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A collaborative program between the ADA National Network and the US Access Board

The Session is Scheduled to begin at 2:30pm Eastern Time
We will be testing sound quality periodically

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• Emotions/Hand-raising: Please do not use these features during this session

Presenters
Paul Beatty  David Baquis
Assistive Listening Systems (ALS)
Session Agenda

• How do ALS provide access
• What is an ALS
• Where do the ADA and ABA Standards require ALS
• Pros and cons of ALS types

How Do Assistive Listening Systems Provide Access to Persons with Hearing Loss?

Facts about Hearing Loss

• Largest disability group and growing
• 28 million people in the U.S. have a hearing loss (1/10)
• 1/3 of people over 65 y/o have a hearing loss
• “Invisible” disability
• People wait 7 years, on average, before seeking help
• 6 million hearing aid users
• 22 thousand cochlear implant users
Shifting Demographics

• Baby boomers and used to high quality sound systems
• They are less shy about asserting needs
• They don’t stay home as much
• Increasing visibility

Common Myths about Hearing Loss

• Hearing aids are the solution
• Everyone can speech read
• Speech reading = full understanding
• Everyone with a hearing loss knows sign language
• “You can hear when you want to”

What is an Assistive Listening System (ALS)?

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.
Assistive Listening Devices

• “Binoculars” for the ears
• Increase loudness of specific sounds
• Bring sound directly into the hearing aid/CI or ear
• Minimize background noise
• Reduce effect of distance between HOH person and sound source
• Override poor acoustics

ALD Attachments/Couplers

• Headsets (over head or under chin)
• Earplugs/earbuds
• Earphones (half moon shape)
• Neckloops
• Silhouette inductors
• Cord for DAI hearing aid (self-supplied)

Listening Capabilities

• Acoustical (through the ear or hearing aid microphone)
• Inductive (through a telecoil of hearing aid or cochlear implant)
• Direct (direct connection into hearing aid or cochlear implant)
ADA and ABA Standards

Based on the Board’s ADA-ABA Guidelines (2004)

2010 Standards - DOJ includes several additional requirements/revisions – see www.ada.gov.

Current ADA Standards

2010 ADA Standards for Accessible Design

For ALS, ABA Standards are the same (except Federal leasing)

Architectural Barriers Act

- Facilities that are designed, constructed, or altered, by, or on behalf of the United States
- Facilities leased by the United States (see F202.6 for leasing)
- Facilities receiving certain types of Federal financial assistance
Auxiliary Aids and Services - Effective Communications

Regulatory Sections 35.160 (Title II) and 36.303 (Title III)

Where do the Standards require Assistive Listening Systems (219 & F219)?

Courtrooms
Each must have an ALS
Assembly Areas

Assembly Area. A building or facility, or portion thereof, used for the purpose of entertainment, educational or civic gatherings, or similar purposes.

Required where:
- audible communication = integral to use of the space and
- has audio amplification

Number of Seats

• Fixed Seats
• Furniture

Number of Receivers

<table>
<thead>
<tr>
<th>Capacity of Seating in Assembly Area</th>
<th>Minimum Number of Required Receivers</th>
<th>Minimum Number of Required Receivers Required to be Hearing Aid Compatible</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 or less</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>51 to 200</td>
<td>2 plus 1 per 25 seats over 50 seats</td>
<td>2</td>
</tr>
<tr>
<td>201 to 500</td>
<td>2 plus 1 per 25 seats over 50 seats</td>
<td>1 per 4 receivers1</td>
</tr>
<tr>
<td>501 to 1000</td>
<td>20 plus 2 (1 per 33 seats over 500 seats)</td>
<td>1 per 4 receivers1</td>
</tr>
<tr>
<td>1001 to 2000</td>
<td>35 plus 1 per 50 seats over 1000 seats</td>
<td>1 per 4 receivers1</td>
</tr>
<tr>
<td>2001 and over</td>
<td>55 plus 1 per 300 seats over 2000 seats</td>
<td>1 per 4 receivers1</td>
</tr>
</tbody>
</table>

1 Or fraction thereof.
**EXCEPTIONS (219.3)**

- Multi-assembly areas under one management ...

  Example: 10 theaters each with 300 seats = 65 receivers (vs. 10 x 12 = 120)

- Where all seats in an assembly area are served by an induction loop ALS

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**Signage (216.10)**

Signs must be provided informing patrons of the availability of the assistive listening system and have the International Symbol of Access for Hearing Loss.

**EXCEPTION:** Ticket offices or windows

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**Types**

- FM
- IR
- Inductive Loop
The Telecoil

- Optional component of hearing aid
- Only 1/3 of HAs have a T-coil, but the number is growing
- Not available with canal (very small) aids
- Standard feature in ear-level cochlear implants
- Functions with telephones and assistive listening devices

Advantages of Inductive Listening

- Eliminates feedback
- Reduces noise (improve “speech to noise ratio”)
- Compensates for distance and poor acoustics
- Increases effectiveness of hearing aids and cochlear implants
- Enables user to turn up volume without making it loud for others

ALS Specifics

- 3 types: FM, Infrared and Inductive Loop
- Each is cordless
- Each works well and has specific advantages
- Each works with or without hearing aids/CIs
- Each can experience interference
- Available as wide area or personal systems
**Infrared Systems**

- Transmits light waves to receivers
- Commonly used in court rooms, movies, live performance theaters, conventions and with TVs
- Allows privacy
- Susceptible to interference from bright sunlight
- Can effectively reflect off some surfaces
- Must keep receiver diode exposed to pick-up signal

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**FM Systems**

- Transmits radio waves to receivers
- Commonly used in classrooms and where movement of speaker is required.
- Not affected by light
- Can cover 200+ feet
- Portable
- Multiple frequencies allow several uses in same place
- Susceptible to radio interference

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**Audio Loop Systems**

- Audio loop transmits through electromagnetic field
- No receiver necessary for hearing aid wearers with telecoil
- Loop listener receivers for others
- Often permanently installed
- Reception can vary
- Susceptible to interference
Induction Loop System

Microphone Considerations
• Garbage in/garbage out
• Styles: Directional versus Omni
• Number and placement

ALS Troubleshooting
• Battery dead/no battery
• System, microphone or receiver not turned on
• Receiver broken
• T-switch not on
• Interference
• Break in cords
ALS Considerations

- Prices vary/comparison shop
- Maintenance, check batteries, staff training
- People setting up the system should check it
- Facilities can’t charge to loan ALD receivers
- ADA rules on number of receivers & attachments

Who Needs to Know about ALSs?

- Consumers and families
- Audiologists/hearing aid dispensers (importance of needs assessment)
- Facility owners
- Service staff
- Sound contractors (installation)

Helpful Resources

- Access Board bulletins on assistive listening systems
  - http://www.access-board.gov/adaag/about/bulletins/als-index.htm
- Demystifying Hearing Assistance Technology by Cheryl Davis, et al
  - http://www.wou.edu/~davisc/
- Assistive device demonstration and loan centers
  - List of state assistive technology programs:
    - http://www.ataporg.org/ and
    - http://www.resnaprojects.org/nattap/at/stateprograms.html
- Self-help advocacy: http://www.hearingloss.org/
Questions?

You may type and submit questions in the Chat Area Text Box or press Control-M and enter text in the Chat Area.

U.S. Access Board

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Thank you for participating in today’s webinar

Next scheduled session:
“Accessible Historic Buildings and Facilities”
November 1, 2012
2:30 - 4:00 (ET)

www.AccessibilityOnline.org 877-232-1990 (V/TTY)