B Michael Small comments on Hearing Augmentation that;

"Whether or not operators can achieve a level of quality on conveyances that delivers a message equivalent to the message received by people without hearing impairment raises technical questions I am not competent to assess given the level of expertise required in this area."

This point is paraphrased in several other Submissions and deserves a further explanation.

Hearing Augmentation is the ability to augment acoustic messages, otherwise only available to those with normal hearing and has the following features.

(1) The volume or sound level must be increased relative to the norm.

(2) The output speech signal (to the ear) must correlate almost perfectly with the input signal (coming from the mouth). Those with normal hearing can decipher speech smeared by reverberation and background noise rather well. Hearing impaired, deaf and some blind people cannot!

Note: Technology has improved rather dramatically since 1992 and there are a number of now inexpensive test procedures that estimate the degree of correlation as an index between 0 (for random noise) to 1 (for perfect correlation). Different measurement techniques result in slightly different values, but an acoustic consultant knows when the speech quality is excellent and better than "normal excellent"

(3) Hearing aids wearers must know when and where hearing augmentation is operating. It is not satisfactory to listen to speech through a combination of the microphone and T-switch inputs, when using hearing aids. A mixed signal often results in a combination of sounds similar to reverberation. So the coverage space must be defined very accurately in order to make the change over.

C By telling us that there are no performance parameters for Hearing Augmentation, the ARA is stating that the installation process is completely unregulated! This is made worse after the Hearing Augmentation installation has been specified and payments made between a contractor and sub-contractor if then the real customer or beneficiary never knows about the installation. This situation is costing the Government and the community millions of dollars each year.

Regarding the Audio-frequency Induction Loop systems as a solution for hearing augmentation, the only current compliance value is a magnetic field strength but this does not measure speech quality. Finally, most of the interference, claimed by ARA and others, is caused by conductors and steel reinforcement being placed too close to the Loop cable.

There is much work to be done?

Regards,

Peter Kerley