

## Contact Centre Acoustic Safety & Comfort: An Employer's Responsibility, an Employee's Prerogative

*"Myself and most of the call centre staff are suffering from painful inner ear and nausea ... When a call comes through one can hardly hear the caller so [we] turn up the sound only to suffer deep voice distortion or [a] shrill piercing voice ... [the] volume seems to change in waves. At the end of the shift we are left with headaches, sickness, stressed out and various ear symptoms such as very sensitive pain in the ears... but worst of all, a painful throbbing which lasts all night ... A few girls will not take calls until this is sorted ... another girl was left in tears. Another one has visited her GP." (Anon., Call Centre Helper.com: forum, 2008).*

As in any business, contact centre employers have a responsibility to protect the health and safety of their employees by providing and maintaining a safe work environment. Under Australia's Occupational Health and Safety legislation, an employer is obliged to provide safe premises, safe systems of work and information, instruction, training and supervision within a suitable working environment to "ensure the workplace health and safety of each of the employer's workers" (*business.gov.au; Workplace Health and Safety Queensland, 2003, pp. 4 – 5*).

For a contact centre, the most significant hazards affecting employees in the industry include manual tasks (working posture, repetitive and endured actions, workplace design), occupational stress and headset use, in particular, the risk of acoustic shock (*Workplace Health and Safety Queensland, 2003, pp. 4 – 5*). While it is encouraging that the contact centre industry is recognising headset use and acoustic shock as key hazards, there is certainly confusion and a lack of understanding within the industry about the importance of acoustic safety as well as the potential for injury caused by the increasingly common incidence of acoustic shock. Further, audits of contact centres have revealed "inadequate (acoustic) environments, and acoustic incident protection, follow up measures and training" indicating a crucial need for contact centres to "ensure that adequate control measures" are put into place to prevent acoustic shock injury in their employees (Groothoff, 2005, p. 335). It is not enough that employers enact only the minimal changes to barely meet the legal standards in acoustic safety.

### Acoustic Shock Injury – Causes, Symptoms and Impact

*The occurrence of acoustic shock in contact centres and the "great deal of pain and suffering" it has caused has been extensively detailed in union publications and contact centre "folklore" as early as 1981 (Keeling, 2001, p. 3).*

With human resource as the most important asset of a contact centre, the benefits of creating a safe work environment and in identifying the importance of employees' acoustic health are numerous including the envisaged increase in employee productivity and retention rates in an industry with high attrition. The contact centre industry represents the "most rapid growth of any industry in the world" (Groothoff, 2005, p. 335) with an estimated increase from 8,000 employees in 1989 to more than 250,000 telephone headset-using employees in 2008, a trend that is expected to continue (Datamonitor, 2004, pp. 7 – 8; ATA, 2008).

Despite this industry expansion and the associated potential employment opportunities, the average turnover rate for the contact centre industry ranges "between 30 and 45 percent" (Reynolds cited in *The Global CC Community, 2009*). This high attrition can cost employers US\$15,000 – US\$20,000 per turnover (Muccia, 2011). Constructive changes to contact centres' approach and understanding of acoustic safety and comfort will not only benefit industry health and safety, but also makes fiscal sense for the employer and the industry by helping improve retention rates and avoiding medico-legal implications (Westcott, 2006, p. 54; Lawton, 2003, p. 249).

The rapid growth in the early 1990s of the contact centre industry, both in Australia and overseas, coincided with increased numbers of contact centre employees reporting “an unusual cluster of symptoms following exposure to a sudden unexpected loud sound” or an acoustic incident transmitted through the call handler’s headset (Westcott, 2006, p. 54; Lawton, 2003, p. 249). The term ‘acoustic shock’ was developed to explain such a sudden and unexpected burst of noise. Usually high frequency, an acoustic shock may be caused by interference on the telephone line, misdirected faxes, smoke or fire alarms from the caller’s end, power supply failures or by man-made sources such as crying babies or “malicious callers blowing whistles into the sending handset” (Lawton, 2003, p. 249; Groothoff, 2005, p 335). These sudden loud shrieks can cause the headset wearer to experience physical symptoms including:

- Headaches;
- Facial numbness;
- Tingling;
- A hollow feeling in the ear;
- Pain in the neck or jaw;
- A burning sensation;
- Tinnitus;
- Loss of balance or vertigo;
- And dizziness, with all these symptoms suggesting a “degree of insult or damage to the inner ear” (Lawton, 2003, p. 249; Westcott, 2006, p.55).

But it is not just the physical symptoms that need to be of concern to headset users and their employers. A range of emotional symptoms have also been identified as a result of acoustic shock injury, particularly in patients who have pre-existing stress or anxiety. These reactions include:

- Feelings of vulnerability;
- Teariness;
- Apprehension about returning to telephone duties;
- Hyperacusis – an “undue sensitivity to everyday sounds” (Lawton, 2003, p. 252);
- Depression;
- Hyper vigilance;
- And anger (Groothoff, 2005, p. 336; Westcott, 2006, p. 55).

While some symptoms may be “resolved within a few hours or days”, they can persist for months or indefinitely (Westcott, 2006, p.55).

*“I eventually got tinnitus six months later and, two years on, I still have it ... it has got louder and my concentration is seriously affected. I carried on using a headset and became so ill I had to give up work for a long time ... [I] had to change careers because of it.” (Anon., Call Centre Helper.com: forum, 2008).*

Of course, acoustic shock can affect headset *and* handset telephone users. However, contact centre staff using a headset are particularly vulnerable to acoustic shock injury because “it is quicker to move a handset from the ear than a headset” meaning they have increased exposure to an acoustic incident close to their ear(s) (Lawton, 2003, p. 336 and Westcott p 55). It has been proven that repeated acoustic incident exposure “exacerbated an individual’s vulnerability” to acoustic shock injury as well as influencing “the degree and persistence of their injury” (Westcott, 2006, p. 55). If these events are poorly handled by the contact centre employer or where there are insufficient (if any) systems in place to address these acoustic incidents, then “far more serious events arise” (Jenkins, 2006, p. 1).

Where an acoustic incident occurs in a workplace, a 'ripple effect' through the surrounding staff can be observed, leading to increased vulnerability in a workplace already characterised by a stressful, competitive and repetitive environment (Westcott, 2006, p. 55). Further, fear of another acoustic incident can affect employees' performance and "their ability to do their job" (Jenkins, 2006, p.1). Affected employees may need to take "extended sick leave" and, in some cases, may not be able to return to "call centre work requiring the use of a headset" and will "never again [be] able to do work involving the use of headsets" (Lawton, 2003, p. 255; Groothoff, 2005, p. 335). Similarly, the consequences of acoustic incidents and any resulting acoustic shock injuries in employees can lead to employees making compensation claims against their employer which is, understandably, an incredible expense for a business (Lawton, 2003). The ongoing symptoms in affected staff suggest "poor identification and management of an acoustic incident in the first instance" by the contact centre employer and make evident that "risk assessment ... and control measures may need to be implemented" (*Workplace Health and Safety Queensland*, 2003, pp. 17 – 18).

## Industry Confusion and Standards

One important aspect of acoustic safety that is causing immense confusion and misunderstanding in Australian contact centres relates directly to the standard requirements and recommended guidelines of telephone equipment. Australia's industry standard, the AS/ACIF S004:2008, limits maximum output sound pressure levels in headsets to 118 dB in alignment with the proposed international level (*AS/ACIF S004*, 2008, p. 15). This standard 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 factors" of acoustic shock injury are related to the "sudden onset, unexpectedness and impact quality" of sounds outside the individual's control rather than to "high volume levels alone" (Westcott, 2006, p. 57). Despite headsets being "produced according to international or national standards" they "have minimal protection against sudden loud sounds" and acoustic shock incidents (Milhinch, 2001, p. 12). A limitation of 118 dB on the maximum output levels in headsets *does not* protect or prevent acoustic shock.

The ACIF G616:2006 Acoustic Safety for Telephone Equipment Guideline further adds to an industry-wide misunderstanding about true safety levels for contact centre headset users. The advisory-only G616 suggests an output limit level of 102 dB which has been used as 'evidence' by some manufacturers and vendors who, preferring to simplify the process, say that their product complies with the G616 limit level of 102 dB and, thus, provides the maximum safety possible. This is most certainly inaccurate and only misleads end-users into thinking that by installing a device that claims to be G616 compliant that they are protected from acoustic shock. Unfortunately, and as a result of this misunderstanding, they have been continually exposed to acoustic shocks and, in some cases, injury. It is suggested that the acoustic incident triggering an acoustic shock is frequently a tone at the level of 82 – 110 dB and in the frequency range of 2.3 to 3.4 kHz (Westcott, 2006, p. 55). The AS/ACIF S004 standard of 118 dB has "been found not to offer adequate protection to the end user in circumstances of acoustic shock or excessive exposure to noise" (Bingeman cited in Groothoff, 2005, p.338). This further implies that Australia's industry standard's maximum output level of 118 dB and G616-advised output level of 102 dB are insufficient in protecting contact centre headset users from acoustic shock.

Unfortunately, because 118 dB *is* the legal standard, some contact centre employers simply do the bare minimum by ensuring their equipment complies with the standard without realising that acoustic shocks will still occur. Similarly, because acoustic shock symptoms are "involuntary and subjective" with even medical specialists having "difficulty in assessing the emotional stability and employment prospects of acoustic shock claimants" and because the shock complained of is "in the past and may be unique and unrepeatable", there remain acoustic shock sceptics (Lawton, 2003, p. 256; Westcott, 2006, p. 56). This scepticism, even from within the industry itself, contribute to acoustic shock injuries being "readily misunderstood or not believed" (Westcott, 2006, p. 56). Research and observations, however, point to the contrary and confirm that acoustic shock injuries are very real for both the employee and employer (Lawton, 2003, p. 256). Audiologist Dr Jan

Milhinch, who conducted research using Telstra employee records, concludes that acoustic shock is “not an imaginary or malingering issue” (Milhinch cited in Keeling, 2001, p. 3).

## The Solution – Prevention vs. Cure

That old cliché; prevention is better than a cure, certainly rings true here. It is better for contact centres to take steps to prevent acoustic shock injury from occurring rather than having to face the costly and time-consuming steps needed to rehabilitate an injured staff member or when confronted with compensation claims. Contact centres must have certain systems in place to address and prevent, if not eliminate, the potential for acoustic shock. Guides to safety in contact centres advocate certain steps for employers to take to ensure the acoustic safety and comfort of their employees, in particular:

- Attaching an acoustic shock protection device to “prevent potentially damaging acoustic levels or content reaching the headset wearer’s eardrum” (*Workplace Health and Safety Queensland*, 2003, pp. 17 – 18);
- Ensuring workers “are trained in the proper fitting and use of headsets” (*ibid.*);
- The implementation of policies/procedures to identify and remove faulty headsets and to review acoustic safety procedures already in place (if any);
- The implementation of a mobile phone policy that “prevents the use of mobile phones in or near the call centre area” (*ibid.*);
- Development of a procedure for managing acoustic incidents including necessary referral and rehabilitation for affected employees;
- Training of staff “in identifying an acoustic incident and the development of acoustic shock including what steps to follow in the event of a sudden ... and unexpected sound causing pain” (*ibid.*);
- Ambient noise reduction in contact centres: if ambient noise level “is high, operators need to turn up the volume of their headset, increasing their risk of exposure to an acoustic incident” (Westcott, 2006, p. 55).

*“Sound training is needed. While three quarters of respondents consider they know what acoustic shock is, only 4% ... have received training in how to identify acoustic shock. 80% ... have not been trained in how to fit and use headsets ... of those that received training in fitting headsets, most considered the training inadequate.”*  
(Community and Public Sector Union, 2010)

*“I will only recommend the Polaris Soundshield with Soundstat and would strongly advise if you have telephone agents that use headsets that you remove your amp or limiter and install a Soundshield. If you want to see the difference, call a fax machine with both devices.”* (A. Reilly, *Workplace Health & Safety Manager*, IBM, 2008).

The Australian standard of 118 dB output level, while restricting maximum volume levels over a telephone line, is only “of benefit primarily to help reduce the probability of an initial acoustic incident exposure” and does not guarantee to eliminate the risk of acoustic shock (Westcott, 2006, p. 57). As mentioned previously, because the main factors of acoustic shock injury are related to the sudden onset of an unexpected, unpleasant sound 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. Such a technology, the Soundshield, developed by Polaris Communications, does exist. A worldwide first in acoustic safety for headset users, this digital Acoustic Shock Protection Device has become the ultimate benchmark for acoustic safety and subsequently implemented by some of the major players in Australia’s contact centre

industry. The Soundshield device, the safest solution for headset users, provides frequency-dependent limiting and “constantly monitors the incoming signal with the aim of differentiating between speech and high-pitched tones” so that when a high-pitched tone does occur, “the device measures its frequency, and blocks the transmission of any sound at this frequency ... the tone is typically detected and blocked within a few hundredths of a second” (Dillon, 2010, p. 4). Not only is it used and endorsed by contact centre industry heavyweights but the benefits of the Soundshield have been recognised by experts who see its ability to “monitor worker noise exposure through the working day” as indispensable in protecting headset users and in providing “on-going risk assessment across the entire call centre workforce” (Jenkins, 2006, p. 2).



*“There is only one system, Polaris Soundshield, which fully protects headset wearers and, understandably, it is headset-independent ... it can give greater protection than the most ... top-of-the-range headset-adaptor combo.” (Derek Barnes, Call Centre Helper.com: forum, 2008).*



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century saw British Telecom pay £90,000 (or AUD\$248,000) to a worker suffering from acoustic shock injury while union lawyers represented a further 83 British Telecom employees suffering from the disorder (Keeling, 2001, p. 3; Hester, 2001). By 2006, over 700 UK call centre workers had suffered acoustic shock, resulting in £2.5 million being paid in compensation (BBC News, 2006).

Acoustic shock injury is not a malingering or imaginary condition. It has very real impacts not only on the individual worker’s physical and emotional condition but also on the employer and the industry as a whole who must handle compensation claims as well as worker absence and sick leave. It is clear from an economic and medico-legal standpoint that employers need to safeguard against injury and illness caused by acoustic shock to prevent damage to “profits as a direct result of [an employee’s] sick leave” (Jones, 2010). Further, “fine health, safety and environmental performances pay for themselves ... [and] also develop a good repute of your business in the eyes of your clientele, the local area and community and the hired staff” (Jones, 2010).

Because contact centre business is conducted entirely on an auditory basis, it is essential that employers acknowledge the prevalence and impact of acoustic shock injury and take steps to train staff in recognising and managing these symptoms. Contact centre workers are at increased risk of exposure to acoustic shock and more susceptible to injury because of the amount of time they spend on the



*“If headset wearers are not properly trained and such incidents are not properly understood or managed the potential for harm is alarming.” (Jenkins, 2006, p. 1)*



phone and because of the already stressful and competitive nature of their work environment. Experts continue to assert that the standard maximum output level of 118 dB is “about 10 times as loud as speech”, a level that fails to provide sufficient protection for headset users (Milhinch cited in Keeling, 2001, p.3). By only meeting the standard legal minimum output level of 118 dB in phone equipment (or the G616’s 102 dB) and saying it is providing acoustic safety for employees is simply not good enough. Workplaces must have a system in place to instantly handle an acoustic incident as well as provide necessary programs to tackle the short and long-term debilitating physical and emotional effects of acoustic shock in the individual as well as supply staff with appropriate, additional equipment to minimise, if not eliminate, the risk of acoustic shock.

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**www.polaris.com.au**

**Phone: 1800 626 505**

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