

The Debate

Hearing Loop Systems vs. IR or FM Systems

By Richard McKinley

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For many years, Assistive Listening Systems (ALS) consisted of Infrared (IR) or FM systems. IR and FM were the more common choice of ALS because it was a simpler way to meet legal requirements for providing hearing access and unfortunately these systems were infrequently used because they were not convenient and failed to consider the dignity of the end user. These would require the user, and individual with hearing loss, to wear a special device known as a loop receiver with either headphones or a neckloop. Neckloops are worn around one's neck and used if a person wanted to use their hearing aids. That has all changed now due to technological advancements in hearing loop technology.

MY STORY

Before getting involved with hearing loop systems, I owned a sizable AV firm that installed and repaired FM Assistive Listening Systems for churches and other venues in the area. I often heard the comment relating to an ALS, "Why put it in, no one uses it?" Many times, the ALS was taken out of the sound contract in the end, due to lack of funding and support. In my own worship center with 30 hearing aid wearers only one person used the system and the rest sat in attendance missing most of the service. There are a number of reasons hearing loop systems are preferred over IR and FM systems, but first I would like to explain why I have dedicated my career to improving the quality of life for individuals who live with hearing loss and use hearing aids or cochlear implants.

The word I have come to champion is *dignity*. I still remember opening up assistive listening boxes about 15 years ago and finding headphones with bright orange ear cushions in the boxes. After getting over the shock of seeing bright orange headphone cushions, I asked the manufacturer why they were so bright. I was told the bright color was used as a deterrent so users would not "run off" with the headphones. To me, that is no different than putting flashing neon lights on a wheel chair ramp drawing attention to a person with a disability for others to socially stigmatize. Perhaps I am being a bit dramatic but the point is still the same. In either case the person is not being allowed access to a program with DIGNITY and respect.

WHY SOME VENUES STILL INSTALL FM OR IR SYSTEMS

With all the various benefits of hearing loop systems, you might ask, why do some venues still install IR or FM systems?

- The first reason is purely initial installation cost and this is only true if one takes out the factors like maintenance costs and more importantly cost per user. In a large local worship facility, when a hearing loop system was installed, ALS users increased nearly 60 times and later we will discuss why.
- The second reason is lack of education and understanding. Architects have a very tough job to do and are required to include ALS in many of their designs. Yet, sadly for many years they have

been led to believe that IR and FM systems are the best solution for providing hearing access. This is because Architects may have had very little training on all types of ALS and/or involvement with the end users. This is simply not true and one must remember that while IR or FM systems are the least effective and used systems, they are the easiest and cheapest to install.

REASONS WHY HEARING LOOP SYSTEMS ARE SUPERIOR TO IR OR FM SYTEMS

1. Hearing Loop Systems ***do not require pick up or return of a receiver and/or related accessories.*** I attended a play in the Seattle area with some hearing instrument users that did not have a hearing loop system installed. Sadly, the IR receivers did not work and had to returned. The replacement receiver was no better as it had a crackly connection. The neck loops offered were dirty so no one wanted to wear them. If a hearing loop system would have been installed, our group would have sat down and enjoyed the performance without the hassle of requesting several receivers and rejecting the unclean neckloops. After the performance, we approached the theater manager to let him know of the condition of the IR receivers and he, not surprisingly, informed us that the IR receivers were a nuisance and that other guests complain about them.
2. Hearing Loop Systems have been ***able to reduce the number of receivers needed required by law*** in most venues. The Americans with Disabilities Act (ADA) requires a certain number of receivers based on the number of seats in the audience. A major percentage of ALS users wear hearing aids and statistics show that of those with moderate to profound hearing loss over 80% know they have the T-Coil feature. Also, today a direct hearing aid compatible system is required and neck loops for FM/IR are only about 30% effective, high maintenance, and a potential hygienic concern if not maintained properly.
3. Hearing Loop Systems ***utilize a universal frequency and provide hearing access the same way wherever they are installed.*** Therefore, they work at airports, ticket windows, train, bus, service counters and grocery check outs where handing out and getting back an IR or FM receiver is impossible.
4. ***In large venues, Hearing Loop Systems, often sound much better.*** ALS system complaints often come from audio delay issues. The complete ear is not blocked and sound from speakers often arrives at a different time from the sound in the headphones which causes the perception of an echo. In a good hearing loop installation, the audio will be delayed to the seats so that the house audio arrives at the same time as the ALS audio.
5. ***Hearing Loop Systems are hygienic.*** There are no hygienic concerns when one uses their hearing instrument and/or cochlear implant as the receiver. I have seen dirty ear cushions or yellowed ear buds handed out to patrons and neck loops that look worse than a collar on a white shirt worn on many occasions.
6. ***Hearing Loop systems are both directly hearing instrument and/or cochlear implant compatible and have receivers with headphones available*** for those who do not have hearing aids yet or are second language users.
7. ***Hearing Loop Systems allow the user flexibility*** often lost with head phones. The user can set up their hearing devices for combinations of microphone and T-Coil inputs.
8. ***Headphones do not work with hearing instruments.*** I remember sitting in a theater where the patron behind me, a hearing instrument user, utilized an FM receiver with headphones. He

preceded to take his hearing instruments out and lay them on the seat next to him. The hearing instrument emitted an audible soft but constant squeal during the entire program. In addition, the volume of the headphone needed to be quite high to compensate for the patron's hearing loss which resulted in my perception of muffled audio from the performance coming from behind me. After the program we both had the same complaint of terrible sound.

9. The hearing loop system by means of one's hearing aids **delivers a personalized in-the-ear sound** tuned for the individual's hearing loss and gives them the best possible experience

Finally, for all of the above reasons and the fact that one's dignity is not compromised, hearing loop systems are far more likely to be used the FM or IR system.

MYTHS

There is a high level of background noise, therefore an FM or IR system must be used. Too often we forget that in 99% of the cases high EMI or background noise issues are also electrical safety issues. Hearing loop system installers have been very successful in finding sources of EMI and resolving them.

FM and IR are better in larger facilities like arenas or sports venues. To be truthful if one really cares about the ALS user then hearing loops are the only way to go. For large venues it is impossible to control audio delay times properly and often the sound in the ALS is confusing when mixed with a small amount of the ambient sound. Very few facilities have the staff or the means to properly test and support a large number of FM/IR boxes, so therefore they get locked away and never used.

Infrared Systems are essential for courtrooms, council chambers etc. where confidentiality is critical. With today's new designs and equipment this is no longer the case and it is very easy to make a case for hearing loops over IR systems in confidential areas considering all the maintenance and troubleshooting. I have yet to come across court room where I could not stand 3 to 5 ft outside the room and hear what is going on. Today we can design hearing loop systems where the sound drop off can build into the design of the loop and easily created to enhance confidentiality. Also, many courts and city facilities require a person to register many hours or days ahead of time noting their need for assistance and then the facility tries to get it working. With a properly designed loop system this whole registration process is not required. We have also looped many jury boxes making hearing loss a non-issue during jury selection.

Bluetooth will take over soon. This or some other technology may prove to be a better path sometime down the road, but at the present these technologies are proprietary and expensive. At a recent conference I was shocked to hear that only a few percent of all hearing instruments came with the special devices. Overall good hearing access requires low cost, easy use and that it is universal. Someday there will be another method but not in the near future.

Sincerely,



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**GET IN THE
HEARING
LOOP**

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