The Acoustic Safety Programme and the National Physical Laboratory wish to develop an evidence-based definition of acoustic shock.
This document is the first UK national definition of acoustic shock in telephone and headset users and is based upon currently available evidence. An updated version will be released when further research has been undertaken.

ACOUSTIC SHOCK IN TELEPHONE AND HEADSET USERS

The first UK National Definitions of Acoustic Shock in Telephone and Headset Users supported by the Department for Trade and Industry and the Communication Workers Union.

AN ACOUSTIC INCIDENT IS A SUDDEN, UNEXPECTED, NOISE EVENT WHICH IS PERCEIVED AS LOUD, TRANSMITTED THROUGH A TELEPHONE OR HEADSET

ACOUSTIC SHOCK IS AN ADVERSE RESPONSE TO AN ACOUSTIC INCIDENT RESULTING IN ALTERATION OF AUDITORY FUNCTION

Notes

Acoustic shock is NOT noise-induced hearing loss and occurs at sound pressure levels well below those which present a risk of immediate hearing damage

Physical characteristics of acoustic incidents that give rise to acoustic shock are not currently understood, and consequently no conclusive evidence-based guidance on levels or rise time can be given.

Acoustic shock is characterised by auditory symptoms occurring immediately after the acoustic incident. In some individuals further symptoms develop over time. Commonly reported symptoms include:

Early onset (within minutes of event):

- Discomfort or pain around the ear
- Muffled hearing
- Feeling light-headed
- Fatigue
- Lethargy
- Nausea
- Dizziness
Medium onset (from hours to days after event)

- Tinnitus
- Hyperacusis
- Dysacusis

Late onset

- Anxiety
- Phobic anxiety
- Depression

Both medium and late-onset symptoms may continue in the long term (i.e. months to years after the event).

Symptoms vary greatly between individuals.

Key research requirements

1. Identify appropriate preventive measures
2. Develop and carry out suite of test protocols for electro-acoustic equipment
3. Characterise the noise event(s) which lead to acoustic shock
4. Quantify the incidence of these events
5. Develop a comprehensive description of the acoustic shock syndrome
6. Investigate the underlying mechanisms for the acoustic shock syndrome
7. Establish appropriate approaches to treatment
Research Management Board

Dr. Mike Goldsmith, Head of Acoustics, National Physical Laboratory
David Lilly, Programme Director, Acoustic Safety Programme

Research Advisory Board

Chairman
Dr. Andrew Graham-Cumming MBBS MFOM, Medical Director, Acoustic Safety Programme

Board Members
Dr David Baguley, Head of Audiology Addenbrooke's Hospital Cambridge
Dr. Richard Barham, Principal Research Scientist, National Physical Laboratory
Keith Broughton BA NOIA AssMI MinE IEng, Health & Safety Director, Acoustic Safety Programme, Melbourne Acoustics
Dr Laurence McKenna, Consultant Clinical Psychologist, Adult Auditory Rehabilitation
Don McFerran, Consultant ENT Surgeon, Colchester Hospital and Tinnitus & Hyperacusis Centre London
Dr. Michael Fisher, National Acoustics Laboratories, Australia
Jacqueline Patel, Research Scientist, Health & Safety Laboratory

References to other studies and papers used and released during the course of the advisory board’s work can be downloaded from the “ASP-NPL Research Members area” page at http://www.acousticshock.org/?id=nplentrypage
For access please contact Chris Attwell on 01722 413355 or chrisattwell@acousticshock.org