

Noise Exposure of Music Teachers: Introduction

Malcolm Tattersall, Feb 2006

Like any individuals who are subjected to excessive noise exposure, musicians can suffer a hearing loss. It does not matter if the 'noise' to which they are subjected is classical music -- the human ear cannot tell the difference.

Hearing loss can present difficult social problems for anyone but the situation is worse for professional musicians as 'listening' is part of their livelihood. Once damage is done to the ear, it cannot be undone. Therefore, the question of how the damage can be prevented needs to be answered.

J. Presbury and W. Williams, introduction to 'Occupational noise management in an orchestral setting,' *J Occup Health Safety* -- Aust NZ 2000, 16 (4): 337-342

This group of articles is concerned with noise exposure and potential hearing loss among music teachers and other musicians. The focus is on teachers working with small groups of woodwind students in schools. I hope it will be useful to others - woodwind teachers in the studio situation, and brass, percussion and string teachers in both settings - but have not systematically extended my work to mention all the differences. Non-teaching musicians are further from the focus but may still find my work relevant.

Publication history and current form

The material began as a single article intended for one of the magazines which serve the Australian music teaching profession but my colleagues' interest in it encouraged me to make it available on the web even before it was quite finished.

By the time the article appeared (in *Music Forum*, Vol 12 No 2, Feb - April 2006) the web site had taken on its own life. Containing ancillary material as well as a variant of the final article, it was all subjected to (minor) revision on the basis of my own further research and readers' comments.

- In February 2006 it was re-organised for clarity and it remained on my own site, with only minor updates, until the [Music in Australia Knowledge Base](#) accepted it in 2014.
- This introduction was revised at that time and all links were again checked and updated but none were added.
- [The version on the Knowledge Base](#) still exists but is difficult to navigate because of broken links.
- I left the 2014 version on my old (inet) website until early 2023. That site has now closed. I have saved all its pages as separate pdfs on this site, and the links below will take you to them.
- Once again, only the introduction, some formatting, and key links have been updated.

The work is, therefore, essentially unchanged since 2006. One would normally not refer to such an old study but it was unique when it was published so it may still be useful.

The Articles

Defining the Problem

A not-too-technical article which introduces basic concepts of acoustics, noise exposure and legal liability. It then estimates actual exposure of music teachers who work primarily in the

small-group teaching situation, relying in part on *Approximating Noise Exposure*.

Teaching Strategies for reducing noise exposure of music teachers

It suggests teaching strategies to reduce unnecessary over-exposure without compromising the quality of instruction. This and *Defining the Problem*, together with their associated references, are essentially the same as the print version, *Reducing the Noise* (see *Links*).

Approximating noise exposure in small-group woodwind teaching

A slightly more technical study of one aspect of the problem: an attempt to refine the exposure estimates by determining the effects of group size, teaching style, room acoustics and the instruments taught.

Early warning signs of hearing impairment

A check-list of easily observable symptoms.

Hearing protection for music teachers

Argues that a properly designed programme should not expose students to dangerous sound levels, acknowledges that teachers may still be over-exposed, and discusses the pros and cons of earplugs.

Hearing Loss, Noise Exposure and the Law

A very brief look at the entanglement of causes of hearing loss (i.e. noise exposure, health and perhaps age), noise exposure inside and outside the workplace, aural health and industrial law. The article points to some of the difficulties without attempting to resolve them.

Links to further information

This doubles as the References section for all the other pages. It lists journal articles, theses, acoustics texts and more, with hyperlinks to those which are available online.

Status of this material

I am an experienced instrumental music teacher with a good background in physics (see 'The Author' below) but no qualifications in occupational health and safety. At this stage I am sure that all of my material is essentially correct but I need to stress that (1) situations vary, so that what I am talking about may not apply exactly to any individual teacher, and (2) my figures are not exact, so my results can only be approximations. My approximations are the best I can manage, but **do not panic**, and **do not take any radical action**, on the basis of my work alone. **Seek more information!**

That said, I would not have even begun work in this area if I had found the information I needed was already freely available. As I continued my research I came to believe that no-one had ever published any substantial articles on exactly my topic. There was a reasonably large literature on noise exposure of 'band directors' in North American school systems - instrumental teachers, true, but working under quite different conditions - but apparently none (in 2006) on studio or small-group teaching.

Seeking more information will therefore be a matter of exploring the resources on my Links page, which may be helpful but may not apply directly to your own situation, looking for more recent studies, and consulting Occupational Health and Safety staff in your own workplace, who ought to be willing to help but may not know much about noise exposure.

Terminology

The OHS literature calls all sound 'noise' and I have done the same in these pages. It may seem

absurd for a musician to do so but it seemed important to do it here, as a means of stressing that all sound has the same physical effects on our ears whatever it does to our brains, emotions or, dare I say it, souls.

More trivially, 'Occupational Health and Safety' (OHS) is exactly synonymous with 'Workplace Health and Safety' (WHS); different names are used in different states and countries. To avoid confusion between similar bodies in different places, I have sometimes added country names in parentheses.

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The Author



Malcolm Tattersall played piano and recorder as a child before joining the local brass band on cornet and working his way down to euphonium. He studied sciences (maths/physics) at school and went on to a cadetship in communications engineering which included studies at Royal Melbourne Institute of Technology. On deciding that music was more fun, he supported himself as a computer programmer for a year while catching up on music studies, then enrolled in music at Melbourne University.

He began teaching woodwinds in Victoria in the late 1970s. Since then he has taught recorder, flute, clarinet, saxophone and tin whistle in primary and secondary schools (both state and non-state), TAFE, studio, summer school and adult education settings in Victoria and Queensland, and played in, and/or conducted, ensembles employing all of these instruments and more. For more information about his activities as composer and writer, please visit [malcolm-tattersall-musician/](#) on this site.

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