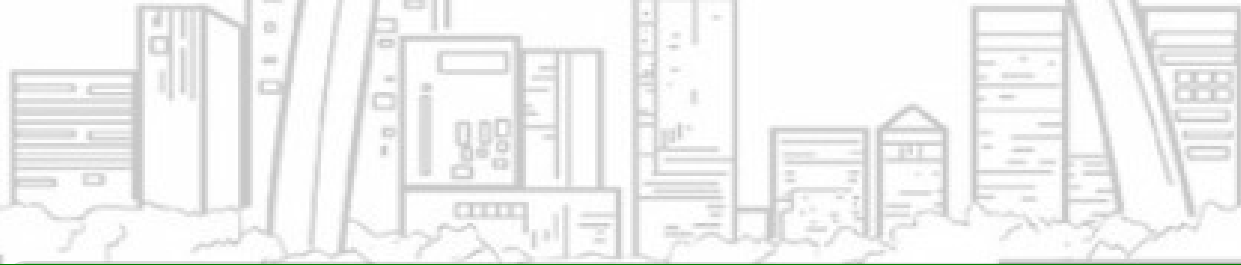




# Traveling With Hearing Loss

Presenter:

Stephen O. Frazier, Hearing Loss Support Specialist



If you're a hard of hearing traveler...



you are not alone.

# HEARING LOSS STATISTICS

- There are 48 million Americans with measurable hearing loss.
- Only 1 out of 5 people who could benefit from wearing hearing aids actually wears them.

## **Hearing loss affects all age groups**

- 65% of people with hearing loss are under age 65.
- 15% of school age children have a measurable hearing loss.

SOURCE: Better Hearing Institute

In the field of transportation,  
communication access is beginning to  
become available at  
airports, train stations  
subways, buses, ferries and taxis  
through hearing loops.

# Examples of hearing loops in transportation



**Seattle city bus terminal information counter.**

**Entire fleet of Indian Trails buses looped.**

# Examples of hearing loops in transportation



New York City Taxi Cabs

# San Francisco BART



50 looped stations



1,081 looped train cars

# New York City subway



Over 600 NYC subway fair/information booths  
plus emergency call buttons on platforms





# New York City MTA

1000 looped  
subway cars



Loops being  
tested on buses



Information counters at  
all bus, train, and ferry  
terminals to  
be looped



# NEW Accessibility Requirements

**All new or significantly renovated airport terminals must have hearing loops at departure gates and at information counters.**

19 US airports  
now to use loops



# Neckloops and airplanes



Virgin Atlantic now offers their international travel passengers a choice of ear buds or a NECKLOOP.

# Amtrak



83 “trainsets” (500 cars) on order with option for 800 more cars - all with loops

But....

basically, the burden is on us,  
our hearing aids and our  
determination to have good  
communication access when  
traveling.

# Hearing aids are most effective in 1 on 1 settings



Good directional mics have an effective hearing range of six feet or less

(Etymotic Research, 2000a)



# Hearing aid performance

- Limited effective range: 6-10 feet
- Miss 20% more words in speech recognition
- Make speech & background noise louder
- Speech to noise ratio not improved
- Temporal processing slower for seniors
- Ability to focus on one voice impaired

# Airport/Train/Bus Terminals

High ceilings,  
hard surfaces,  
open space,



along with no  
sound barriers  
add up to...



**Adds up to NOISE that  
makes it extremely  
challenging to hear and  
understand.**

For help with  
communication  
problems,  
GET SMART!





Get yourself a

**SMART PHONE,**

then download  
some of the great

apps that are available to help you  
hear and stay connected...

# What's an APP ?

App is an abbreviated form of the word "application." An application is a software program that's designed to perform a specific function directly for the user or, in some cases, for another application program.



# Most Used App - Speech to Text



**Live Transcribe - Android - 3.7 - FREE** : transcribes spoken audio into text and also reports many of the background sounds you hear and how loud they are in relation to the speech it is transcribing.

**Live Transcribe - iPhone - 4.6 - Free but fee for monthly use:** Transcribes spoken audio into text. Save transcripts to any note taking app on your phone and also send transcripts through any message app on your phone

**YouMail - Android or iPhone - 4.4 - FREE/Adds:** best known as an option for blocking robocalls, it can also block any phone number with your own personal blacklist. Save calls and voicemail forever in custom folders to stay organize and it also offers a voicemail to text feature that is cloud-based.

# Most Used App – Live Transcribe



- Transcribes in real time. Text appears on your phone as words are spoken.
- Accurately captures the nuances of how words are used in context.
- Choose from over 80 languages and dialects, and quickly switch between two languages.
- Add custom words that you use frequently names or places
- Set your phone to vibrate when someone says your name.
- See the volume of the speaker's voice compared to the loudness in your environment.
- Use external microphones for better audio reception.
- Set your phone to vibrate when someone says your name.
- Choose to save transcriptions for three days so that you can copy and paste them elsewhere. (By default, transcriptions are not saved.)
- Search within saved transcriptions.
- Touch and hold text in transcription to copy and paste.



# Other Smart Phone Apps For Travelers



Personal sound amplifier

Background noise reducer

TV watching

Alerting

Streaming

Foreign language translator

Quiet venues/restaurants

# Personal Sound Amplification Apps

A new take on an old favorite,  
the Williams Sound  
Pocket Talker



## Williams Sound PocketTalker



This device can fit in your pocket, palm (or hang from the included neck lanyard) and, using ear buds or a neckloop, it amplifies sounds in one-on-one settings, at a dinner table or other small group setting. \$185 plus cost of neckloop or as little as \$50 on Ebay.

## Williams Sound or other personal FM

A personal FM Listening System wirelessly connects you to a speaker wearing the transmitter or, using a conference mic, to others at a conference table. Range up to 150 feet.



Use with earphones, ear buds or neckloop. \$700 & up but watch for them on Ebay - can get for \$100 or less for the pair.

# Wireless Hearing Aid Accessories

All of the hearing aid brands have introduced wireless hearing aid accessories for different situations, such as TV streamers or remote microphones to give people a better ability to hear in noise. Generally, they work very well for the purpose they have been designed . Some work directly with hearing aids via Bluetooth® while others work with a neckloop and receiver. Cost can vary from a few hundred so several thousand dollars.



# Travel by Car



Driver listening via Bluetooth hearing aids to passenger  
with mic on lanyard.

# Where do you get these devices

[www.diglo.com](http://www.diglo.com) (formerly Harris Communications)

[www.amazon.com](http://www.amazon.com), [www.ebay.com](http://www.ebay.com)

or do a Google search by name

Your hearing care provider for their brand

# PERSONAL SOUND AMPLIFICATION APP

Use Bluetooth®, a neckloop or earbuds and turn your smartphone into a “pocket talker” to amplify sounds you want to hear around you. Try Apple’s **EarMachine** or Google’s **Sound Amplifier**. In addition to volume control, both have a fine-tuning feature that lets the user control which frequencies get boosted, a little or a lot.



- If using a neckloop, if it has an “L” shaped jack it may not make a connection if the phone is in a case.
- Best to get an amplified neckloop.

# EAR SCOUT

Super Hearing



## Android - 4.4 - Free

Pair your phone with Bluetooth HAs or plug in a neckloop or ear buds.

- Click on the center button and you can hear what your phone's microphone is picking up.
- It's also possible to set up a noise-trigger for audio recordings and have them sent to your email.
- Whether you want to monitor your environment, hear the TV and conversations better or just listen to birds singing, this app works.



## EQUALIZER and VOLUME CONTROL



**To avoid feedback, connect earphones, neckloop or Bluetooth hearing aids first:**

**SAFETY FEATURE.** After starting the app the volume increases gently to the set level. This way you have time to adjust to high gain settings from the previous sessions.

Ear Scout amplifies sound coming through your phone's microphone straight to your earphones or neckloop (direct mic-to-headphones audio routing). To fine-tune the incoming signal, use the audio equalizer.

**Nearby sound VERY loud when focusing on distant sounds.**

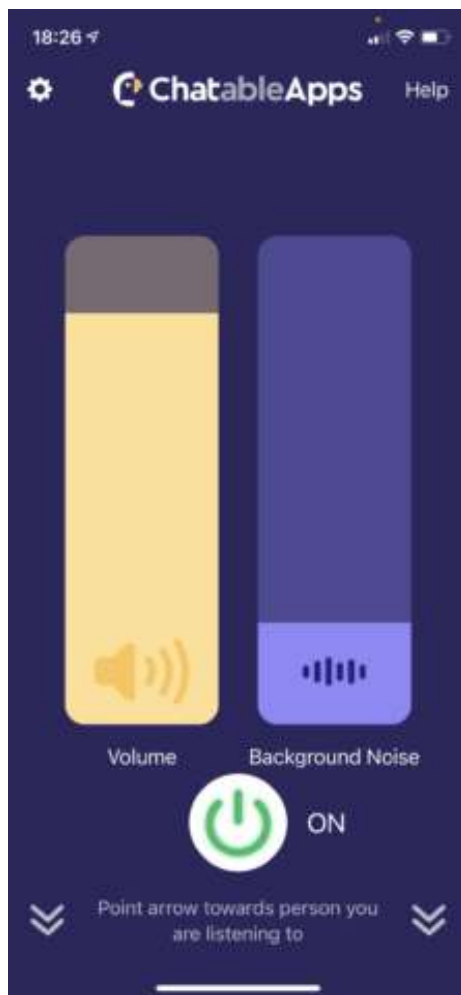
# EarMachine - iPhone - 3.3 - Free

Useful in situations ranging from talking in noisy restaurants to watching television at home.

Contains a recommendation engine called EarShare that will listen to the sounds around you and use that information to recommend wheel positions.

The signal processing is similar to that used in hearing aids. A wide-dynamic range multiband compressor ensures that quiet sounds are amplified, while protecting you from loud sounds. Other technology provides further loud sounds protection and ensures that steady sounds like a refrigerator hum is removed.





# BACKGROUND NOISE ERASER

**Chatable - iPhone, 4.7 - Android, 3.1**  
**Free trial**

Using earbuds or a neckloop and the telecoil (T-coil) setting on hearing aids, **Chatable** can erase most of the background sound. It identifies the voice of the person speaking and creates a new audio signal that sounds almost identical to the original while it removes the background sounds.

# AmiHear - Android - 3.8 - Free



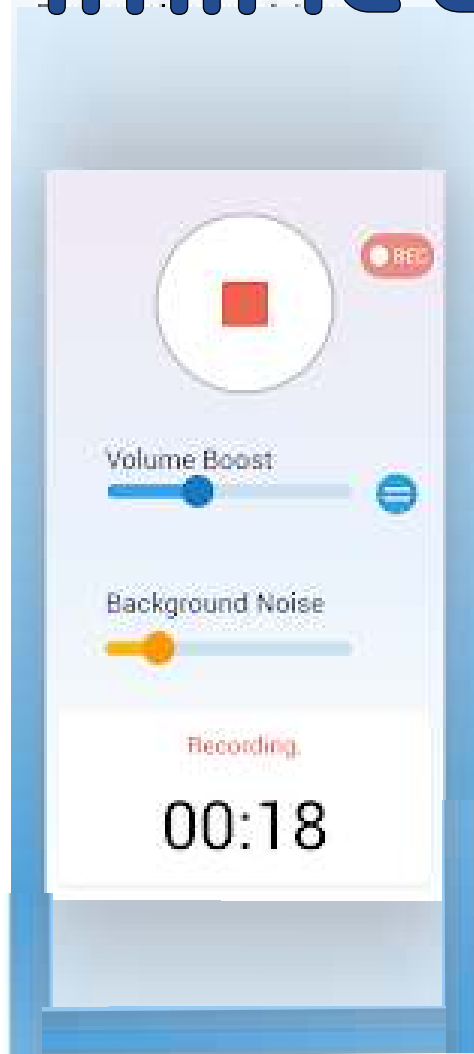
“A perfect app for hearing impaired people who do not want to use prescription hearing aids!”

AmiHear turns your headphones into hearing aids and provides unlimited recording that hearing aids can not provide. Using your phone's microphone to pick up sound, AmiHear can denoise, amplify and record sound around you simultaneously.

“Worry about social distance? No Problem. By using Bluetooth headphones with AmiHear, you can hear clearly even 30ft (10M) away from speaker.”

**Patented Noise Suppression Algorithm- eliminates background noise, increases speech intelligibility.**

# AmiHear



- Volume control
- Unlimited smart recorder
- Hearing assistant in three modes: Indoor, Outdoor, HearThru
- Automatic Gain Control (AGC) without over-amplifying loud sounds for ear protection
- Wind noise removal
- Hearing Equalizer: Adjust treble, middle and bass tones to your preference

# App for TV viewing

**Tunity - 1.3 - Free one week trial then**

**\$2.99 monthly charge**



**Tunity** allows users to hear live audio from muted TVs. It identifies a live video stream and its exact timing, syncing the audio with the user's smart phone. Use it at bars, gyms, restaurants, waiting rooms, airports, and even at home.

Hear with your smartphone connected to hearing aids via Bluetooth or a neckloop/t-coil option. Point your smartphone's camera at the TV screen and Tunity will do the rest.

# SOS Alert - Android - 4.6 Free NO ADS

**In an emergency, you press the SOS Widget**

- A link of your current location on Google Maps is sent to your emergency contacts .
- 2. As soon as you press the button/widget, a countdown starts giving you 3 seconds to cancel the SOS Alert before it is sent.
- When the countdown ends, the app finds your location from the GPS on your phone and sends your location and pre-written SOS Message to the emergency contacts listed in the app.
- The emergency contacts receive your SOS Message and Google map location as an text message.
- You can edit the SOS Message and add other useful information.



# WiFi based streaming audio

Here's another free app that may interest the hearing as well as the hard of hearing. Streaming audio via WiFi is the latest entrant in the battle for assistive listening systems in public places.

## **MYE AppAudio- iPhone & Android Rated 2.8 Free**

This app is often integrated into leading health club mobile apps. It is also used in ports bars and other venues to hear the TV. To hear the audio, you can use Bluetooth or a neckloop connected to your smartphone.







# Foreign language translation apps

**iTranslate - iPhone, Android 3.9**  
**Basic free**

iTranslate is the leading free translator and dictionary app. Easily translate text or start voice-to-voice conversations in over 100 languages. New Offline Mode allows you to translate abroad without having to pay roaming charges.



# Google Translate

**Android, iPhone - 4.5 - Free**

Translate between 108 languages

- **Transcribe:** Continuously translate someone speaking a different language in near real-time (8 languages).
- **Conversations:** Translate bilingual conversations on the fly (70 languages).
- **Instant camera translation:** Translate text in images instantly by just pointing your camera (94 languages).
- **Tap to Translate:** Copy text in any app and tap the Google Translate icon to translate (all languages).
- **Phrasebook:** Star and save translated words and phrases for

- Text translation: Translate between 108 languages by typing.
- Photos: Take or import photos for higher quality translations (90 languages).
- Handwriting: Draw text characters instead of typing (96 languages).
- Phrasebook: Star and save translated words and phrases for future reference (all languages).
- Cross-device syncing: Login to sync phrasebook between app and desktop.
- Transcribe: Continuously translate someone speaking a different language in near real-time (8 languages).

iPhone - 4.5

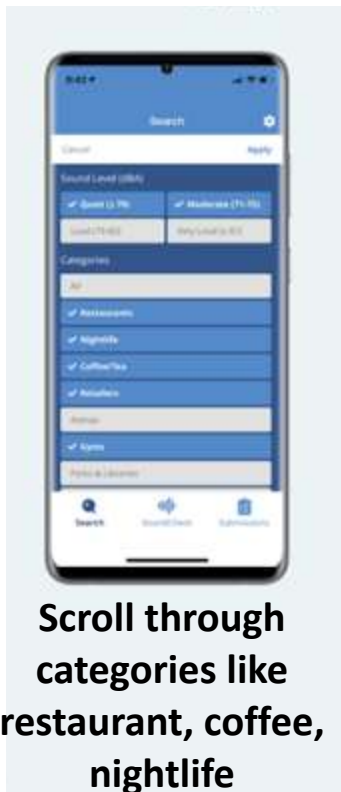
Android - 2.4

# Quiet Venues APP

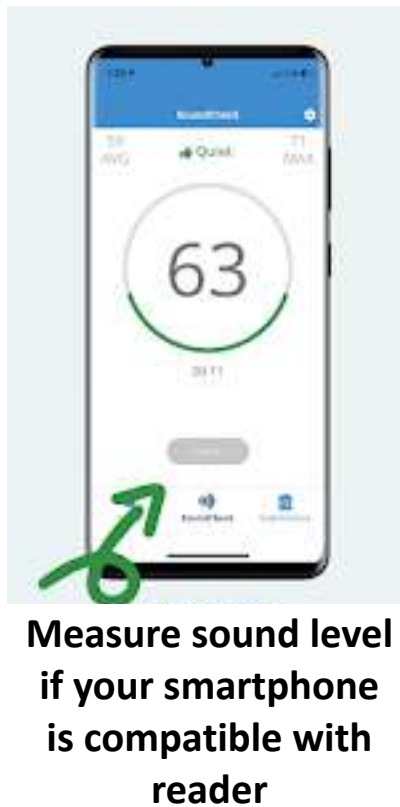
**SoundPrint** is a **free** app available at Google Play and the App Store. It gives users access to the largest and only public database of sound levels taken at 100K+ venues worldwide. Easy to use, the app is a valuable tool to find quiet a restaurant, bar or cafe wherever you are area based on sound level. It also allows you to rate and review places based on their service and the sound levels you experienced.



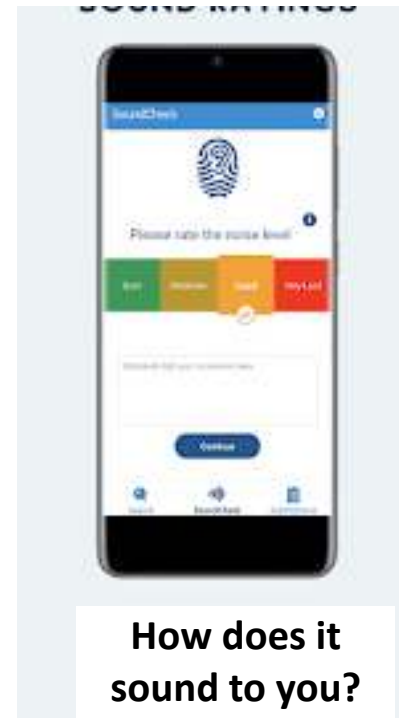
## CHOOSE VENUE PARAMETERS



## MEASURE SOUND LEVEL



## SUBMIT SUBJECTIVE SOUND



# Sound Level Meters

Big variety of sound level apps available for android and Apple phones. I use **Sound Meter**.



Disco, 1 m from speaker	100
Diesel truck, 10 m away	90
Kerbside of busy road, 5 m	80
Vacuum cleaner, distance 1 m	70
Conversational speech, 1 m	60
Average home	50
Quiet library	40
Quiet bedroom at night	30
Background in TV studio	20
Rustling leaves in the distance	10
Hearing threshold	0

To the human ear, a 10 dB increase in sound is twice as loud.

# WHAT WILL THE NOISE METER TELL YOU?

- Loudest sounds being heard.
- Average sound level over a given period of time.\*
- Whether sound level endangers your hearing.

The National Institute for Occupational Safety and Health (NIOSH)

2 hours 91 dBA

1 hour 94 dBA

30 minutes 97

15 minutes 100 dB

\*Sound level should be at least no more than 50 dBA for a hard of hearing person to hear well in an environment or 10 dBA under ambient.

# CAVEATS FOR SOUND PRESSURE LEVEL METER

- Typical phone mic limited to 30-96 dB range so very loud sounds (over ~96 dB) may not be recognized (human voice range when speaking normally is in 40-60 dB range).
- Automatic gain control used in some phones may interfere with the operation of noise meter.
- Meter should be calibrated before use for somewhat accurate readings. Use an actual sound pressure level meter (SPL meter) to adjust decibels error as close as possible before use.
- If no access to actual Sound Pressure Level Meter (SPL meter), go to a very quiet place where sound cannot be heard and adjust the reading value to 20~30dB.



**Tin Roof - Bar 1000 Clark St.- 98 dBa 40 ft from jackhammer**

**808 Maison - French Restaurant**

**808 Geyer St 76 dBa**

**Running dishwasher or washing machine**

**Tony's Italian Restaurant - 1 South Bdwy - 60 dBa**

**People talking and laughing**

# Apps for safety alerts

**Sound Alert** hears the smoke alarm going off in another room when you don't. It will alert you via notifications, vibrations, and flashing lights on your smartphone or tablet when any pre-programmed sound goes off in the house such as a smoke alarm, the doorbell, etc.



**My SoS Family** connects to a “first responder” family and friends list that keeps them informed in an emergency. Contacts are alerted instantly via the app, not your phone. It calls and texts your emergency contacta using Apple’s Find My Device feature.

# Where do you get these apps?

Android Phone: [www.play.google.com](http://www.play.google.com)

iPhone: [www.apple.com/app-store/](http://www.apple.com/app-store/)

or

Type in the name of the app in a search engine

# Tips and secrets for successful travel with hearing loss



# Preparing for travel

- Book hotel and other travel reservations and tickets online. You won't have to struggle to hear and understand a fast talking, accented agent and you'll receive email confirmations that give you a written record or just what arrangements you've made.
- If you have a smart phone, download a speech to text app to help communicating with ticket agents and others during travel when hearing them is difficult.
- If you have telecoil equipped hearing aids, take a neckloop along (buy one if you don't already have one) and download the Sound Amplifier app at Google Play or a similar Apple app. It will turn your smart phone into a pocket talker for added flexibility in talking with others.

- Sign up to have flight delays or gate changes sent to you as text messages instead of phone calls or emails.
- Download a captioned phone app such as the one from [www.HamiltonCapTel.com](http://www.HamiltonCapTel.com) so you will have captioned phone access during your trip for both placing and receiving calls.
- Batteries may be hard to find after you arrive at your destination and your many devices need power to work so be sure to take along fresh batteries for each of them. Check also that all your chargers are working well and bring an extra if available.
- Should you have one, pack an extra set of hearing aids for the trip.

- If your hearing aids are rechargeable, be sure to take the charger and put it in your carry-on in case your checked luggage doesn't arrive with you. If the batteries are not "built in", take a pair of extra batteries in case a battery fails during your trip. There are small, almost credit card sized portable chargers available for most rechargeable hearing aid batteries from: [www.Powerone-batteries.com](http://www.Powerone-batteries.com)
- Take a pen and notepad with you to communicate with ticket/gate agents if needed.
- Download the SoundPrint app( [www.soundprint.co/](http://www.soundprint.co/) ) for its Quiet List that identifies restaurants and bars in U.S. and foreign cities that are less noisy and more conducive to conversation.





- Print your ticket and boarding pass at home. Also send it to your smart phone in case your paper copies get lost.
- Apply for a Transportation Security Administration (TSA) Notification Card about your hearing condition - get one at:

[www.tsa.gov/travel/special-procedures](http://www.tsa.gov/travel/special-procedures)

- Also consider signing up for TSA PreCheck®. It allows you to go to a special PreCheck line for a quick and easy security screening. Apply at:

[www.tsa.gov/precheck](http://www.tsa.gov/precheck)



# At the airport

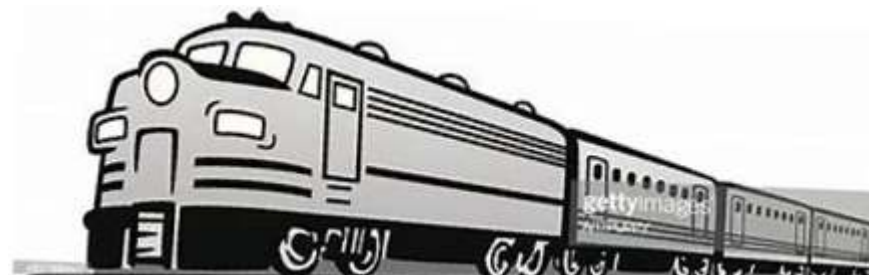
- Show your TSA Notification Card to the agent at the security check-in to facilitate communication. It might even get you moved over to an express type line.
- Take a seat near the agent's counter at the gate and alert the attendant to your hearing loss. Request that you be personally notified of any emergency or other announcements. Often the agent will add you to the group allowed to preboard.
- Have your smart phone handy to use as a pocket-talker via a neckloop or Bluetooth®.
- As you board the aircraft, alert the flight attendant(s) to your hearing loss so they will know to pay attention to your communication needs.

# On the aircraft

- Read the safety instructions in the pocket in front of you—you will probably have difficulty hearing the verbal instructions from the flight crew.
- In the event you're on a long flight where music or other entertainment is offered, keep your neckloop accessible – it will plug into the sound on most aircraft and provide you with better quality sound than the ear buds handed out by the airline.
- You do not need to turn off your hearing aids or CI on the aircraft (but you can - to reduce the roar if you find it).

# Train or bus travel

If traveling by train or bus, most transportation companies offer smartphone apps to give you access to timetables, provide alerts for gate changes or delays. Familiarize yourself with these and any other apps in advance so you don't have to learn their operation under pressure.



# At your hotel

- Once you reach your destination, if staying in a hotel, alert the desk clerk to your hearing difficulty.
- Have the documents and identification you will need ready to show at the desk either in printed form or on your smartphone to help speed up check in.
- Keep voice communication limited to avoid some things being repeated or any misunderstanding.
- Use the speech to text or personal amplifier app in your smart phone to communicate with the desk clerk.

# At your hotel

When checking in, if needed, request an **ADA Hard of Hearing Kit**. It will include such items as:

- An alarm clock with extra loud signaler.
- A bed shaker and built-in flashing strobe light to alert you if the alarm clock goes off, the phone rings, someone knocks on the hotel door, or if a smoke/carbon monoxide alarm goes off in the room.



- It could also have a Telephone In-Line Handset Amplifier that plugs into the hotel room's existing room telephone line amplify all callers,

# Out and about

- Advocate for yourself. Let your tour guides and fellow travelers know about your hearing loss and provide specific suggestions on how they can help you hear your best.
- If requested, many tours offer assistive listening devices so you can hear the docent or tour guide even when you're not right close by, so make such a request. If the device offered comes with earbuds or earphones, check to see if you can connect your own personal neckloop into it instead.

That way you'll hear ambient sound that would otherwise be masked by the earphones and you'll escape the danger or damage or loss with your hearing aids.

- Many theaters, concert halls and places of worship also have such systems so, if not offered, ask about their assistive listening provisions before your visit or when you arrive at the venue.

## Best loop finding sites:

<https://time2loopamerica.com/loop-locator/>

<https://www.loopfinder.com/>

# Best loop finding sites:

<https://time2loopamerica.com/loop-locator/>

<https://www.loopfinder.com/>

<https://www.hearingloss.org/chapters-state-orgs/find-a-chapter/>



# MORE RESOURCES FOR INFORMATION

Especially for hearing loop info:

[www.hearingloss.org](http://www.hearingloss.org)

[www.hearingloop.org](http://www.hearingloop.org)

[www.sofnabq.com](http://www.sofnabq.com)

[www.loopnm.com](http://www.loopnm.com)

[www.ampetronic.com](http://www.ampetronic.com)

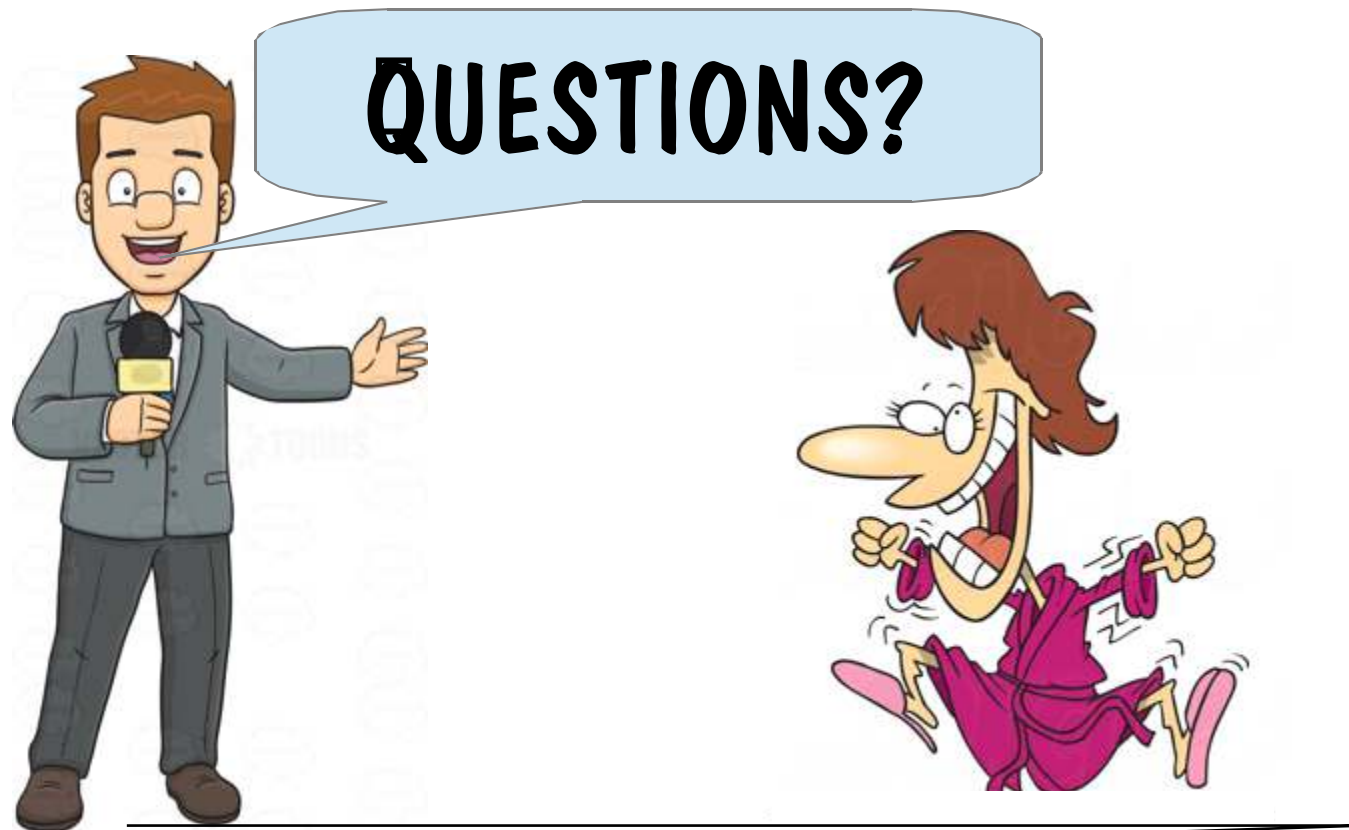
[www.contactainc.com](http://www.contactainc.com)



# Look for this symbol

In major US cities (and especially in Europe and Australasia) look for the international ear symbol for telecoil accessible transportation and tourist and other sites and services.

In case you thought I was never going to stop...





Thank you for attending my

# Traveling With Hearing Loss

Workshop.

Stephen O. Frazier, Hearing Loss Support Specialist

[www.sofnabq.com](http://www.sofnabq.com)

