



## IS HEARING AUGMENTATION OLD TECHNOLOGY?

Some people have suggested that hearing augmentation systems (i.e. hearing loops, FM, infrared) are old, superseded technology.

Here are some of the reasons they put forward:

### **Myth 1: Hearing aids have improved over the years and are now sufficient by themselves**

Hearing aids are certainly so very much better than when the first international standard for hearing loop systems was created in the 1970s. Nevertheless, hearing aids and cochlear implants cannot restore damaged or dead nerves in the human ear. Cochlear implants typically substitute a mere 22 signals for the ear's 30,000 nerves. So the ear needs more help than just a modern hearing aid or cochlear implant. As I have previously worn hearing aids for over 40 years, and now a cochlear implant user of over 10 year, I can personally attest to this.

### **Myth 2: Hearing loop systems are superseded by other technology**

There are only two technologies that are available for connection to a venue's PA system - hearing loop systems, and receiver style systems. This is reinforced in the National Construction Codes (previously referred to as the Building Codes of Australia) and the Premises Standards. Only these two types of systems (which are both connected to the venue's Audio system) are capable of dealing with the background noise and reverberation.

Hearing Loop Systems are the only universally accessible system for those hearing aids with telecoils, and cochlear implant. In addition, consumers prefer these systems as they don't need to obtain a receiver.

Venue operators prefer hearing loop systems because they don't need to provide receivers.

**The International Hearing Access Committee, in June 2019, stated *"it is reasonable to believe that HL [hearing loops] ... usage will continue for the next 10-15 years and beyond."***

**Myth 3: The newer technology is better**

There certainly are other communication technologies in use around the world for the various communication devices, such as Bluetooth and the digital systems (think WiFi) that we use for our phones and computers. There are hearing aids that use these technologies, but they are propriety systems, and therefore not universal. No other technology is as universally useful as the hearing loop system. [Page 4](#) has some reasons for this.

**Myth 4: Use your Smart phone as a receiver**

There are systems that can connect to a public Wi-Fi system, allowing a person to use their own smartphone to listen to the proceedings.

- The NCC requires receivers to be provided by the venue, not by the patron.
- Latency must be less than 40mS for any hearing augmentation system. Latency in public Wi-Fi systems using smartphones is typically 100 to 800mS – which means that the sound is received significantly later than when a person makes the sound – which prevents lipreading, as well as playing havoc with a person's hearing who only has a hearing aid in one ear, or has an open mould.
- Many deaf and hearing impaired users only use their phone for text, not as a listening device.
- Some attachments used by hearing impaired users do not allow streaming from apps.
- Some people can only use their phone for basic yes or no questions due to their limited speech perception, not for conversations.
- Hearing augmentation must provide binaural (both ears) listening for the user. Mobiles generally only provide monoaural listening, and attachments don't have sufficient volume.
- Cheaper phones often don't provide sufficient volume.
- Many older people don't use smartphones, only push button mobiles like the Telstra Easycall.

**Myth 5: SoundField systems are the modern-day replacement**

SoundField systems are wonderful for the purpose for which they are designed – children with fluctuating hearing loss. This is highlighted in that students in the class room use ALDs in addition to the SoundField system to be able to hear. If used as hearing augmentation, receivers must also be provided so that the SoundField system is classified as a receiver system. Remember, NCC requires the venue to provide the receivers, not the patron.

Hearing Connections also supplies [SoundField](#)

**Myth 6: Bluetooth is the answer**

The power requirements of Bluetooth make it impractical for use in hearing aids for long period of times. Some hearing aids are advertised as having Bluetooth. However, such hearing aids only use it within a range of generally up to 5 metres of the Bluetooth transmitter (a proprietary transmitter of the same brand, or a proprietary app on a smartphone).

Bluetooth hearing aids are typically top of the range, and only those prepared to pay for these models have this facility. In addition, there are many Bluetooth “profiles” – and the hearing aids only have one or a few of these protocols. It is estimated that less than 0.1% of hearing aids used in Australia today have Bluetooth capability.

**Myth 7: Assistive listening devices (ALDs)**

ALDs are personal hearing systems, owned by the user, and typically digital FM systems (usually in the form of a microphone and receiver). They are very valuable in communicating in a classroom lecture style situation or one to one - however, they are not hearing augmentation systems, and do not connect to venue amplification systems.

Many people won't use this as they have to arrive early and negotiate with the lecturer every time. It is a legal requirement that a hearing augmentation system must be supplied by the venue and connected to the venue's Audio system.

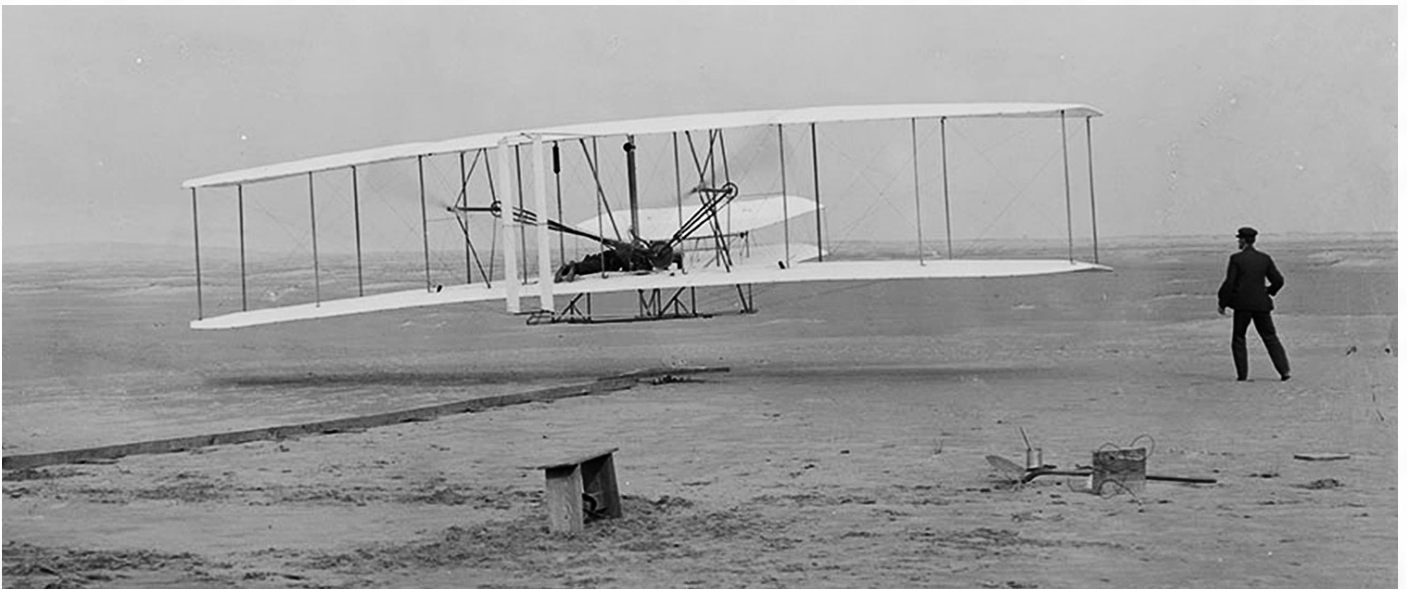
**Myth 8: Captions are good enough**

Captions are wonderful for prepared messages or videos. For live announcements, particularly emergency announcements, captions are forgotten about. In addition, some people have dyslexia, and not everyone can read at the rate of the spoken word (which is generally between 100 and 130 words per minute).

Then there are people who have issues with vision – fine at short distances but not able to read a screen. Captions should only be used as a supplement, not in place of, hearing augmentation.

**Technology old & new**

There is no doubt that technology has advanced a great deal over the years. Think of the Wright brothers first flight in 1903 their plane had wings, seat, engine and wheels – and so do modern planes. It was the wonder of the world! But thankfully a modern passenger plane is greatly advanced — same technology, but enormously advanced (fortunately).



Similarly, although hearing loop systems were first used in the 1940s (and other technologies even earlier), the technology is vastly improved, giving much improved results for the user.



### **What do the consumers think about Hearing Loop Systems?**

In 2014, a survey of 866 people was conducted in the USA, with the following results.

The people surveyed were asked to rate their hearing device (hearing aid and/or cochlear implant) alone, and then to rate it with a Hearing Loop System.

The following rated 8 or higher out of 10:

Hearing aids and/or cochlear implants only	<b>13.5%</b>
With a hearing loop system	<b>86%</b>

This research may be viewed [here](#).

### **Which is better – Hearing Loop or Receiver systems?**

When specified and installed correctly, both systems will technically provide users with the same results.

However, some people won't use a receiver system (particularly hearing impaired teenagers—because they perceive it as embarrassing), and some users can't handle the receivers for age-related reasons--dexterity or mental health issues.

There are significant advantages for both users and venue providers for using the Hearing Loop System rather than a receiver-based system.

### **Why do users prefer the Hearing Loop System over receivers?**

- Hearing loop systems are universally compatible with any brand of hearing aid or implant that has a telecoil.
- Users retain their dignity by not identifying themselves as having a disability.
- Users do not suffer the inconvenience of obtain/return of receivers and failures of associated batteries and attachments.
- Easy to use in transient communication situations such as service desks and kiosks.
- Simple in concept and design and does not require user training.

### **Why do venue providers prefer the Hearing Loop System?**

- Staff do not have to hand out and collect receivers.
- Less staff time communicating with users and maintaining receivers.
- No ongoing costs for maintenance/loss of receivers and batteries.
- Not open to DDA complaint for lack of working receivers or attachments.
- Satisfied customers

### **Conclusion**

It should be clear from the above that hearing augmentation systems are absolutely vital in the modern world, as well as being a legal requirement.

Hearing Loop Systems provide a raft of advantages for both the users and the venue providers, and should be the first choice when choosing which system to install.

**Hearing Connections can provide a full service for all hearing augmentation systems.**

## References

National Construction Codes (previously called Building Code of Australia - BCA); and  
Disability (Access to Premises - Buildings) Standards 2010

### **DP9 — The Performance Requirement of DP9 states:**

An Inbuilt communication system for entry, information, entertainment, or for the provision of a service, must be suitable for occupants who are deaf or hearing impaired.

### **The Deemed to satisfy requirement of DP9 states:**

#### **D3.7**

- (a) A hearing augmentation system must be provided where an inbuilt amplification system, other than one used only for emergency warning, is installed etc.
- (b) If a hearing augmentation system required by (a) is—
  - i) an induction loop, it must be provided to not less than 80% of the floor area of the room or space served by the inbuilt amplification system; or
  - ii) a system requiring the use of receivers or the like, it must be available to not less than 95% of the floor area of the room or space served by the inbuilt amplification system, and the number of receivers provided must not be less than —  
...(See NCC for details)
- (c) The number of persons accommodated in the room or space served by an inbuilt amplification system must be calculated according to D1.13

### **AS 1428.5 – 2010 — *Communication for people who are deaf or hearing impaired***

This standard may be downloaded [here](#).

**NCC** may be downloaded at no charge from [ncc.abcb.gov.au](http://ncc.abcb.gov.au)

## FURTHER INFORMATION

If you have any questions, email Andrew Stewart: Managing Director of Hearing Connections at [andrew@hearconnect.com.au](mailto:andrew@hearconnect.com.au)

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### About the Author

Andrew Stewart is qualified in electronics and has been leading research into hearing augmentation systems for over 30 years – including designing, installing, testing and commissioning of Hearing Augmentation Systems. He and his team have conducted their own research of comparison methodologies of installing hearing loop systems and designed and constructed test equipment. He's been involved in installations at Sydney Opera House, First Class Qantas Club Singapore, art galleries, museums, theatres and many others.

Andrew was a key leader in the development of AS 1428.5 - 2010, the authoritative document on Hearing Augmentation in Australia. He is also a life member of Deafness Forum of Australia (the peak body for hearing impaired people in Australia) and continues to represent them, as he has on many committees for over 20 years. Andrew has been hearing impaired all his life, with a progressive loss, and now wears two cochlear implants. He has 9 other family members who wear hearing aids and/or cochlear implants.

### Why choose Hearing Connections

**Hearing Connections is built on experience of Andrew Stewart, who:**

- Has been **wearing hearing aids** since age 7, and now wears two cochlear implants.
- Knows both sides of the story – the **lived experience**, and the **electronics qualifications**.
- Has been **specialising** in Hearing Augmentation Systems for over 33 years.
- Was **instrumental** in the writing of the definitive Australian Standard **AS 1428.5**.
- Has conducted **research and development** of Hearing Augmentation systems for improved outcomes.
- Has over **33 years of design, installation and commissioning** of Hearing Augmentation systems (loop systems, FM systems, sound field systems and public address systems) for a range of public access buildings, from small halls to significant buildings and venues, including Sydney Opera House and airports.
- **Lectures** in Hearing Augmentation for building professionals.
- Provides **training** in Hearing Augmentation for Access Consultants, Building certifiers and surveyors, and architects.
- Over 20 years of **advocating** for the needs of deaf and hearing impaired people.
- Is a **life member** of Deafness Forum of Australia.
- Has won **numerous awards** for service in advocating for the needs of deaf and hearing impaired people.

### Legal

This document is not a legal interpretation of the NCC. It is the opinion of the principal of this company and is based on more than 30 years of experience with hearing augmentation. He himself is hearing impaired. The information provided is general advice only and does not take into account your building site objectives, building site design and or building materials used or other relevant factors and cannot be relied upon for your specific needs.

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