



Effective October 2010, Michigan State University's Breslin Center arena added hearing loop coverage of 12,200 of its 14,759 seats (excluding bleachers) for basketball and special events.

IN THE LOOP

Helping the growing population with hearing loss.

BY DAVID G. MYERS, PhD, & JULIETTE STERKENS, AuD

Momentum is accelerating toward a new world of assistive listening for Americans with hearing loss. We refer to the mushrooming support for induction loops (aka “hearing loops”), which transmit a magnetic signal to the telecoil (T-coil) receiver that now comes with most hearing aids and all new cochlear implants. With nothing more than a push of a button, the hearing instrument becomes a wireless loudspeaker.

Becoming More Common

Until recently, hearing loops have been largely unknown in the US, though they are now in tens of thousands of British and Scandinavian venues, from home TV rooms, to the back seats of all London taxis, to public venues ranging from ticket windows to cathedrals. But consider these new developments:

- In September 2009, a first-ever International Hearing Loops Conference, convened by the European Federation of Hard of Hearing People for attendees from 15 countries, concluded with a resolution advocating hearing aid-compatible

assistive listening: assistive listening that, with no need for extra equipment, transmits wireless signals directly to most hearing aids and cochlear implants.

- In the Summer of 2010, the Hearing Loss Association of America (“the nation’s voice for people with hearing loss,” www.hearingloss.org) and the American Academy of Audiology (the world’s largest association of hearing professionals, www.audiology.org) jointly launched a “Get in the Hearing Loop” initiative. The campaign’s purpose is to encourage consumers,

Hope College social psychologist David G. Myers is the author of A Quiet World: Living with Hearing Loss (Yale University Press) and the creator of www.hearingloop.org. Audiologist Juliette Sterkens has practiced in Oshkosh WI since 1983 and owns Fox Valley Hearing Loop with her husband, LeRoy “Max” Maxfield.

audiologists and other hearing professionals to “get in the loop” for hearing assistive technology, with a primary focus on hearing loops and telecoils, in order to improve accessibility for the 36 million Americans with hearing loss. The campaign will culminate in the Second International Hearing Loop Conference in Washington DC (hosted by The Hearing Loss Association of America, June 18-20, 2011), where attendees will learn about the technology, installation techniques, the user perspective, the integration of loop technology with FM and infrared systems, and the status of hearing loop installations in the United States and elsewhere.

- Sertoma (“Service to Mankind,” www.sertoma.org), a national service organization with 540 clubs in local communities, has launched an effort to bring hearing loops to their communities across America.

State & Local Initiatives

- State and local community initiatives, mostly spearheaded by organizations representing people with hearing loss, are popping up across America. A West Michigan initiative led to the looping of several hundred venues, including most worship facilities in Holland and Grand Rapids, and many public auditoriums and businesses.

Community initiatives are also promoting the technology in Wisconsin, Arizona, New Mexico, Rochester (NY) and Silicon Valley (hearingloop.org offers links to each). New York City Transit, with support from federal stimulus monies, is adding hearing loops to 488 subway information booths.

- Looped venues range from one person (via an individual neck loop) to home TV rooms to both concourses and all individual gate areas of Michigan’s second largest airport to, as of October 2010, Michigan State University’s Breslin Center arena for basketball and special events.

- In response to the growing consumer demand for hearing loops, several new American hearing loop companies have begun manufacturing or distributing equipment (see hearingloop.org/vendors.htm). New develop-

ments in this decades-old technology now enable control of unwanted sound spillover to adjacent rooms and strong, equal coverage even in metal-laden modern facilities.

Other Systems

Other assistive-listening systems are easier to install, at less cost. So why are the organizations that represent audiologists and people with hearing loss now urging sound engineering firms to install hearing loops? There are several big reasons:

- First, people with hearing loss *require more than just volume*. Hearing loss typically reduces the brain’s ability to process auditory information. Even when fitted with state-of-the art hearing instruments, persons with hearing loss still require signal-to-noise ratios of 15dB to 20dB in order to obtain reasonable levels of speech intelligibility.

At best, hearing aids can deliver an SNR improvement of 3dB to 6dB, which, therefore, is insufficient in places with reverberation and ambient



In 2008, Gerald R. Ford International Airport in Grand Rapids MI became America's first airport to provide hearing loops throughout its concourses and in each individual gate area. Installation for the airport and Michigan State University's Breslin Center was done by Hearing Loop Systems.

noise. Hearing loops take the desired speech signal straight from the basic source (the microphone) and broadcast directly to the listener's hearing aid(s). The signal at the listener's ears is free from distance issues, reverberation and ambient noise interference.

- Second, hearing loops *harness the technology of people's hearing instruments*, thus often providing sharper sound. In contrast to a headset that provides the same generic audio to everyone, a hearing loop delivers *customized sound*: sound that is programmed in light of a specific individual's hearing loss. This way, two persons with greatly differing hearing loss (a low frequency versus a high frequency loss, for example) both will receive what they need through their individually programmed hearing aids.

Added Benefit

An added benefit is that most hearing aids now allow for either a T-coil program only (where no background noise is heard by the listener) or a combined mic+telecoil (MT) program that allows nearby ambient sounds to be heard. When watching television through a



hearing loop, for example, listeners enjoy sound broadcast via their own hearing aids, while also being able to converse or hear the phone ring.

- A third reason is that people with hearing loss are *much more likely to use* listening assistance that is directly hearing aid-compatible. When people with hearing loss find themselves in situations where they are unable to hear a lecture, sermon or play, will they take the initiative to get up, locate, check out and wear a receiver and headset? They should, but they don't. Thus, most assistive-listening units in theaters, worship places and auditoriums sit unused.

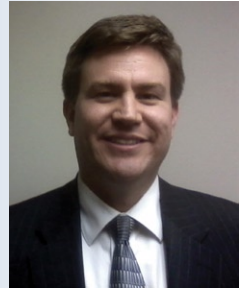
If, however, the listening assistance requires only the inconspicuous push of a button, people will do so gladly. This means that, often, despite a hear-

Letter Of Recommendation

Greetings Fellow Clergy:

It is with pleasure that I write to you about my congregation's experience with installing and using a hearing loop.

Through April 2009, Martin Luther congregation in Oshkosh WI used an FM sound system for hearing assistance, with users wearing receivers and using headphones. With this system, we



had about three users, and they often were frustrated with the sound level not being acceptable or the batteries being worn out.

I'm sure that you are familiar with comments about not being able to hear. We also were receiving such comments, seemingly in increasing numbers. So we began to investigate better microphones, better speaker placement and hearing loops. We left the speakers alone, but I am now using a headset microphone, which helps greatly with our members' hearing. Then, after speaking with Juliette and Max [of Fox Valley Hearing Loop], we decided to put in a hearing loop, too. And after explaining to the congregation the benefits of a hearing loop, funds for installation came in within the week, both from people who needed hearing assistance and people who didn't.

Now, with the hearing loop, I estimate we have about 15 to 20 loop users. Because each person's hearing aid is tuned to his or her needs, the audio of our service comes through loud and clear for everyone. Also, the frustration is gone from those who struggled with the previous wireless system. Now we are looking into also looping our Bible classroom and adding passive classroom microphones so everyone can hear the discussion.

Wouldn't a hearing loop be worthwhile even if it only benefited one person? But we have many people to reach: the elderly who are hard of hearing; the member who has stopped coming to church because she can't hear; the child with a cochlear implant. What's more, we have the greatest message to share; we want people to hear the Word!

—Pastor Nathan R. Ericson
Martin Luther Evangelical Lutheran Church,
Oshkosh WI

ing loop's increased installation costs, the cost per user is less.

For these reasons, a growing number of full-service sound and communication firms has discovered a new business and service opportunity in providing this hearing aid-compatible assistive listening. "We have now installed four loop systems in churches," reported Steve Roth of Roth Electric Sound in Mt. Pleasant MI. "The users love them."

Skip Spackeen, of AV Innovations in Tucson AZ, has installed 20 loops, "from small rooms to a 450-seat theater." Some are simple perimeter loops around floors or in ceilings. Some are larger figure-8 loops placed in ceilings or cut into concrete or tile floors. Spackeen also offers FM systems with accessories, "but these typically seem to be underused once installed."

Greater Excitement

Typically, when a venue installs a loop, there is greater excitement, Spackeen reported: "higher awareness, higher acceptance, perhaps greater appreciation." That also has been the experience of Dana Erickson at Commercial AV Systems in Onalaska WI, when worship center installations led to reports of "elated" worshipers.

Reflecting on his 25 years as a sound contractor, Todd Billin, President of Grand Rapids MI-based ASCOM, recalls his pleasure in attending the first worship service after each of his company's installations to confirm the results. After doing his first loop installation, "The congratulations and pats on the back turned into tears of pure joy from an elderly woman." For 15 years of attending services, she had experienced great difficulty hearing the message. "On this morning, she heard and understood every word that the pastor shared, all because a small coil located in her hearing aid received the signal that my company provided. This helped me envision a new calling for my company [a new ASCOM division, Hearing Loop Systems] to help many more people experience that woman's feeling."

"The interesting fact about hearing loop systems," added Mike Mair of

Lifeline Amplification Systems in Platteville WI, "is the number of venues you can place them in. We have talked to churches, auditoriums, banks, funeral homes, businesses, long-term care facilities and many other venues. It is a great 'add on sale' for Lifeline and a way to get our foot in the door in places where it has been difficult to get business."

Echoed Experience

The audio professionals' experience is echoed by hearing professionals who

have heard from patients delighted with hearing loops in their home TV rooms or in their community. As an experienced audiologist, co-author Juliette Sterkens wondered why hearing loops, which have been so beneficial to the hearing impaired in her native country (the Netherlands) since the 1970s, had never made it to the US, and tried for years to get clients to use FM technology in theaters and churches.

Although patients admitted to hearing better with these devices, they were

reluctant to use them regularly due to the hassle of earphones and receivers. Over the years, Sterkens always kept hoping that improvements in hearing aids eventually would bring the desired hearing results. “In 2008, having been made aware of the growing number of hearing loops in western Michigan, I finally understood *why* hearing loops make so much sense audilogically: I realized that loops could also happen in Wisconsin if someone would just get it going. It soon dawned on me that I would have to be that person and I started the Fox Valley Hearing Loop Initiative.

“Thanks to my retired engineer husband, LeRoy ‘Max’ Maxfield, Fox Valley Hearing Loop has installed more than 35 loops in the last 20 months and the area will soon have more than 50 installations, including one at our newly remodeled 1888 Grand Opera House

‘Of all the AV installations we do, it’s the induction loop that receives the most positive feedback.’

**—Glenn Hall,
Bestboy Audio, Avondale PA**

and our convention center.”

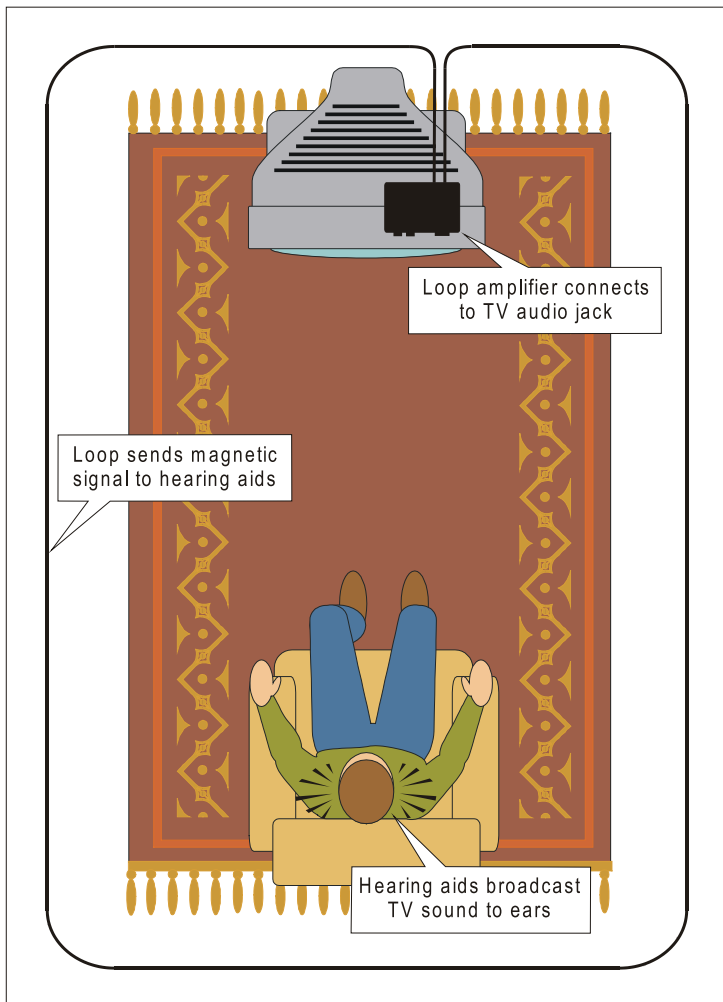
The results have been overwhelming: Clients are grateful, often admitting that they did not hear prior to a hearing loop installation. As one happy person reported, “I wore my hearing aid for the Easter Service and, to my

surprise, I heard every word the minister said. It sure made a difference to hear him instead of just sitting there wondering what he said.”

Teary Eyed

Sterkens added, “Family members approach me teary eyed, explaining how, once again, mom was able to hear in church: ‘Thank you so much for helping people with hearing aids hear better. It made a big difference to my mother-in-law last month when she was able to hear every word at the confirmation service of our son.’ Several ministers have embraced this technology almost as enthusiastically as I have, and invited me to speak at gatherings where I was asked to explain the benefits of hearing loops to parishioners, fellow clergy and church leadership committees.

“With the rapid spreading of hearing



A room loop enables people, without wearing special equipment, to have the television broadcast by their hearing aids.

loop acceptance, we now get weekly requests that our small business cannot handle. I have reached out to other AV companies, as well as to fellow audiologists and hearing professionals in Wisconsin and around the country. As a result, other communities now, too, are looking to start hearing loop initiatives. AV specialists benefit from contracting with local hearing care professionals to introduce hearing loop technology in their communities. These experiences have shown me the potential for positive synergy, almost a symbiotic relationship between AV and hearing care professionals.”

One skeptic undertook due diligence before recommending a hearing loop for his church: “Before we installed our [church’s] loop 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 naysayer in a group that large [22], but there was not a single one!”

Media Recognition

In 2010, various media began reporting on the movement to transform American assistive listening and to double hearing aid functionality. *Scientific American*, *Redbook* and trade magazines for hearing professionals and worship centers all have reported on hearing loops. So did the September 2010 *AARP Bulletin*, which went to 24 million homes. And so have regional newspapers, including the *Chicago Tribune* (in a front-page story), the *Charlotte Observer* and the *Arkansas Democrat Gazette*. NPR dedicated the lead segment of its July 2, 2010, *Talk of the Nation: Science Friday* to hearing loops, complete with audio examples (available at hearingloop.org) of a Grand Rapids airport announcement as heard with and without the airport’s hearing loop.

To empathize, audio professionals might imagine themselves as someone with hearing loss. You are at a movie, in a worship center, listening to a lecture or standing at a ticket window, struggling to carve mean-

ing out of sound. Which of these hearing solutions would *you* prefer?

- to leave where you are to locate, check out, wear and return special equipment (often, either a conspicuous headset or earbuds that have been in others’ ears)? Or,
- simply to activate your hearing instruments’ telecoils, thereby transforming them into wireless, in-the-ear loudspeakers that broadcast sound customized to your own hearing needs?

Britain and Scandinavia now over-

whelmingly offer the second option. In America, leaders among those who represent people with hearing loss and the professionals who serve them are now advocating the same. As we approach a tipping point where new assistive listening will be mostly hearing aid-compatible, audio and hearing professionals are working together to double hearing instrument functionality. For those of us with hearing loss, such work exemplifies business at its best: doing good while doing well. ■