Dispelling the G616 Myth

Headset products that conform to a 102 dB limit level in line with the G616 Guideline do not prevent acoustic shock nor do they provide any protection for the headset user from acoustic shock injury. In this whitepaper, Polaris Communications explains why.

What is the ACIF G616:2006 Guideline?

It is well-known that exposure to loud noises over a long period of time on the telephone can potentially cause long-term damage to a person's hearing. Acoustic shock, on the other hand, is given relatively little media coverage despite its impact on an individual's hearing health being as injurious as long-term noise exposure. Primarily occurring in contact centres, acoustic shock is used to explain exposure to an unexpected, sudden and usually high-pitched sound transmitted through the call handler's headset. These sudden acoustic 'shrieks' can be caused by interference on the telephone line, misdirected faxes, power supply failures or by man-made sources such as crying babies or malicious callers blowing whistles down the telephone line. Headset users are increasingly at risk of exposure to these dangerous sounds and, consequently, both physical and psychological injury, because a headset – unlike a traditional phone handpiece – cannot be dropped or quickly removed from the ear as soon as the noise is heard.

The Australian Communications Industry Forum (ACIF) G616:2006 Acoustic Safety for Telephone Equipment Guideline is an advisory-only document intended to "provide guidance to organisations that have staff who use telephone equipment for extended periods of time ... in order to reduce the risk and severity of acoustic shock". It aims to provide additional but optional specifications that "organisations can call up if they wish to increase the protection against acoustic shock beyond that specified" in Australia's industry standard, the AS/ACIF S004:2008, which limits maximum output sound pressure levels in headsets to 118 dB (*AS/ACIF S004*, 2008, p. 15).

The G616's primary focus is on limiting sound output levels in headsets to 102 dB which, while safer for headset users than that of the virtual 'zero protection' provided with the 118 dB level outlined in the S004, fails to address the occurrence and prevention of acoustic shocks which has led to confusion within the contact centre industry. It is important for concerned parties to realise it is difficult to determine an absolute level below which acoustic shock is not experienced and that a lower volume level will not necessarily protect the end-user from acoustic shock.

What is the G616 Myth? The G616 Myth insinuates that:

1. **Products which follow the G616 Guideline will protect users from acoustic shock injury;**
2. **Headset products can be G616 compliant;**
3. **The G616 Guideline is an industry standard and the pinnacle in acoustic safety for headset users.**

Despite the above claims being baseless and inaccurate, contact centre industry vendors and end-users commonly accept and believe them proving the Guideline to be ambiguous and open to misinterpretation. The myth is further affirmed, and even driven, by manufacturers who promote their G616 "compliant" products as providing the best acoustic safety solution for headset wearers.

Expanding on the G616 Myth:

1. Primarily, the G616 Guideline lends confusion to the contact centre industry as to what provides true protection from acoustic shock for headset wearers. It is crucial that the industry understands the 'dominant factor' of acoustic shock injury is not high volume levels alone but rather the unexpected nature and sudden onset of sound outside of the headset-wearer's control, referred to as an acoustic shriek.

... the 'dominant factor' of acoustic shock injury is not high volume levels alone but rather the unexpected nature and sudden onset of sound outside of the headset-wearer's control ....

While headsets may be manufactured to international and/or national standards such as the AS/ACIF S004 or take on the recommendations outlined in the G616, they provide minimal protection against unexpected acoustic shrieks.

"Following the guidance provided by this document does not guarantee avoidance of acoustic shock." – ACIF G616:2003 Disclaimer

Incredibly, the G616 Guideline itself specifically states on the first page as a disclaimer that "following the guidance provided by this document does not guarantee avoidance of acoustic shock". Unfortunately, this statement is easily passed over and disregarded by those that use it to promote their products as protecting against acoustic shock.

2. The G616 Guideline has misled contact centres into believing that products which take on the G616 recommendation of limiting sound output levels to 102 dB can prevent headset users from experiencing acoustic shock incidents.

Some manufacturers further aggravate this confusion by presenting the G616 as if it were, in fact, an industry standard and that by "complying" with it, that their products prevent acoustic shock. These manufacturers and vendors prefer to simplify the sale process by saying that because the G616 requires a limit level of 102dB their product complies and, therefore, provides the maximum acoustic safety possible including protection against acoustic shock. Not only does this contradict the G616 role as a guideline rather than a mandatory requirement but it is most certainly inaccurate. The G616 is a guideline. It is not a standard. It does not provide or enforce any mandatory or legal requirements. Therefore, telephone equipment *cannot* be G616 'compliant'. In fact, as the G616 Guideline document advises: "compliance with ACIF G616 cannot be claimed as it is only providing guidance". Despite this and as a consequence of a the guideline's self-regulation, there are certainly manufacturers out there who make this claim and take advantage of a lack of consumer technical knowledge and confusion about acoustic safety requirements within the contact centre industry.

The G616 is a guideline. It is not a standard. It does not provide or enforce any mandatory or legal requirements.

3. Overwhelming feedback from the contact centre industry finds that many customers are confused as to whether the G616 is a mandatory standard which telephone equipment must comply with or not. Because the topic of acoustic safety can be a complex and confusing subject and because the G616 is a significantly technical summary document, it is never properly read nor understood by headset users or contact centre managers. The terminology used, while implicit to experienced and informed people such as manufacturers and their test houses, is not so easily understood by the "lay-person".

Polaris has knowledge of a number of cases where consumers have been misled into thinking that by installing a device that claims to be G616 compliant, that they are protected from acoustic shock. This is absolutely incorrect and, unfortunately, end-users continue to be exposed to and experience acoustic shocks and, in some cases, serious injury.

What solutions are available to prevent acoustic shock?

Because the main factors of acoustic shock injury are related to the sudden onset of an unexpected sound at particular frequencies rather than to high volume levels alone, technology that completely prevents acoustic shrieks or high-pitched tones from reaching the ear of a headset user is essential in contact centres.

The only technology available on the market at the moment that *completely* eliminates acoustic shrieks and provides absolute protection against both acoustic shock and noise exposure is the Soundshield, a digital Acoustic Shock Protection Device, which Polaris Communications developed and commercialised over 10 years ago.

When a sudden, high-pitched tone does occur, the [Soundshield] device typically detects and blocks the transmission of the sound within a few hundredths of a second.

A worldwide first in acoustic safety for headset users, the Soundshield has become the ultimate benchmark for acoustic safety and subsequently implemented by Australian contact centre industry heavyweights. The Soundshield device provides frequency-dependent limiting and constantly monitors the incoming signal with the aim of differentiating between speech and high-pitched tones. When a sudden, high-pitched tone does occur, the device typically detects and removes the sound within a few hundredths of a second. Not only is it used and endorsed by major players in the contact centre industry but the benefits of the Soundshield's ability to monitor worker's noise exposure through the working day is essential in protecting headset users and in providing on-going risk assessment for the call centre workforce.

It is crucial that headset users and their employers understand that products that simply limit sound levels by following the G616 recommendation of a maximum output volume level of 102 dB *do not* prevent acoustic shock incidents. This is because lower sound levels *do not* eliminate the dominant factor in acoustic shock injury, namely, the unexpected and sudden onset of a sound.