

ASSISTIVE LISTENING

Understanding the **Americans with Disabilities Act**

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This information is provided for general guidance and should not be considered a substitute for legal advice or legal opinions. You should always obtain legal advice that is specific to you and your situation. We always recommend that you review the code with your local authorities. Keep in mind that this information may not account for the latest legal developments or other specific circumstances that might pertain to your situation.



Hearing Loss: The Invisible Disability

One in five people worldwide live with hearing loss – that’s more than 1.5 billion people.¹ There are a variety of factors that cause hearing loss including, but not limited to: congenital, illness, injury, aging, and progressive loss due to excessive or prolonged exposure to loud noise.²

People with hearing loss are often overlooked and underserved. While most people know someone with hearing loss, they are often unaware of available assistive listening options. Many individuals with hearing loss avoid social activities such as attending theaters, concerts, and worship services because these environments pose significant challenges for them. One critical aspect often misunderstood about hearing loss is that hearing aids, although effective in quiet settings, have limitations. They amplify all sounds, including echoes, background noise, and distractions like paper shuffling and coughing. In many scenarios, hearing aids are not enough. What people with hearing loss truly require is a better signal-to-noise ratio – it isn’t helpful to just increase the volume.

Some people are either unaware of or unwilling to admit their hearing loss, while others are unaware of the resources available to them. Almost anyone can easily explain the purpose of a wheelchair ramp, wheelchair signage on doors, or signs translated into Braille, but assistive listening and other resources available for those with hearing loss are less well-known.

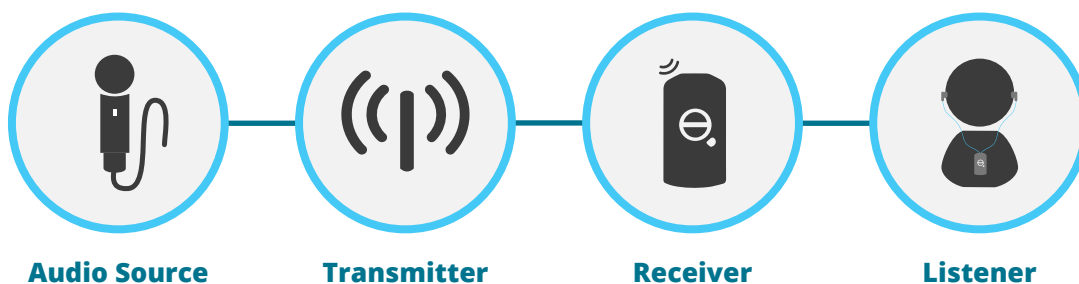
ONE IN FIVE



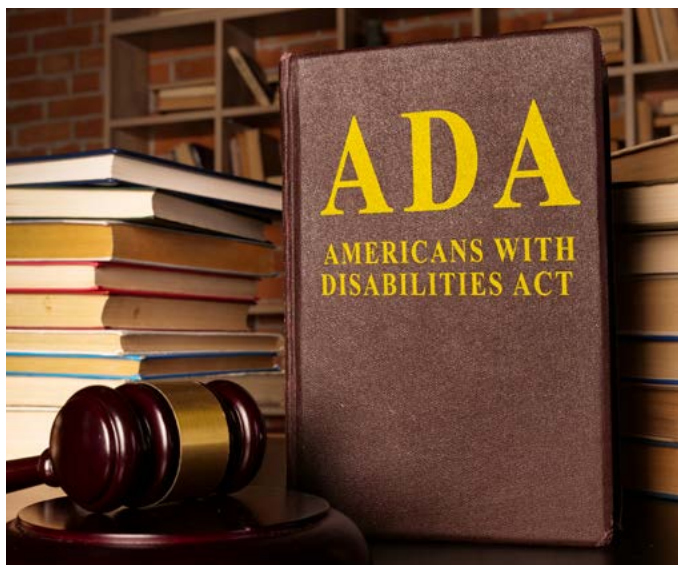
People live with hearing loss.

What is Assistive Listening?

An assistive listening system (ALS) allows listeners to engage, connect, and feel included by delivering audio directly to their ears without amplifying ambient noise. Assistive listening is the use of technology designed to improve the experience for individuals who are hard of hearing by transmitting audio directly to the listener. This audio, which can originate from a microphone, auxiliary output, computer audio, or another audio source, is sent via a transmitter to a receiver, also known as an assistive listening device (ALD), that then delivers it directly to headphones, hearing aids, or cochlear implants, allowing the listener to hear with clarity.



No level of amplification system is a substitute for an assistive listening system.



The Americans with Disabilities Act (ADA)

The Americans with Disabilities Act (ADA) was enacted in 1990, making it illegal to discriminate against individuals with disabilities in various domains, such as employment, transportation, public accommodations, communication, and access to programs and services offered by state and local governments.³ The ADA guidelines for assistive listening aim to eliminate barriers and enhance communication accessibility in public settings to accommodate those living with hearing loss. These guidelines apply to a wide range of venues.

In 2010, the Department of Justice (DOJ) published updated regulations to Titles II and III of the ADA. These regulations incorporated revised and enforceable accessibility standards known as the 2010 ADA Standards for Accessible Design. These standards established minimum requirements, in terms of both scope and technical specifications, that became mandatory for all new construction or renovations to comply with starting on March 15, 2012.⁴



When and Where are Assistive Listening Systems Required

ADA section **219.2** states:

“ In each assembly area where audible communications are integral to the use of the space, an assistive listening system shall be provided. ”

Exception: Other than in courtrooms, assistive listening systems shall not be required where audio amplification is not provided.

This means that assistive listening systems are required in assembly areas when the space uses audio amplification including rooms with television, computer, and projector audio, requires an assistive listening system. Courtrooms always require an assistive listening system, even without amplified sound.

What is an Assembly Area?

An assembly area is defined in section **106.5** of the ADA as:

“ A building or facility, or portion thereof, used for the purpose of entertainment, educational or civic gatherings, or similar purposes. For the purposes of these requirements, assembly areas include, but are not limited to, classrooms, lecture halls, courtrooms, public meeting rooms, public hearing rooms, legislative chambers, motion picture houses, auditoria, theaters, playhouses, dinner theaters, concert halls, centers for the performing arts, amphitheaters, arenas, stadiums, grandstands, or convention centers. ”

This section of the ADA defines “assembly areas” as spaces used for entertainment, education, civic events, and more. You are likely familiar with and frequent many of these types of spaces, all of which are required by law to provide accommodations for individuals with disabilities, including hearing loss.



Classrooms



Courtrooms



Theaters



Concert Halls



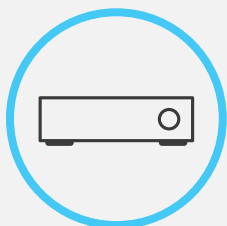
Stadiums



Convention Centers



Components of an Assistive Listening System



Transmitter



Receivers



Neck Loops



Signage

To meet ADA requirements, an assembly area must be equipped with the following: a transmitter, receivers based on the occupancy of the space, a portion of the receivers must be hearing aid compatible through the use of a neck loop, and notification signage (either at each entrance or a ticket booth).

How Many Receivers are Required?

Receivers are required in each assembly area in accordance with ADA table [219.3](#), which specifies that a minimum of twenty-five percent of the provided receivers, but no fewer than two, should be hearing aid compatible.

As of today, approximately 80 percent of all hearing aids dispensed in the United States are equipped with telecoils.⁵ ADA section [706.3](#) considers a receiver as hearing aid compatible when it can be used with a telecoil-equipped hearing aid, facilitated through the provision of induction neck loops.

To calculate the number of receivers and neck loops required, refer to the table below or use our [ADA Calculator](#).

ADA Table 219.3 (adapted for clarity):

Assembly Area Seating Capacity	Minimum Number of Required Receivers	Hearing Aid Compatible Receivers Neck Loops
50 or less	2	2
51-200	2 + 1 per 25 seats over 50 seats*	2
201-500	2 + 1 per 25 seats over 50 seats*	1 per 4 receivers*
501-1000	20 + 1 per 33 seats over 500 seats*	1 per 4 receivers*
1001-2000	20 + 1 per 50 seats over 1000 seats*	1 per 4 receivers*
2001 and over	55 + 1 per 100 seats over 2000 seats*	1 per 4 receivers*

* or fraction thereof

ADA 219.3 Exceptions:

1. If a building has multiple assembly areas and those areas are under one management, you can calculate the total number of required receivers based on the combined capacity of all the assembly areas, as long as all the receivers work with all the systems.
2. In assembly areas where all seats are served by an induction loop assistive listening system, the minimum number of neck loops shall not be required (receivers are still necessary).

ALS Notification Signage

Because many patrons may not be aware of available resources, ADA section **216.10** mandates that assembly areas display signage featuring the International Symbol of Access for Hearing Loss (complying with ADA figure **703.7.2.4**) to indicate the presence of Assistive Listening Systems (ALS). These signs should be prominently placed at all entrances to assembly areas.



Figure 703.7.2.4
International Symbol of Access for Hearing Loss

For signage to be considered accessible, the ADA specifies visual requirements in section **703.5**, encompassing factors like character size, a non-glare finish, and a high contrast ratio, that must be met by the signage. Signage must also be positioned at a minimum height of 40 inches (1015 mm) above the floor or ground.

ADA section **216.10** exception:



“ Where ticket offices or windows are provided, signs shall not be required at each assembly area provided that signs are displayed at each ticket office or window informing patrons of the availability of assistive listening systems. ”

Which Technologies Can Be Used for ALS?

ADA section **106.5** defines an assistive listening system (ALS) as:

“

An amplification system utilizing transmitters, receivers, and coupling devices to bypass the acoustical space between a sound source and a listener by means of induction loop, radio frequency, infrared, or direct-wired equipment.

”

In Advisory **706.1**, the ADA mentions three types of wireless assistive listening systems: **induction loop, infrared, and FM radio transmission** (also known as radio frequency).

Recognizing that technology is continually evolving, the ADA includes section **103, Equivalent Facilitation**, which states that “**nothing in these requirements prevents the use of designs, products, or technologies as alternatives to those prescribed**, provided they result in substantially equivalent or greater accessibility and usability”.

Regardless of the technology used, assistive listening systems required in assembly areas must comply with ADA section **706**, which outlines the following requirements for receivers:

- Must include 1/8 inch (3.2 mm) standard mono jack
- Must be compatible with telecoil hearing aids with provision of neck loops
- Sound pressure level of 110 dB minimum and 118 dB maximum with a dynamic range on the volume control of 50 dB
- Signal-to-noise ratio shall be 18 dB minimum
- Peak clipping shall not exceed 18 dB of clipping relative to the peaks of speech



All receivers must be compatible with headphones and neck loops.



Today, there are four types of wireless assistive listening:

- Radio Frequency (RF)
- Infrared (IR)
- Induction Loop (Loop)
- Audio Over Wi-Fi (Wi-Fi)

Each technology has unique advantages and disadvantages that can assist in determining the most suitable choice for a particular application. For example, the right system for a football stadium will differ from the right system for a courtroom. Let's break down each technology to give you a better idea of what's available.



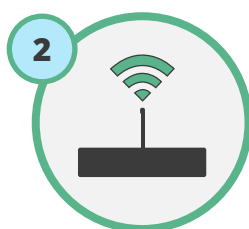
Radio Frequency (RF)

A Radio Frequency (RF) assistive listening system operates through the transmission of signals across radio frequencies to a personal receiver. The Federal Communications Commission (FCC) has allocated the 72 MHz and 216 MHz frequency bands for these systems.



Audio Source

Microphone or mixer is connected to a transmitter.



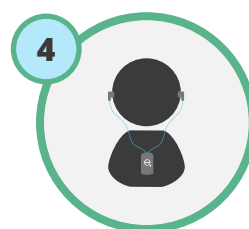
Transmitter

Connected audio is transmitted via radio frequency.



Receiver

A receiver picks up the radio frequency signal.



Listener

The user listens to the audio via headphones or a neck loop.

Advantages

- Budget-friendly
- Simple to set up and use
- Wide area coverage (up to 3,000 ft)
- Can be used indoors and outdoors
- Portable options available

Disadvantages

- Not secure
- Limited simultaneous channels for multi-room scenarios

An RF system is similar to a radio system. Once it's broadcasting, anyone with a receiver within range can pick up the signal. Because of this, it's easy to install and suitable for small or large venues.



Houses of Worship



Theaters



Concert Halls



Stadiums



Auditoriums



Convention Centers



Infrared (IR)

An Infrared (IR) assistive listening system utilizes light wavelengths that are beyond the range visible to the human eye to transmit audio wirelessly and securely to a receiver through a direct line of sight.



Audio Source

Microphone or mixer is connected to a transmitter.



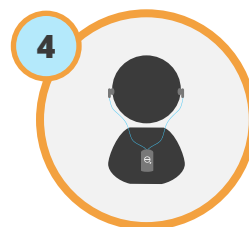
Transmitter & Radiator

Connected audio is transmitted via infrared signal.



Receiver

Sensors on the receiver pick up the infrared signal.



Listener

The user listens to the audio via headphones or a neck loop.

Advantages

- Secure audio
- Multiple room use
- Expandable

Disadvantages

- Indoor only
- System design and installation can be complex
- Radiators are visible to the public eye

Because IR systems operate via line of sight, they confine audio within the space, making them an excellent choice for indoor applications involving confidential information and multi-room setups in close proximity.



Legislative Chambers



Courtrooms



Theaters



Classrooms



Lecture Halls



Boardrooms

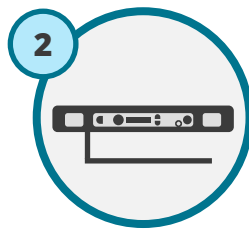
Induction Loop (Loop)

In an Induction Loop (or Hearing Loop) assistive listening system, a copper wire connected to a loop driver is installed in the floor or ceiling of the room. This wire creates an induction field that hearing aids with a telecoil can pick up.



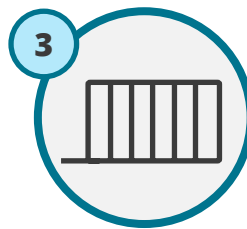
Audio Source

Microphone or mixer is connected to an induction driver.



Induction Driver

The driver feeds audio source to copper cable.



Copper Wire

The installed copper wire creates an induction field that transmits audio.



Listener

The user listens to the audio via a telecoil hearing aid or cochlear implant, or a receiver with headphones.

Advantages

- Streams audio direct to telecoil-equipped hearing aids
- User-friendly, discreet listening

Disadvantages

- Costly
- Complicated and intrusive installation
- Limited range: users must remain in the looped area to receive audio

Because Loop systems connect directly to telecoil hearing aids or cochlear implants, users enjoy the ease of walking into a space and simply being able to use the technology without having to checkout a receiver.

Remember, not everyone who is hard of hearing has a hearing aid, and not all hearing aids are equipped with telecoil. To achieve ADA compliance and ensure accessibility, it's important to include receivers in a loop system as outlined in ADA table 219.3.



Houses of Worship



Theaters



Classrooms



Ticket Counters



Boardrooms

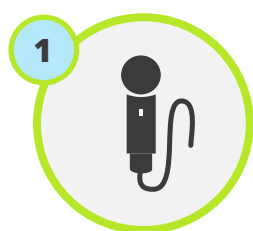


Waiting Areas



Audio Over Wi-Fi (Wi-Fi)

An Audio Over Wi-Fi assistive listening system delivers audio over a local area network to smart devices via a mobile app or venue-provided receivers.



Audio Source

Microphone or mixer is connected to a Wi-Fi server.



Server

The server is connected to the local area network and transmits audio over Wi-Fi.



Receiver or Mobile App

Audio is accessed via receiver or mobile app.



Listener

The user listens to the audio via wired or wireless headphones or a neck loop.

Advantages

- It's discreet – guests can use their smart device
- User friendly
- Expandable
- Unlimited channels
- Uses existing infrastructure to broadcast

Disadvantages

- Reliance on Wi-Fi network infrastructure
- Mobile app dependent when using a personal device
- Latency: there may be additional latency when guests use Bluetooth® devices to listen

Because Wi-Fi systems are scalable and easy to use, they are a great solution for both small and large venues, indoor and outdoor applications, and multi-channel applications.



Classrooms



Boardrooms



Houses of Worship



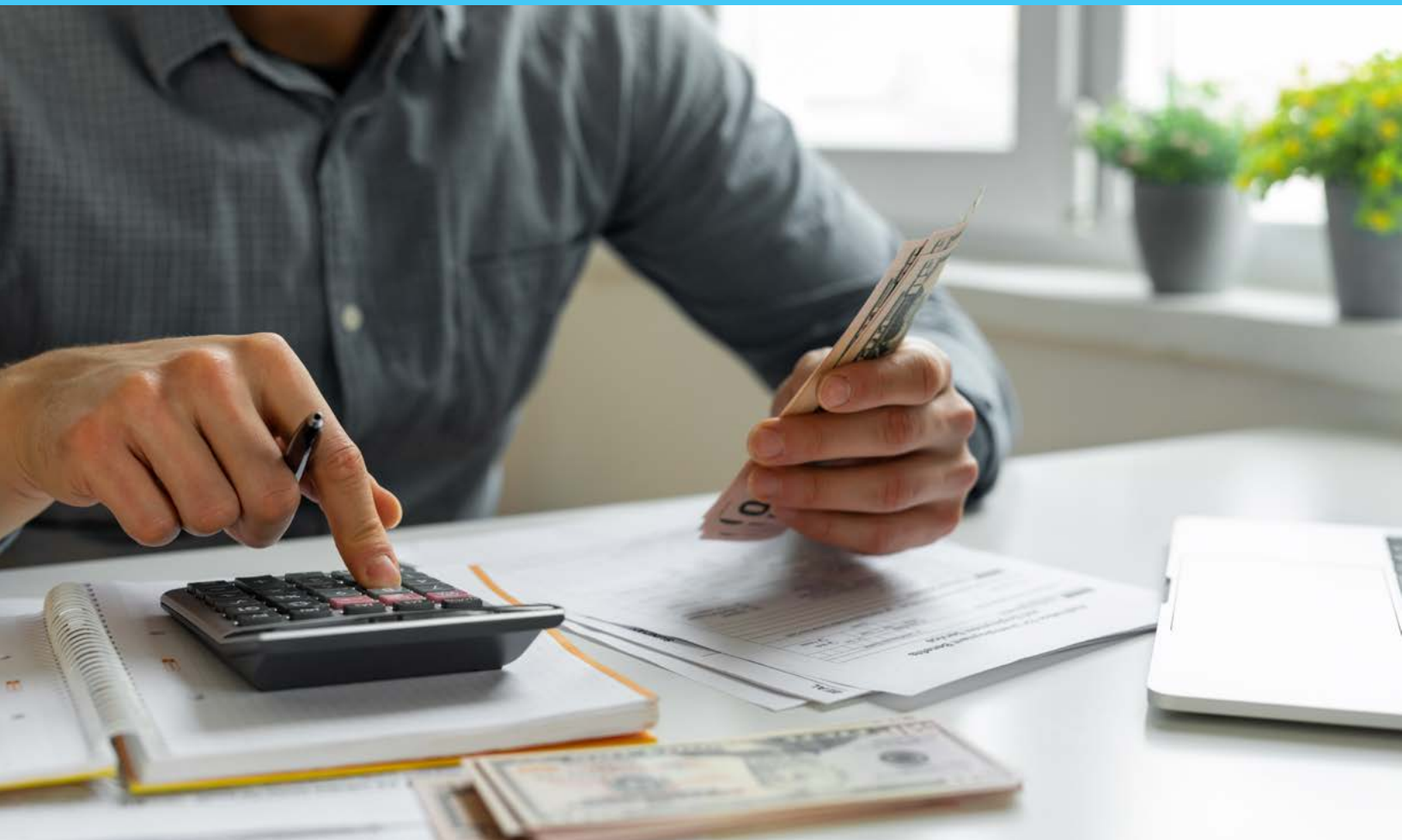
Theaters



Stadiums



TV Audio



Funding Assistive Listening Systems

Now that you've learned about hearing loss, understand the necessity of ALS, and explored the available technologies, you might be wondering about the cost of a system and how to secure funding.

The cost of an assistive listening system can vary significantly depending on factors such as the chosen technology, the size of the venue, and the specific needs of the installation. On the lower end, a basic system might cost a few thousand dollars, while more complex or large-scale systems can range from several thousand to tens of thousands of dollars or even more.

Funding an assistive listening system can be challenging, particularly for small businesses or non-profit organizations. However, there are various financial avenues to explore, including tax credits, tax deductions, and grants. These options can help alleviate the financial burden and make these systems more accessible for those who need them.

Tax Credits

IRS Code provisions provide valuable financial incentives for businesses to invest in accessibility enhancements and promote ADA compliance.⁶

Tax Credit for Small Businesses

Section 44 of the IRS Code

Small businesses can take advantage of a tax credit under Section 44 of the IRS Code to aid in their ADA compliance efforts. To qualify for this tax credit, businesses should meet specific criteria:

- **Eligibility:** Businesses with either total revenues of \$1,000,000 or less in the previous tax year or having 30 or fewer full-time employees are eligible for this tax credit.
- **Credit Amount:** This credit can cover up to 50% of eligible access expenditures within a year, with a maximum credit limit of \$10,250 (not exceeding \$5,000).

Tax Deduction for All Businesses

Section 190 of the IRS Code

Under Section 190 of the IRS Code, all businesses, regardless of size, have the opportunity to claim a tax deduction to support their ADA compliance efforts:

- **Deduction Limit:** Businesses can claim a tax deduction with a maximum annual limit of \$15,000.

Grants

Billions of dollars are available annually through grants, making them an excellent resource for funding an assistive listening system. Grants are typically awarded by three primary types of funders: government agencies, private and public foundations, and businesses and corporations. While the grant process can be competitive and time-consuming, it provides a viable option for companies or nonprofits seeking financial assistance to achieve ADA compliance. A valuable starting point for learning how to navigate the grant process is [grants.gov](https://www.grants.gov), a resource provided by the U.S. Department of Health & Human Services.

Why Comply?

Compliance with the ADA is crucial because it promotes equal access for all individuals. By adhering to ADA regulations, businesses and organizations not only avoid legal consequences but also demonstrate their commitment to providing a welcoming and accessible environment for people with disabilities.

Legal Ramifications

The Department of Justice (DOJ) upholds the ADA by pursuing legal action and entering into settlement agreements to enhance accessibility, inclusion, and equal opportunities for individuals with disabilities.⁷ The maximum civil penalty for a first violation of Title III of the ADA is \$75,000; a subsequent violation is \$150,000.⁸

While the DOJ is primarily responsible for enforcing the Americans with Disabilities Act (ADA), it's essential to understand that individuals also have the right to file private lawsuits against companies or entities that they believe are not in compliance with the ADA. The ADA grants this right to individuals as a way to ensure that accessibility and equal opportunities for people with disabilities are upheld.

As an example, the [San Mateo Daily Journal](#) featured a case in which this took place. The article's summary is provided below:

Todd Rich, a real estate agent in San Mateo County, California, took legal action against Intercontinental Hotels of San Francisco and Success Strategies Institute, Inc., seeking \$30,000 in compensation and other punitive damages. Rich, who has a 90-decibel hearing loss in both ears, filed the lawsuit because the hotel did not provide an assistive listening device, even though he had repeatedly stressed his need for one before the event.

When Rich arrived at the hotel for a seminar, he requested the assistive listening device. However, the seminar's representative informed him that they didn't have the device, and he was directed to hotel staff, who also claimed they couldn't find it. Eventually, the hotel staff located the equipment at a sister hotel but only brought it to him halfway through the seminar.

To Rich's surprise, the boxes that were delivered to him contained smoke alarms and unrelated items, not the assistive listening device he had originally requested.⁹



It's the Right Thing To Do:

Compliance with the ADA is crucial because it promotes equal access for all individuals. By adhering to ADA regulations, businesses and organizations not only avoid legal consequences but also demonstrate their commitment to providing a welcoming and accessible environment for people with disabilities.

- Hearing loss is the 3rd most common chronic physical condition - twice as prevalent as diabetes or cancer.¹⁰
- Approximately 48 million Americans have some degree of hearing loss.¹¹
- The number of Americans with hearing loss is expected to increase by 30 million by 2060.¹²
- 14.9% of kids between the ages of 6 and 9 in the United States have hearing loss.¹³

Providing access to assistive listening devices to these tens of millions of Americans with hearing loss is simply the right thing to do. It helps them feel connected to their communities and live fuller, richer lives.

Because everyone deserves an exceptional listening experience.



Need help choosing a system?

Our team is happy to help with any questions you have about selecting the right assistive listening system for your needs. Simply call **+1 (801) 233-8992**, email **info@listentech.com**, or try our System Recommendation Tool.

System Recommendation Tool

www.listentech.com/system-recommendation-tool

Disclaimer

Some states have adopted building codes that specify different standards for assistive listening compared to the Americans with Disabilities Act (ADA). For instance, California utilizes the California Building Code (CBC) to define the standards for assistive listening requirements within the state. To obtain more information on this topic, consult your local compliance regulations and collaborate with local authorities.

This information is provided for general guidance and should not be considered a substitute for legal advice or legal opinions. You should always obtain legal advice that is specific to you and your situation. We always recommend that you review the code with your local authorities. Keep in mind that this information may not account for the latest legal developments or other specific circumstances that might pertain to your situation.

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