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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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Webinar Features



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- **Questions** - type and submit questions in the Chat Area Text box or press control-M and enter text in the Chat Area
- **Emotions/Hand-raising:** Please do not use these features during this session

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Presenters



Paul Beatty



David Baquis

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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**

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

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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

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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

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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"

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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.

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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

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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)

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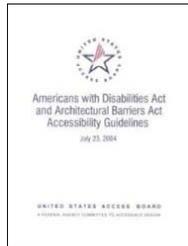
Listening Capabilities

- 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)

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ADA and ABA Standards

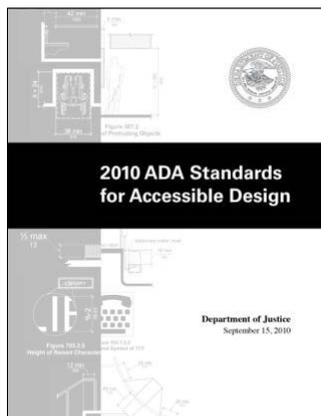


Based on the Board's ADA-ABA Guidelines (2004)



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

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Auxiliary Aids and Services - Effective Communications



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

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

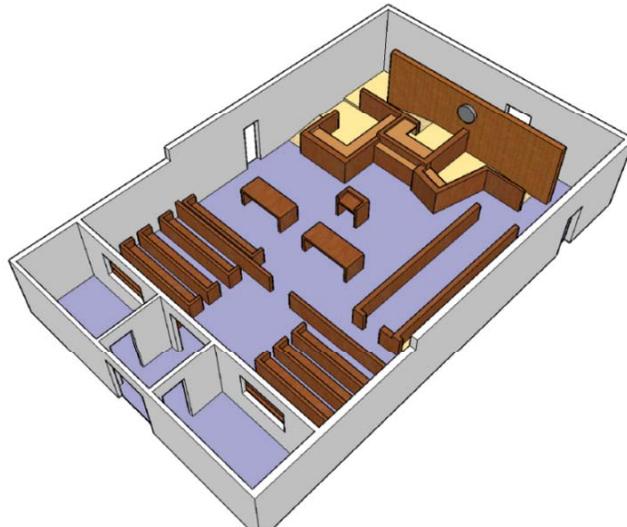


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Courtrooms

Each must
have an
ALS



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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 :

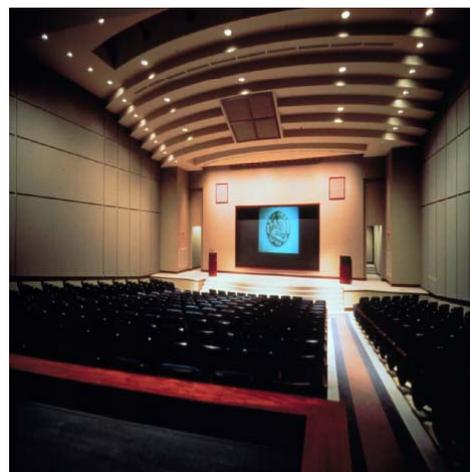
- audible communication = integral to use of the space and
- has audio amplification

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Number of Seats

- Fixed Seats
- Furniture



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Number of Receivers

Table 219.3 Receivers for Assistive Listening Systems (text version)

Capacity of Seating in Assembly Area	Minimum Number of Required Receivers	Minimum Number of Required Receivers Required to be Hearing-aid Compatible
50 or less	2	2
51 to 200	2, plus 1 per 25 seats over 50 seats ¹	2
201 to 500	2, plus 1 per 25 seats over 50 seats ¹	1 per 4 receivers ¹
501 to 1000	20, plus 1 per 33 seats over 500 seats ¹	1 per 4 receivers ¹
1001 to 2000	35, plus 1 per 50 seats over 1000 seats ¹	1 per 4 receivers ¹
2001 and over	55 plus 1 per 100 seats over 2000 seats ¹	1 per 4 receivers ¹

¹ Or fraction thereof.

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EXCEPTIONS (219.3)

- Multi-assembly areas under one management ...

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

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

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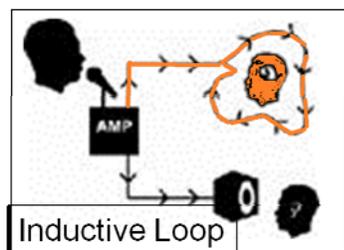
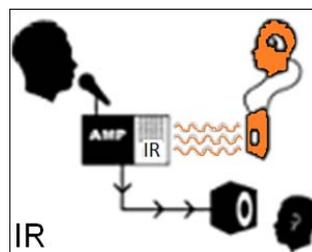
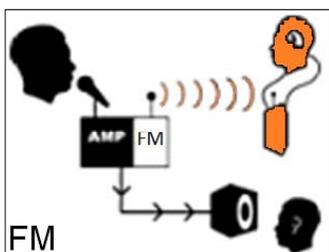
Signage (216.10)

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

Types



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

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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

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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

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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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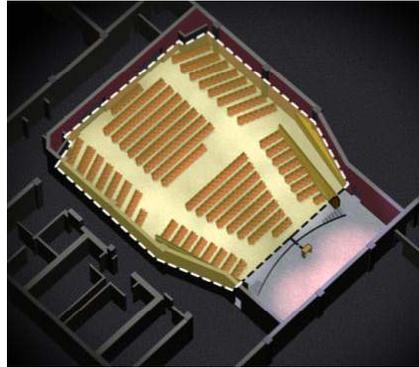
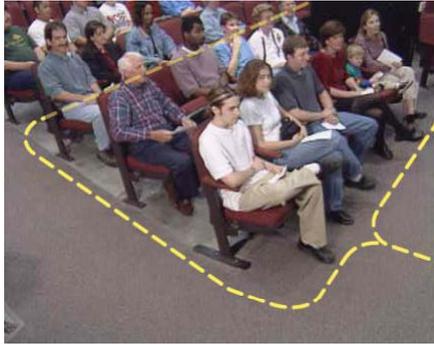
Audio Loop Systems

- 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

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Induction Loop System



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Microphone Considerations

- Garbage in/garbage out
- Styles: Directional versus Omni
- Number and placement



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ALS Troubleshooting

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

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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

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Who Needs to Know about ALSs?

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

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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/~davis/>
- 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/>

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Questions?

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U.S. Access Board

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(800) 993-2822 (TTY)

E-mail: ta@access-board.gov

www.access-board.gov

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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)**

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