of telecoil-enabled assistive listening. Moreover, momentum is shifting toward hearing aid compatible assistive listening.

Dispensing Professionals Using Hearing Loops in Their Practices

California audiologist Bill Diles provides home TV room loop installations—10 to 15 a month, in more than 1600 homes

to date—with the purchase of new hearing aids. With hearing aids now also serving as customized loudspeakers, the result has been many happier customers, fewer returns of hearing aids, and many new word-of-mouth patient referrals. In a patient survey, Diles documented a huge increase in patient satisfaction not only with TV listening but also with their hearing aids. Diles notes that "Since the loop is a hearing aid compatible solution—as opposed to headphones, which are incompatible and compete with our core product—it gives patients one more reason to enjoy their hearing aids."

Other audiologists are similarly integrating hearing loops into their practices. Gyl Kasewurm, owner of a large southwest Michigan audiology practice, has initiated loop installations in her community and reports that, "Due to the positive feedback we have received, we are now including loop systems at no additional charge with the purchase of new hearing aids!"

Michigan audiologist Peg Simon and her engineer-husband Terry Simon now own Wireless Hearing Solutions by inLOOP, which is conducting training seminars for hearing professionals nationwide—382 in 2009—on how to integrate hearing loops into their practices. Recognizing that most hearing professionals will want others to do the installations, Wireless Hearing Solutions also trained nearly 100 installers in 2009.

Wisconsin audiologist Juliette Sterkens and her engineer-husband LeRoy (Max) Maxfield have formed a company that is introducing hearing loops across their state. Sterkens also is reaching out to other hearing care professionals and audio firms, and is speaking to state and national meetings of audiologists and people with hearing loss and blogging her experiences at betterhearing.org/blog (see sidebar by Dr Sterkens).

University of Florida audiology professor Patricia Kricos, PhD, "enthusiastically supports" hearing loop initiatives, which she anticipates promoting during her upcoming year as American Academy of Audiology president (see sidebar by Dr Kricos). And, in a first-ever joint educational initiative, the AAA and the Hearing Loss Association of America (HLAA) in early 2010 announced a col-

laborative project to educate hearing care professionals and consumers about telecoils and how to use hearing aids as wireless receivers with telephones and assistive devices. The initiative envisions online and hard copy presentations and articles, culminating in an international conference.

Hearing Instrument Manufacturers Are Incorporating Telecoils

I'm periodically asked, "What percentage of today's new hearing aids come with telecoils to receive telephone and hearing loop magnetic signals?" A decade ago, 30% was the common estimate. Recently, two national surveys of hearing care professionals both reported 62%.^{1,2} This increase is due partly to the surge in behind-the-ear (BTE) aids, most of which come with telecoils. People with significant hearing loss and the greatest need for hearing assistance usually wear BTEs, which explains why 84% of members in an HLAA survey reported having hearing aids with telecoils.³

The hearing industry recognizes the value of these systems. Although not all new mini-BTE open-fit hearing aids come with telecoils, Widex A/S CEO Jan Tøpholm reports that his company has taken requests "to build t-coils into future small instruments very seriously, and we have already taken them into consideration in future designs." Another example is a new hearing instrument model, the Klik from Ear Technology Corporation, which actually offers two telecoils: one with optimum orientation for telephones and one for induction loop systems (although some experts argue that one telecoil, if given a sufficient vertical orientation, can effectively serve both functions). The March/April 2009 *Hearing Review Products* offered a technology guide to in-the-ear (ITE) hearing aids marketed by a dozen companies (Audifon, Audina, Bernafon, Oticon, Phonak, ReSound, Rexton, Siemens, Sonic Innovations, Starkey, Unitron, and Widex).⁴

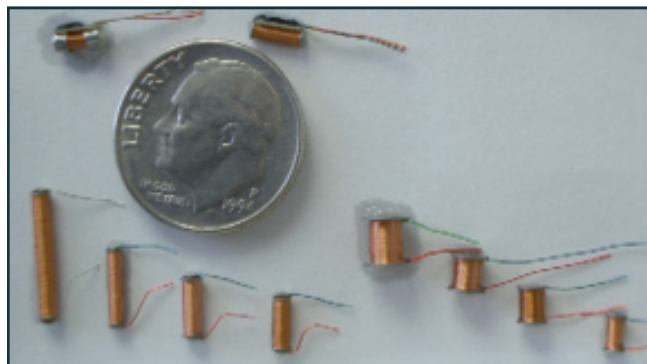


FIGURE 2. Size of telecoils. Photo courtesy of Tibbetts (now IntriCon Tibbetts).

Voila! All 35 ITE models (100%) are now available with telecoils. New cochlear implants are also coming with telecoils.

Happily, hearing loops can serve 100% of people, including those without telecoils or even without hearing aids. That's because loop systems, like other assistive listening systems, also come with portable receiver/headsets (though fewer folks, at the point of their need, take the initiative to get up, locate, wear, and return such equipment).

National and Worldwide Hearing Loop Initiatives and Endorsements

US initiatives. Consumer-led, grassroots initiatives are spreading across the United States. Here are a few examples:

- Rochester, NY, was a pioneering city, with its many looped places of worship.
- Tucson's Adult Loss of Hearing Association (www.alohaaz.org) has led a successful "Let's Loop Tucson" initiative. Arizona's legislature has supported increased hearing aid functionality with a legislative bill, signed by the governor, requiring hearing care professionals to inform their patients about telecoils when purchasing hearing aids.
- Albuquerque's Hearing Loss Association (abqshhh.homestead.com) is promoting a "Let's Loop New Mexico" initiative.
- In California, the Hearing Loss

"For a number of years I have followed David Myers' efforts to loop America and I have given numerous presentations at state and national levels to encourage my fellow audiologists to embrace the looping initiatives



Patricia Kricos, PhD

for which he has so ardently advocated. One of the major issues I plan to highlight during my year of leadership (July 1, 2010 through June 30, 2010) for the American Academy of Audiology will be the importance of accessibility for people with hearing loss. The Let's Loop America endeavor has accomplished so much to increase accessibility, and I look forward to helping reduce the barriers to access that many people with hearing loss experience on a daily basis." ▶

—Patricia Kricos, PhD,
President-Elect of the
American Academy of Audiology (AAA)

Are we missing an incredible opportunity to help our patients hear—and to grow our industry?

By Juliette Sterkens, AuD



Juliette Sterkens, AuD

Having been in the hearing healthcare field since 1976, I know how we all bend ourselves in pretzels daily trying to help our patients hear better through the use of hearing aids. As an audiologist, I also know that the directional microphone, though effective in near-field noisy situations, rarely helps those whose hearing deficit is complicated by auditory processing challenges or in reverberant places, such as places of worship and airports. People with hearing loss need a signal-to-noise improvement that cannot be obtained with even the highest-tech hearing aid. This is a physics and processing problem that no hearing aid can be expected to overcome.

In late 2008, after I heard Dave Myers speak, it dawned on me that hearing loops would greatly benefit my patients. So I started a small looping business (Fox Valley Hearing Loop) with my engineer-husband LeRoy "Max" Maxfield. First, we installed a demonstration loop with a flat-screen TV in my office waiting room. I then convinced a community foundation to help fund a loop at our local convention center that was being remodeled.

This modest success was followed by almost weekly speeches at Rotary, Kiwanis, and Lions clubs to create awareness for the difficulties my patients continue to experience even with their well-fitted hearing aids. I also approached patients, ministers, and several large churches, explaining loop benefits. Several loop installations followed and this has literally snowballed to over 30 installations—and the referrals and requests for loop site visits keep coming in.

I have also reached out to audiologists, dispensers, ministers, HLAA groups, and audio companies across the state. This outreach has led to newspaper articles and invitations to speak to the state HLAA meeting, the Wisconsin Alliance of Hearing Professionals, the Wisconsin Speech Language Audiology Association, and give workshops for ministers. Thanks to the support of people like Terry Simon (Wireless Hearing Solutions by inLOOP) and Richard McKinley (Contacta Inc), audio engineers and installers have been trained, and Wisconsin is now uniquely positioned to start a statewide "Loop Wisconsin" initiative.

It has been my experience that hearing loops offer patients significantly improved hearing and understanding, sometimes even in situations where normal-hearing people have difficulty. Using the T or MT program is easy: patients need only "push a button." The resulting hearing delights my patients, triggering previously unheard words of appreciation for their hearing aids. As one person who has a severe sensorineural hearing loss told us after she used the T-coils for the first time while worshiping in her newly looped reverberant church: "What I experienced last Sunday was nothing short of a miracle. For the very first time in many, many years, I was able to hear every single word said in church along with every note of music." Moreover, these happy patients have persuaded and referred several others who also want to hear better in church.

This is good news for the hearing industry: the greater the functionality of and satisfaction with hearing aids the more likely people are to buy them. From a pure business perspective this makes sense. Given hearing loops in home TV rooms and public places, we hearing care professionals can delight our customers with a low cost, low tech solution: a simple T-coil.

What are we waiting for? No matter how many real-ear tests we do, what type of vents we drill, how many CEUs we obtain, how many customer surveys we do, or what kind of wonderful coffee and cookies we offer in our waiting rooms, if we don't make our patients hear well in church and other public places, they will not be totally happy!

I have witnessed patients speak in the front of the church with tears of happiness how they can hear again with their hearing aid in a loop. That brings me back to my real reason I have become a loop advocate: I want to help my patients hear better! ▶

Juliette Sterkens, AuD, is co-owner of Fox Valley Hearing Center in central Wisconsin, where she has practiced since 1983.

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Association of Silicon Valley (www.hearinglosssv.org) is advocating looping. Same for California's state Hearing Loss Association (www.hearinglossca.org): "In all new and extensively remodeled buildings, wherever there is a public address system, a loop should be permanently installed...When there is a loop, all a hard of hearing person has to do to be able to hear, is click on the T-switches on their hearing aids."

- Michigan's Hearing Loss Association (www.mi-shhh.org) advocates the functionality that hearing loops offer, by recommending "that Michigan's public places, as defined by the *Americans with Disabilities Act (ADA)* ... and where sound is broadcast, install assistive listening systems that broadcast directly through hearing aids and cochlear implants..."
- Starting in the Spring of 2010, the civic organization Sertoma (SERvice TO Mankind, www.sertoma.org) and its newly established Hearing Charities of America (www.hearingcharities.org) will undertake a national hearing advocacy campaign. "A centerpiece of this 'Sound Investment' campaign will be supporting local volunteers in our 540 clubs to advance the looping of America," reports Sertoma Executive Director Steven Murphy.

Worldwide initiatives. As mentioned earlier, hearing loops are in thousands of venues across the Nordic countries and the UK. The first international "Hearing Loops" conference, hosted in late 2009 by the European Federation of Hard of Hearing People (www.efhoh.org) for attendees from 15 countries, adopted a resolution recommending that:

- 1) Hearing aid manufacturers, manufacturers of cochlear implants, physicians, audiologists, and hearing instrument specialists shall communicate the benefits of hearing aid/cochlear implant telecoil receivers for phone listening and assistive listening, and educate people who are hard of hearing accordingly.
- 2) Venues and service points where sound is broadcast shall offer assistive listening, such as induction loop systems designed to the IEC 60118-4:2006 standard, that broadcast sound directly to hearing aids and cochlear implants, enabling them to serve as customized, wireless loudspeakers (without the need for extra equipment).⁵

The HLAA has long supported hearing aid compatible phones (which communicate interference-free sound to telecoils). It has declared that, "It is the position of [HLAA] that telecoils be given the prominence they deserve as a valuable hearing aid feature that will allow the expanded use of assistive listening devices."⁶ Britain's Royal National Institute for Deaf People (RNID) adds that "Induction loops are vital to ensure accessibility for hearing aid wearers," and offers suggestions for installing and checking them.

Responding to these developments, *Scientific American*, in an online article and in its January 2010 issue,⁷ explained hearing loops and their growing adoption as a technology news story.

Hearing Loop Vendors on the Increase

If hearing aid compatible assistive listening is to become widely available, there must be manufacturers producing and selling the needed equipment, and trained audio engineering firms to install it outside of simple home installations. In response to the growing consumer demand for hearing loops and to the increased use of telecoils, audio entrepreneurs are indeed offering new lines of loop equipment and training local audio engineers.

The equipment vendors include longtime providers

Hearing Loops in New York City

Thanks, in part, to the leadership of New York City's Hearing Access Program, hearing loops are found in more and more venues, including Ellis Island, Temple El-Emanuel (the world's largest Jewish house of worship), and the Chrysler Museum auditorium.

In September 2009, the city's Taxi and Limousine Commission, after a test period with 13 taxis, approved the voluntary installation of hearing loops in all its licensed vehicles. If fully implemented over time, noted Janice

Schacter, Hearing Access Program founder and chair, "No longer will a person who is hard of hearing have to worry that they will end up in NOHO when they wanted SOHO."



FIGURE 6. NY Yankees ticket booth.

such as at some Yankee Stadium ticket windows, in selected HSBC banks, and at National Park video presentations. Some museums, including the Kentucky Derby Museum and the Dayton Aviation Center, have also added hearing loops. **► —DGM**

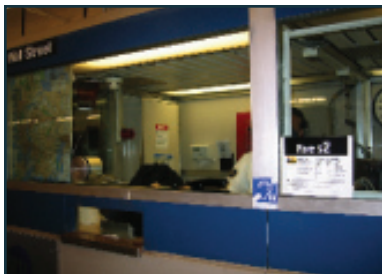


FIGURE 5. Wall Street train station.

In early 2010, the New York City Transit Commission announced the installation of hearing loops in 488 subway information booths. This initiative, financed with federal stimulus monies, promises to make assistance more accessible, noted Schacter, whose initiative helped introduce the concept to transit officials. As Barbara Bryan, a hard of hearing New Yorker reported after experiencing this wireless assistive listening in a test installation at the Wall Street booth, "It is a beautiful experience to go to such a booth and be able to hear so well and so clearly! It is really rather amazing when one is accustomed in such situations to catching only a low percentage of what is being said."

The Hearing Access Program is also working to introduce hearing loops to other transient venues,

Ampetronic, a British company whose products are marketed in the United States by Assistive Audio, and American manufacturer Oval Window Audio. Newer entrants into the American market include Univox products produced by Swedish manufacturer Bo Edin, and British products made by Echo@MegaLoop and Vivid Acoustics. Seeing opportunity, three new American companies are now manufacturing loop systems: Contacta Inc. (in partnership with UK-manufacturer Contacta), LoopAmerica, and inLOOP. Pan-Oston, the leading supplier of grocery-store checkout equipment, is introducing a loop device ("Shop Hear") for installation "at the service desk, check-in counter, customer service desk, in-store pharmacy or anywhere people need to hear your message."

Although audio engineering firms remain largely unaware of the benefits of loop systems, some are discovering what

Ascom President Todd Billin explains:

What we did not consider was the influence consumers could make on this technology. When individuals with hearing loss had a chance to experience the hearing loops or talk to someone who had, the demand for both hearing aids with telecoils and loop systems increased dramatically. After installing our first loop system and seeing the reaction from the individuals with hearing loss, we immediately shifted our sales focus to loop systems.

Looking to the Future

Transforming assistive listening, with something approximating wi-fi for hearing aids, addresses two huge problems with America's currently predominant assistive listening systems, which require special equipment:

1) The equipment seldom gets used—"about once per month per theater," a manager at my community's biggest the-

ater complex told me. (People with hearing loss almost universally hesitate to assert themselves and make a fuss.) Our West Michigan experience is that, when venues install hearing loops, many more people benefit. At my church, the one person using our old technology quickly multiplied to 10 known people using the invisible hearing loop.

2) Special checkout equipment is not feasible in transient venues, such as pharmacy counters, airports, and ticket booths. That reality was appreciated by Hearing Access Program chair, Janice Schacter, when suggesting the possibility of hearing loops for New York City taxis, limousines, and subway information booths—a dream that is now becoming a reality (see sidebar).

Better Hearing Institute (BHI) Director Sergei Kochkin notes that only about 1 in 4 Americans with hearing loss have hearing aids.⁸ He notes that the surest way to decrease the stigma of hearing aids and to increase their use (making them for the ears as routine as glasses for the eyes) is to increase their functionality: "Clearly the utility of hearing aids must be improved if we are to achieve wider-scale acceptance of hearing aids as a solution to hearing loss."⁹ Kochkin envisions a future with "miniaturized internal wireless receivers in every hearing aid." He also has quantitatively shown that increasing the utility of hearing aids will result in more hearing aid sales, positive recommendations, and brand loyalty from hearing aid users.

To fulfill Kochkin's vision with wide applicability, such technology needs to be inexpensive, miniaturized (able to fit in small hearing aids), demanding little or no battery power, and able to cover large areas with a universally received signal. Today's hearing loops and telecoils are all these things, which explains their widespread adoption in the Nordic countries and the UK.

For Americans with hearing loss, the inclusion of telecoils in all hearing aids and the looping of America would double hearing aid functionality, increase hearing aid sales and patient satisfaction, and, most importantly, enable those of us with hearing loss to hear—to hear in countless situations where we now experience uncertainty and stress. **►**

References

References are provided in the online version of this article at www.hearingreview.com.

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