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T Coils and Hearing Loops: Important to Client Satisfaction

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Learning Outcomes

After this course, participants will be able to:

- Describe telecoil orientation in custom and behind the ear hearing instruments.
- List three telecoil programs, and when and where to use them.
- Explain one in-office and one out-of-office telecoil validation measure.
Session Outline

- T Coil & Hearing Loop Basics
- T Coil Verification/Validation
- Fostering Hearing Loop Installations
- Questions & Answers

Hearing Assistance Technology (HAT) & T Coils

- FM Systems
- Infra Red Systems
- Hearing Loop Systems
- T Coils are required for HI/CI Users
Hearing Loops: Perimeter Loop

Hearing Loops: Phased Array
Specifying T Coils

- Talk with manufacturers
- Include T Coils in our instruments
- Know the capability/features of our T Coils
- T Coil orientation

Let's expand...

T Coil Orientation in a Magnetic Field

- Vertical T Coil
- Horizontal T Coil
The Importance of T-Coil Position in a Magnetic Field

Image © C. Compton-Conley, PhD

Programming T Coils For Use In a Hearing Loop

Provide manual T Coil programs

Phone vs ALD/HAT programs

M/T vs T only program

Let's expand...
T-Coil Programming Tips

1. **Open/RIC/RITE:** consider manual T-coil only for loop program

2. **Closed/Occluded Fittings:** Consider manual M+T but take listening situation into account:

3. **Considerations for HI/CI Users with FM & IR Receivers (Neckloops)**
   - Amplified neckloops
   - Widening the neck loop
   - When a neckloop signal is just too low…..
   - Explain clients have a right to a “reasonable accommodations” under the ADA

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**Programming T Coils For Use In a Hearing Loop**

- Provide manual T Coil programs
- Phone vs ALD/HAT T Coil programs
- MT vs T Only program
- T Coil Gain & Frequency Response
- Let's expand....
Comparing Mic & T Coil
Gain/Frequency Using Spec Sheets

Magnetic input to T coil

31.6 mA/m (magnetic input) is the equivalent of 60dB (acoustic input)

Comparing Mic & T Coil
Gain/Frequency Using Spec Sheets

Hearing Instrument 1

Hearing Instrument 2

<table>
<thead>
<tr>
<th>Acoustic Input</th>
<th>Equivalent Magnetic Input</th>
</tr>
</thead>
<tbody>
<tr>
<td>65 dB SPL</td>
<td>56.2 mA/m</td>
</tr>
<tr>
<td>60 dB SPL</td>
<td>31.6 mA/m</td>
</tr>
<tr>
<td>50 dB SPL</td>
<td>10 mA/m</td>
</tr>
</tbody>
</table>
What is SPLITS?

Coupler SPL for an Inductive Telephone Simulator

The ANSI SPLITS test allows the MFR to orient the instrument for optimum output – this may mean holding the instrument sideways to obtain best results.

What is SPLIV?

SPLIV – Coupler SPL in Vertical Magnetic Field

The ANSI SPLIV test requires the instrument is oriented vertically (or as worn on the ear).
Determine if the HAs are capable of matching the Telecoil gain to the Mic gain

Look the ANSI Specs & compare to Reference Test Gain (RTG)

1. Do the SPLITS & RTG gain match?

2. More important: Do the SPLIV and the RTG match?
   (Ask MFR to provide in a format that makes comparing easy)

3. Note: If the T-coil is mounted vertically, or nearly so – (as is the case w/ most BTEs): SPLITS = SPLIV = RTG

However, ANSI Specs don’t tell the whole story
Verification is needed

(Some hearing aids do not perform in T-coil mode from what you see on your fitting screen)
Some MFRs match T-coil to mic responses very well
Query your suppliers
Insist on Mic vs. T-coil
Transparency

Oshkosh Convention Senior EXPO – Out of the Loop
– using the microphone on the iPhone
Oshkosh Convention Senior EXPO – in the Loop  
– using the telecoil equipped LoopBuds

Verify Telecoil program in a HIT box  
once the fitting is finalized
Verifying T Coils for hearing loop use

Telecoil verification with
Aurical by Otometrics
(in Freestyle mode)

Why match Mic to Telecoil?
Ledda K, Valente M. In press – JAAA 2019
Sentence and word recognition scores were improved when the t-coil was programmed to match the mic response than when listening via a t-coil set to manufacturer default setting.

Telecoil Validation – is the T-coil setting right for your client?

- Call client at home and verify he/she is able to use telecoil function & hear adequately loud and clear enough
- Check telecoil setting in your calibrated waiting room loop
- Loop your receptionist’s front desk
- Install a floormat in reception area
- Refer clients to a local looped venue (or an ALS with neckloops)
- Refer clients to a local HLAA chapter Nearly all chapters utilize a hearing loop and offer CART where hearing aid users can try out their telecoil setting

Note: A microphone on your receptionist’s desk is required.
Familiarize yourself the IEC60118-4 Hearing Loop Standard

Fit clients with "transparent" telecoils & verify the telecoil response in a HIT box – query HA MFRs

Loop your waiting room to validate T-coil setting & demo

Educate clients about rights under the ADA, the different Assistive Listening Systems & refer to local (looped) venues – see www.ALDLocator.com or www.LoopFinder.com

Find/foster local installers – www.Hearingloop/vendors.htm

Identify places clients would benefit from loops. Make one hearing loop happen – and build from there. Engage clients.

Build loop awareness via community lectures (e.g. Rotary clubs) social media and post loop info on your website.

Empower clients by providing handouts that promote self-advocacy (next slide)
Additional Resource Materials

References


Useful websites:
www.HearingLoop.org
www.LoopWisconsin.com
www.hearingloss.org/programs-events/get-hearing-loop/

For further information: Contact Juliëtte Sterkens, AuD jsterkens@hearingloss.org
Karen MacLennan, AuD dmaclellan@gmail.com

Thank You for Your attention

Questions?