

**Please Help Us to Hear in the Support**



**Make Our Dreams of Flight Come True**





# FIVE FACTS about HEARING LOSS

1. 20% in US are HoH
2. 30% 65 and older
3. 50% 75 and older
4. 20% Teens
5. 65% Under the age of 65

# AIRPORT ACOUSTICS

High ceilings,  
hard surfaces,  
open space,



SUNPORT FOOD COURT

along with no  
sound barriers  
add up to

## Mucho Background Noise



# AIRPORT NOISE



Recorded Announcements

A/C Hum

Flight Announcements

Luggage Wheels

People Talking

Children Playing

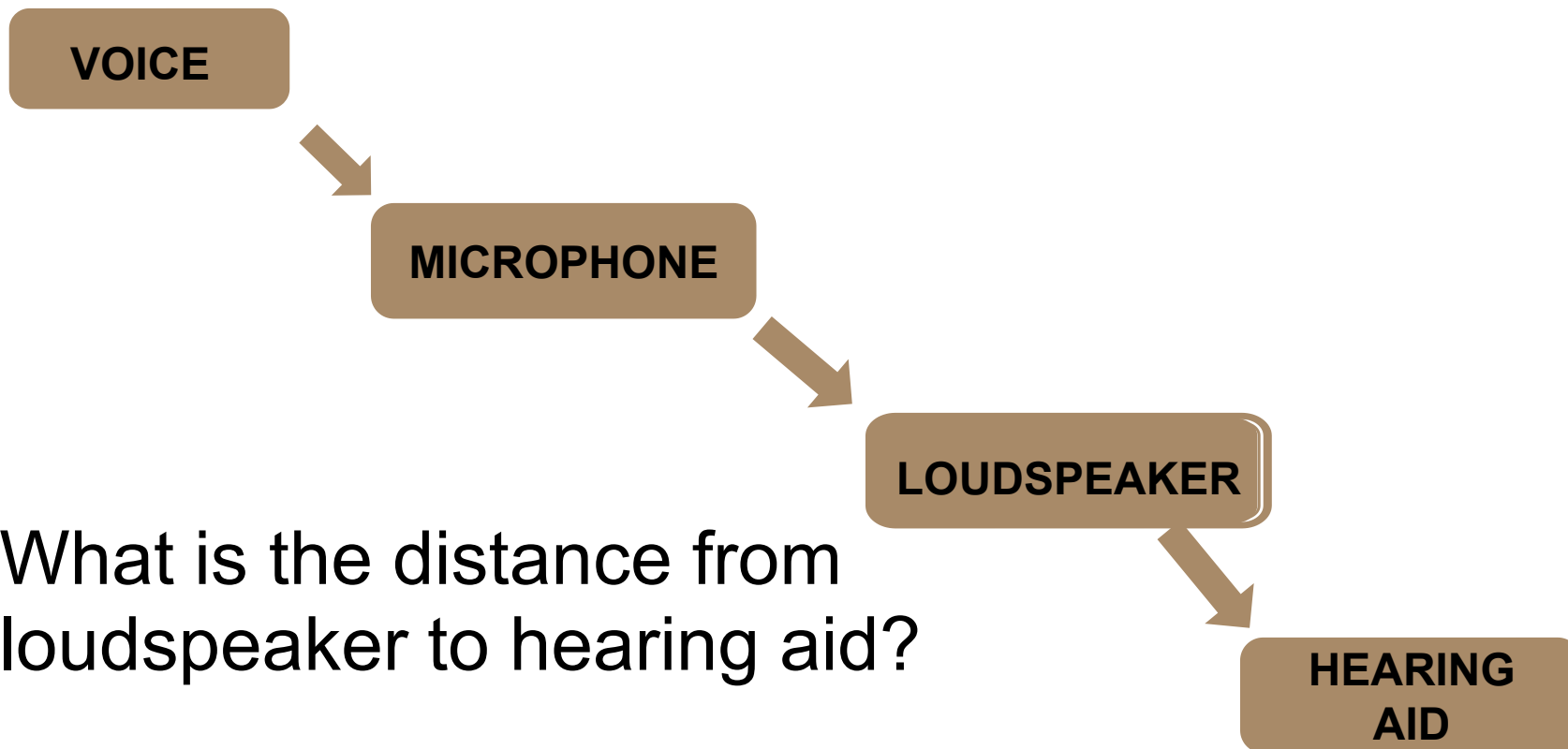
Ringing Phones

Escalator Sounds

# HEARING AID PERFORMANCE

- Limited effective range: 6-10 feet
- Make speech & background noise louder
- Speech to noise ratio not improved
- Noise covers speech
- Sense of sound direction sometimes lost
- Ability to focus on one voice impaired
- Temporal processing slower for seniors

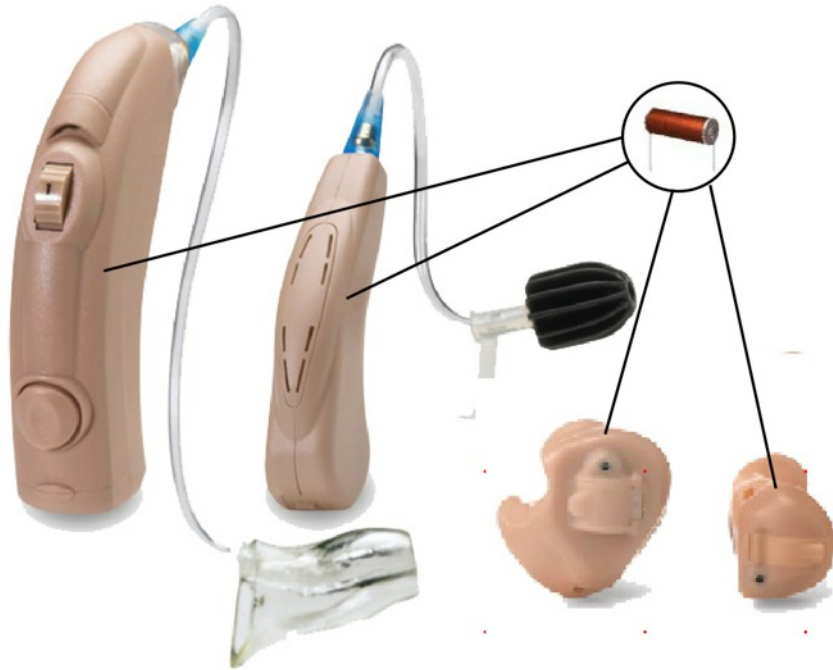
# TYPICAL HEARING DEVICE PROCESS



- What is the distance from loudspeaker to hearing aid?
- How much background noise will be encountered?

# Solution: T-COIL HEARING AIDS

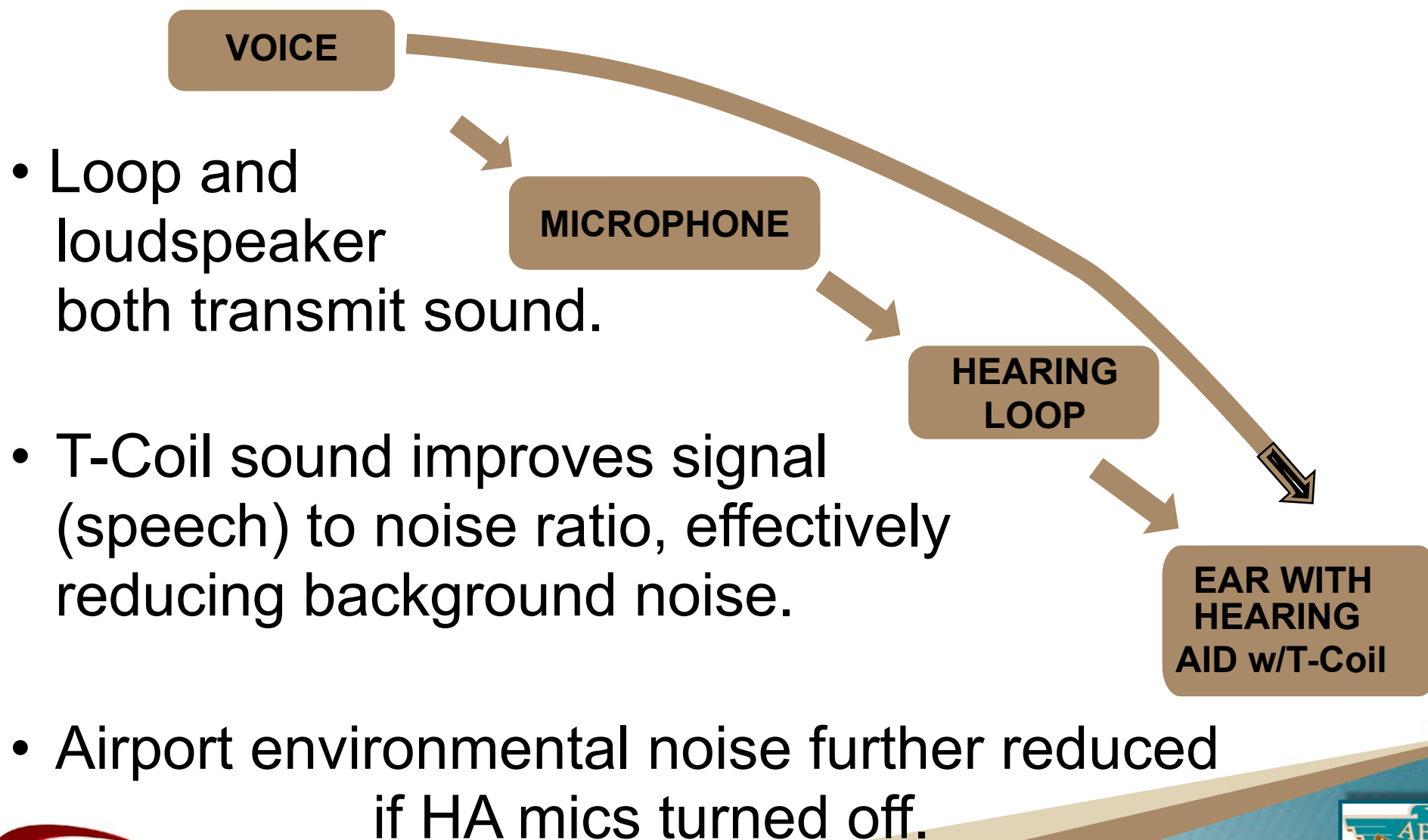
- ▶ 70% of hearing aids have (or can be fitted with) telecoils.
- ▶ All cochlear implant processors today have T-coils.



- ▶ Hearing Loss Association of America reports that 84% of members have T-coils.
- ▶ 95% of hearing aids have T-coils in UK.

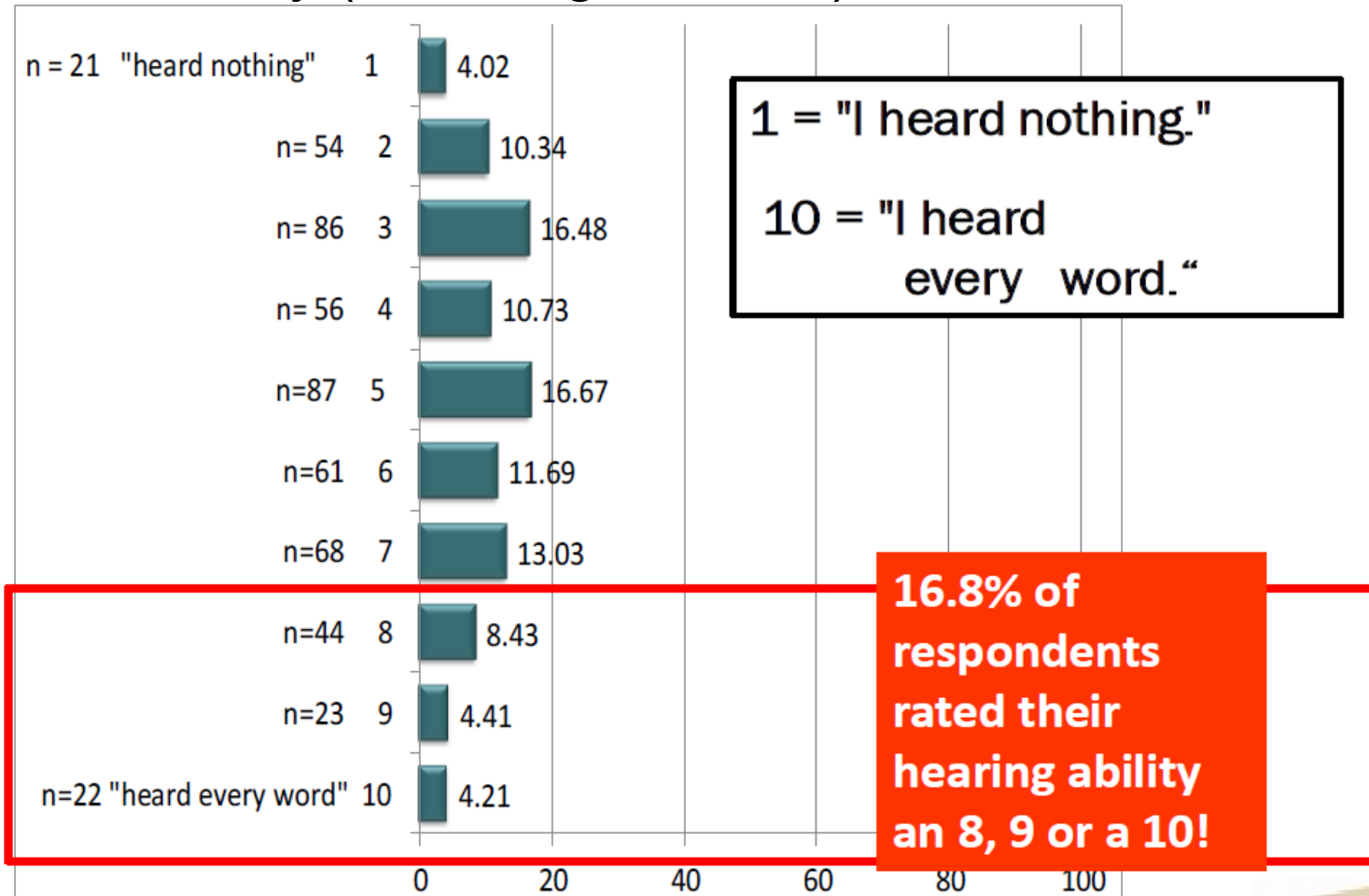


# T-Coil HEARING DEVICE PROCESS



# Solution: HEARING LOOPS

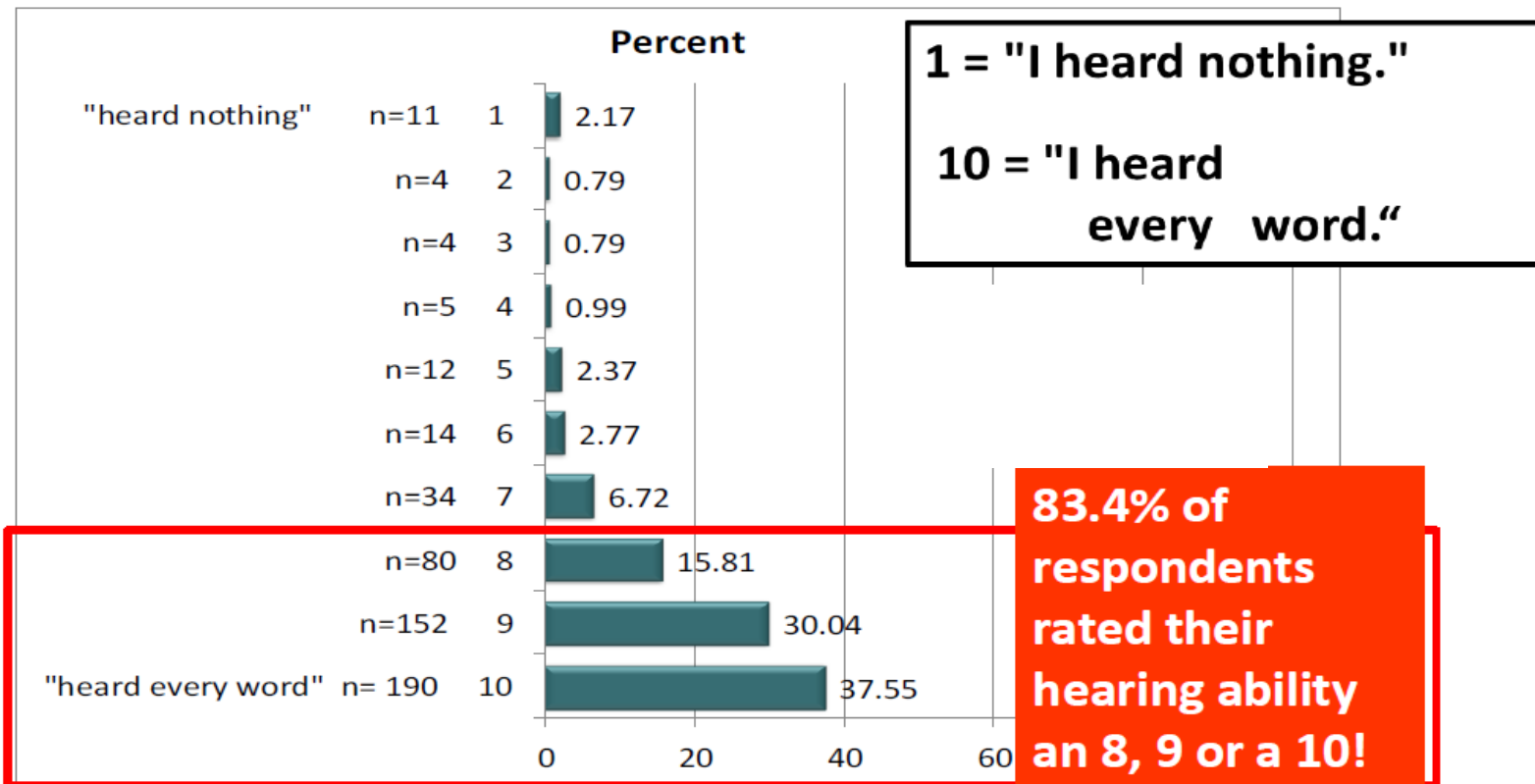
How well did you hear in the venue using your hearing devices only (not using telecoils)? n=522



Hearing Loop Survey – Juliette Sterkens, AuD

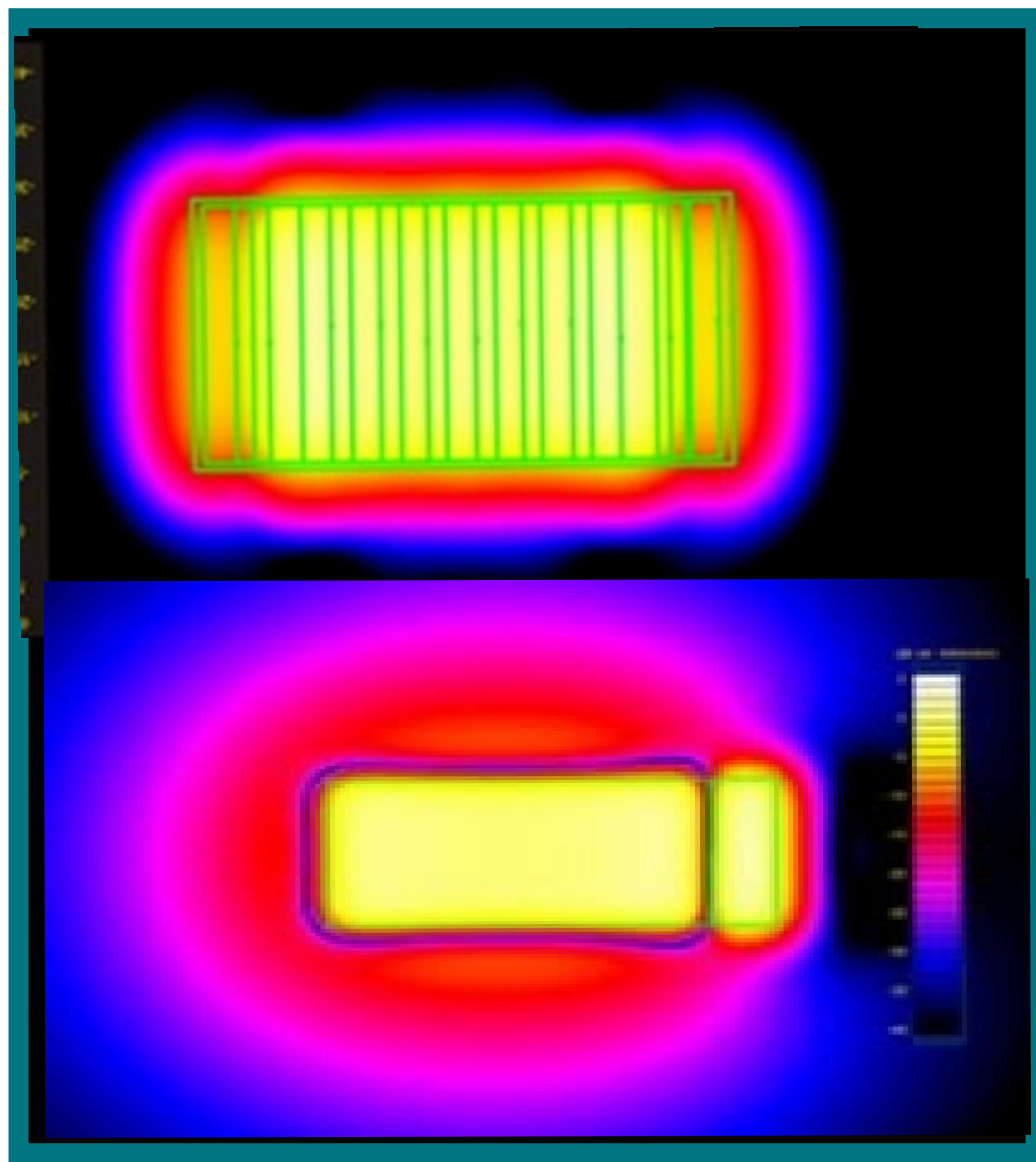
# Solution: HEARING LOOPS

How well did you hear in venues using your hearing aids/Cis in the hearing loop (using telecoils or a loop listener) n=506



Hearing Loop Survey – Juliette Sterkens, AuD

# Solution: HEARING LOOPS



## 2 types of loops

Phased array - little spill.  
Used at gates etc.

Perimeter loops - lots of  
spill. Used at food  
court, waiting areas etc.

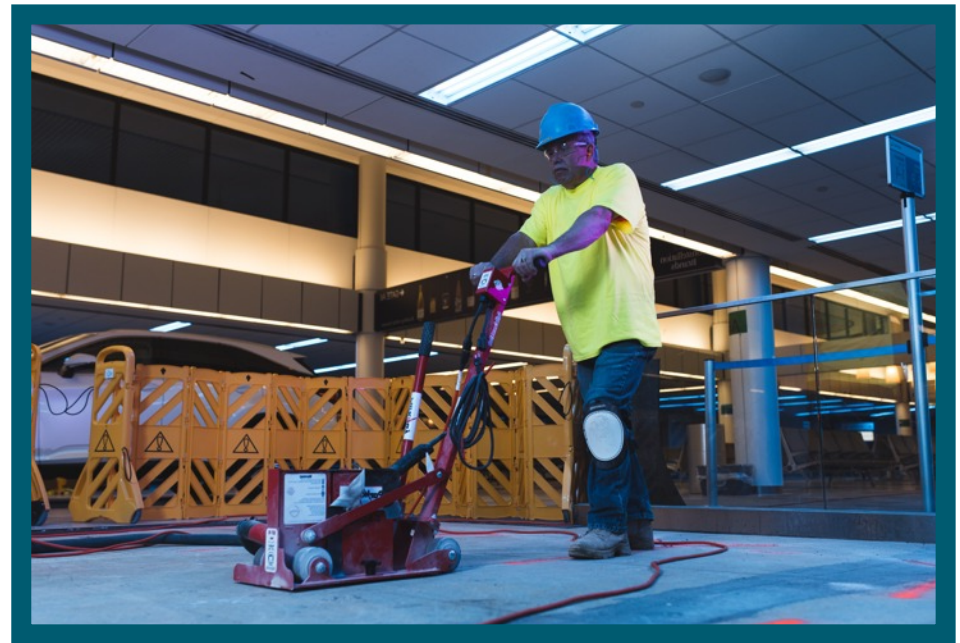


# Solution: HEARING LOOPS



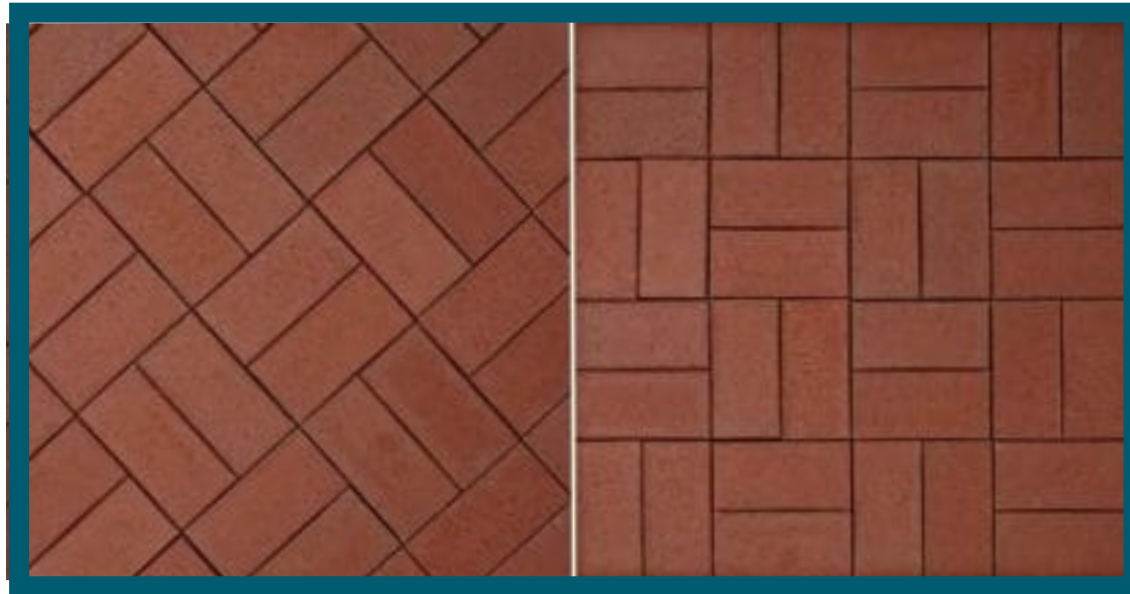
Copper tape  
under carpet

Copper loop wire in  
scored concrete

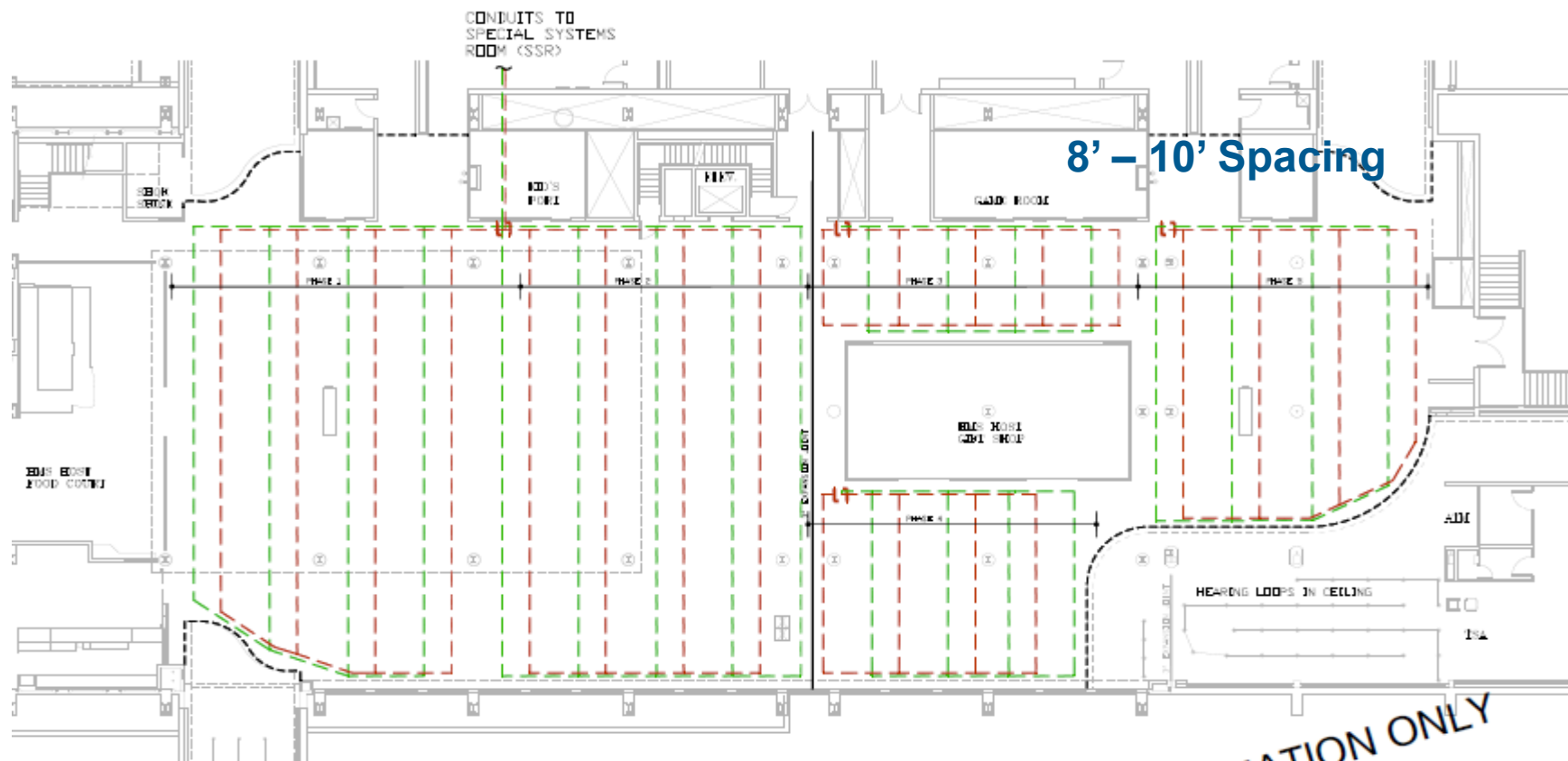


# Solution: HEARING LOOPS

Scored grout in brick/tile floors



# Solution: HEARING LOOPS



Hearing Loop Installation Phasing

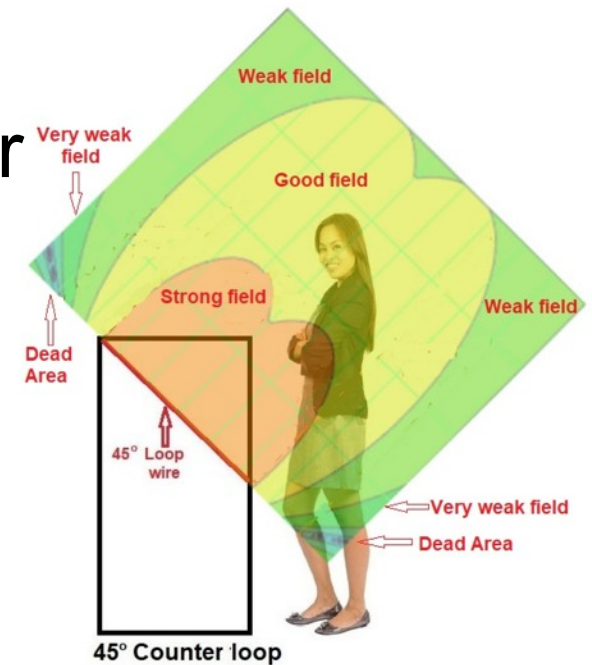
SCALE 1/8" = 1'-0"

INFORMATION ONLY

# ANOTHER FORM OF LOOPS



At the Rochester, NY and some other airports they have also used counter loops at ticket, information and other counters, in



security and various other locations where travelers interact with airport or vendor personnel.



# PRIORITY ANNOUNCEMENTS

FLIGHT, SECURITY, PAGE  
ANNOUNCEMENTS

PUBLIC ADDRESS SYSTEM-  
AMPLIFIER

HEARING LOOP

HEARING AIDS  
WITH T-Coils

- Pre-recorded and “live” announcements would go through the public address system amplifier.

# GATE ANNOUNCEMENTS

BOARDING, PAGE PASSENGER  
FLIGHT DELAY, GATE CHANGE

GATE SYSTEM AMPLIFIER

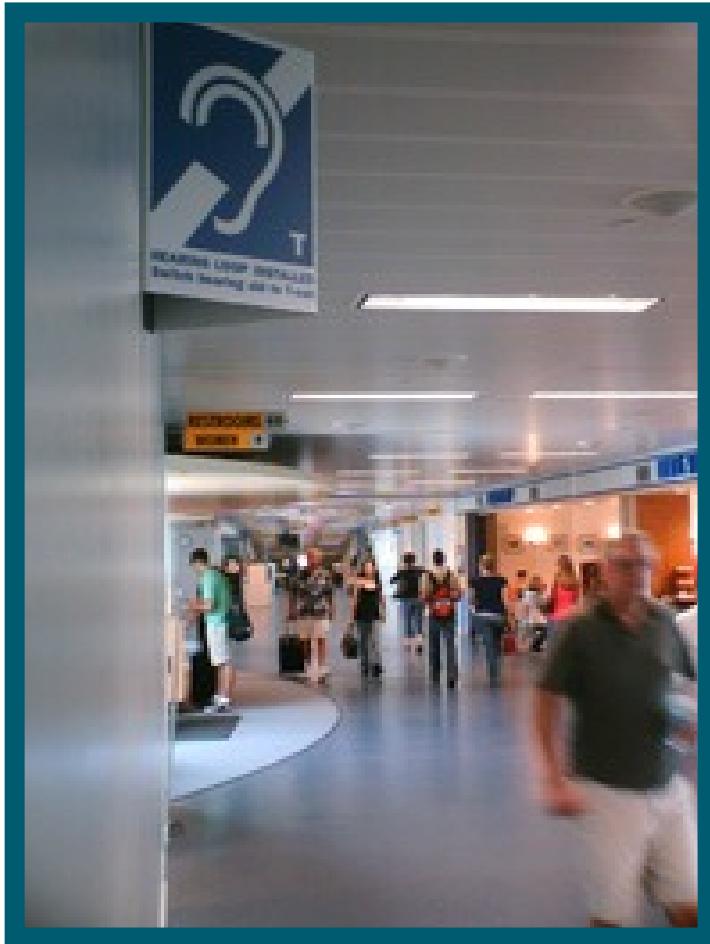
HEARING LOOP

HEARING AID  
WITH T-Coil

- Announcements pertaining only to passengers at that gate would go through the system exclusive to it.

# Solution: HEARING LOOPS

Superior communication access



# HEARING LOOPS - COST

Cost for various phases of installation  
Gerald Ford International - Grand Rapids, MI

- ▶ Phase I – 2008 - \$3.18/s.f.
  - Installed above ceiling
  - Approx. 43,000 s.f.
- ▶ Phase II – 2011 - \$7.72/s.f.
  - Installed prior to carpet replacement
  - Saw cut concrete floor; epoxy filler
  - Night work
  - Approx. 14,200 s.f.
- ▶ Phase III – 2014 - \$2.74/s.f.
  - Installed above ceiling
  - Approx. 12,000 s.f.



# HEARING LOOPS - COST

Cost per gate for recent installations:

**\$10,000 to \$30,000 depending on variables**

Richard Mckinley - Contacta Inc.

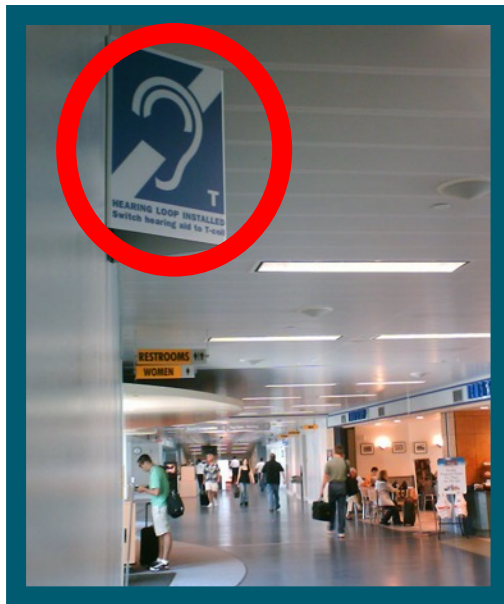
**\$18,000 average per gate**

Tim Vander Meer, Hearing Loop Solutions

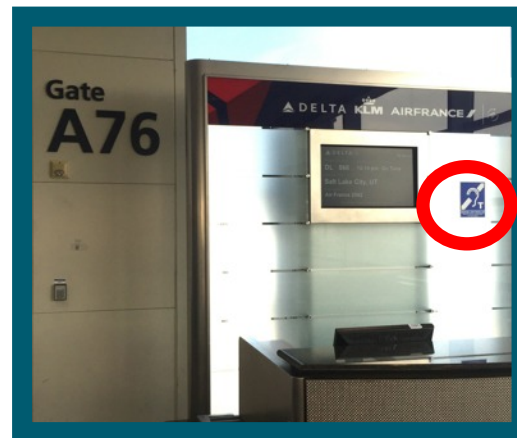
# HEARING LOOPS - SIGNAGE

Good signage critical to ensure use.

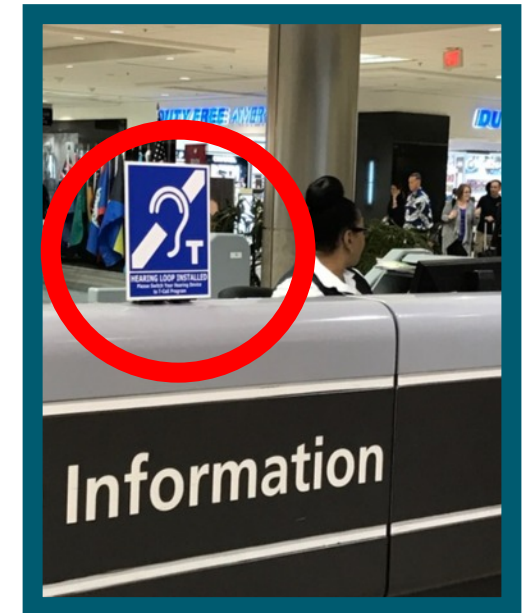
Loop symbol used in all promotional material.



A concourse at Gerald Ford airport, Grand Rapids, MI



Delta Airlines gate at Detroit Metropolitan Wayne County



Information counter at Hartsfield-Jackson Atlanta

# US AIRPORTS USING HEARING LOOPS

ATLANTA, GA

ROCHESTER, NY

PENDING:

AUSTIN, TX

SANTA BARBARA, CA

MEMPHIS, TN

DETROIT, MI

SARASOTA/BRADENTON, FL

NASHVILLE, TN

FORWAYNE, IN

MINNEAPOLIS/ST. PAUL, MN

NYC (LAGUARDIA), NY

GRAND RAPIDS, MI

PHOENIX, AZ

2 OTHERS MAJOR

KALAMAZOO, MI

SOUTH BEND, IN

MUSKEGAN, MI



