



Communication Headsets: Hearing Protection And Safety For Hearing Impaired Workers

Safety professionals are often confronted with a conundrum: How to protect the hearing of a known hearing impaired worker while at the same time ensuring his/her safety as well as the safety of others working around them?

The notion that that unprotected noise exposure to a severely or profoundly deaf worker is of little consequence is misguided.

Consider that profoundly impaired persons have (albeit audiometrically immeasurable) some level of *residual* hearing. Residual hearing refers to the present level of hearing function. For a person with acquired hearing loss, residual hearing is the amount of hearing function present after the acquired loss. For the congenitally deaf person, residual hearing is the level of hearing function at birth and any that now remains.

Residual hearing to a deaf person is analogous to detectable light to a blind person. The faintest detection of environmental noise cues and vibration to a deaf person is invaluable.

Hearing protectors should be fitted to a deaf worker. A mildly attenuating hearing protector is best for the profoundly deaf worker to protect residual hearing. Caution is advised not to over-attenuate, so not to create a safety hazard in situations where environmental cues (such as vibration and mechanical alarms) are missed.

For moderate to severely hearing impaired workers, protecting residual hearing is vital. This category of worker is very prominent in industry. It is also this type of worker who has yet to master those “subtle” skills of adjustment and compensation possessed by their profoundly deaf counterparts. This may create safety hazards for them and those around them.

Until recently, little (affordable) technology was available to successfully fit hearing protectors to severe and profoundly hearing-impaired workers. Today, most hearing protector manufacturers offer such devices. These devices are classified as either *passive* or *active* hearing protectors, usually seen in the form of an earmuff.

Passive hearing protectors create a known acoustical response to noise without the assistance of built-in electronic circuitry. Commonly used earplugs and canal caps are passive hearing protection devices.

Certain passive earmuffs are engineered to attenuate certain high frequency noise while allowing low frequency energy where most speech energy is contained.



Active hearing protectors use built-in electronic circuitry to attenuate noise, block undesirable frequencies detrimental to communication, and amplify “preferred” noise to a safe level to facilitate better communication. Usually in earmuff form, active protectors are most effective for those with severe hearing impairment and for those in particularly safety sensitive jobs in moderate noise not exceeding 92 dBA (TWA). When noise levels exceed 92 dBA, amplification is “clipped” and units become passive devices. Users of active devices also benefit from “stereo” reception, providing noise localization and directionality. Output on most active protectors is limited to 82 dB, assuring safe levels of amplification and adequate noise level attenuation.

We urge that “special need” fittings such as those aforementioned be administered under the direction of experienced and qualified safety professionals, such as audiologists, industrial hygienists, or technical support representatives of the manufacturer.

As a complimentary service, T K Group provides hearing protector evaluation/fitting guidance to our client associates.

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