

8 Quantification of Hearing Loss

In *Thompson v Smiths Shiprepairers* [1984], Mr Justice Mustill gave express judicial sanction to the Blue Book definitions of "impairment", "disability" and "handicap." These are in line with the International Classification of Impairments, Disabilities and Handicaps published by the WHO in 1980. After unqualified support in *Kellett*, other definitions must now be discarded.

In an important passage, Mr Justice Mustill held: "Expressions such as 'deafness, hearing loss and damage to hearing' are convenient enough for general discussion, but are not sufficiently precise when it comes to assessing the harm done to the individual's organs of hearing, the extent to which this harm was brought about by an actionable breach of duty, and the monetary amount which is appropriate to compensate him for the wrong doing. Accordingly, I shall adopt the following terminology proposed in a document referred to as 'the Blue Book' approved by the Councils of the British Association of Otolaryngologists and the British Society of Audiology ...

Hearing Impairment

This is any loss or abnormality of function of the hearing system.

Disability

This is any lack or restriction (resulting from an impairment) of ability to receive everyday sounds, in either a quiet or noisy background, in the manner or within the range considered normal for human hearing.

Handicap

This is the disadvantage for a given individual resulting from the impairment or disability that restricts the activities that would be expected for that individual (taking account of age, sex and social, cultural, economic, psychological, medical and environmental factors).

The quantification of the consequences of excessive noise proceeds in very different ways, according to which of these three types of damage is under consideration. Hearing impairment cannot be measured directly by scrutinising the deterioration of the hearing organs. An objective quantification can, however, be made by means of pure-tone audiometry.

The results of audiometric tests, when plotted as an audiogram, are an important guide to diagnosis, in conjunction with clinical examination. They do not however provide an immediate measure of disability, and still less of handicap. Attempts to make direct measurements of disability have not so far achieved great success.

Accordingly, where schemes have been established for compensating large numbers of sufferers from hearing loss, the technique has been to make use of an average of hearing losses at selected frequencies, the average loss in decibels being set against a conventional scale of disability expressed either in percentages or numbered classes. The question whether any compensation at all is payable, if so what the amount should be, is then determined by the patient's rating according to the percentage or class derived from the scale.

Since the degree of impairment suffered by the individual patient very often differs markedly from one frequency to another, the choice of frequencies from which the average is taken may have an important effect on the patient classification.

Opinions have differed on the choice. In the United States, which was first in the field, the average was taken at 0.5, 1 and 2 kHz. Some experts felt, however, that this could lead to injustice, for the higher frequencies are usually lost first, so that the measurements at the lower frequencies might under-rate the

impairment of someone whose hearing loss was in the early stages.

Accordingly, a system known as the Coles-Worgan scheme was devised which took account of the loss at 4 kHz, as well as the three lower frequencies. This system is interesting, because the assessment of disability involves not only the audiometric testing but also the clinical comparison of the subject's apparent disability with a series of standard descriptions.

The combination of these two methods leads to the subject being assigned to one of ten classes of increasing severity, each class being given a brief label, such as 'slight' or 'moderate'. These descriptions and labels are useful when it comes to the assessment of damages because they enable the court to set the disabilities of these particular plaintiffs against those of others who have previously received awards, whilst always bearing in mind that disability and handicap, unlike hearing loss, are not capable of direct quantification.

The two selections of frequencies previously mentioned are not the only ones to have found favour. For example, averages are widely taken in the United Kingdom at 1, 2 and 3 kHz, and the scheme of compensation administered by the Department of Health and Social Security makes use of such averages, the qualification for the receipt of any payment at all being a binaural hearing loss of at least 50 db.

Recently, opinions have been expressed in favour of averages at 1, 2, and 4 kHz, and these form the basis of a scheme set out in the Blue Book. In *Thompson v Smiths Shiprepairers*, use was made of the Coles-Worgan scheme, and the averages at 1, 2, 3 kHz and 1, 2, 4 kHz.

It is unnecessary to decide whether one method is better than another. They all point to the same direction, provided note is taken that where the losses are comparatively small, the average at 1, 2, 4 kHz is likely to display a larger impairment than assessments made on the other bases.

Thus, in Common Law cases coming before the courts based on the employer's negligence, the courts will use the percentage of

disability calculated by expert witnesses only as a guide. Usually the scientific measurements by audiometry are not in dispute but rather the conclusions drawn from them on the degree of disability.

The courts are not looking for the sort of accuracy deduced by the medical experts. Where experts disagree, the court may decide to split the difference by averaging. The evidence presented is in no way a 'rough guide' but purports to be a very exact computation, perhaps too exact to be fully appreciated. However, the percentage disability (calculated to the decimal place in some instances) must be placed in perspective and seen in the background of non-medical evidence.

It may suffice if medical evidence allows the courts to compare the degree of disability with a previous case where damages were awarded. Adjustments may be made for inflation. "The Court has to ask itself: What has been the view in the recent past of other judges of experience about the problem with which this Court has to deal? ... there is a scarcity of information. There is however, some. It is worth considering what other judges have decided in this class of case." Each previous case lays down an upper or lower limit for a specified degree of disability.

The legal definition of disability is subjective. "When Mr Mild, who by audiogram has more hearing loss than Mr Slight, Mr Slight may be the one who is complaining most," as described by one observer.

In the later case of *Kellett v British Rail Engineering Ltd*, 3rd May 1984, Mr Justice Popplewell detailed the evidence: "There have been eight audiograms taken on the Plaintiff. They have all been taken at 0.5, 1, 2, 4 and 8 kHz. Only in two of them has the reading at 3 and 6 kHz not been taken. Apart from those taken by Professor Hinchcliffe they differ little. Professor Hinchcliffe took his measurements by what is called the Békésy principle. It is not necessary in this judgment to decide whether the method by which he measured the Plaintiff is better than that adopted by the others or whether one reading is more accurate than the others. Suffice it to say that if all the audiograms are taken including Professor Hinchcliffe's and adjusted for

binaural loss at 1, 2 and 3 kHz or 1, 2 and 4 kHz, again a matter of dispute which I do not propose to resolve, the result is a loss of 31.4 decibels.”

Mr Justice Popplewell described Professor Hinchcliffe, Consultant Neuro-Otologist to the Royal National ENT Hospital as a distinguished and vastly experienced otologist, but said “His audiometric reading was substantially lower than that of the others, and I prefer to take the weighted average of all the audiometric readings rather than that simply of Professor Hinchcliffe’s.”

He then referred to the evidence of Mr Douek, the Consultant Otologist at Guys Hospital, that the “hearing loss at 4 kHz was the highest loss, that consonants are more important than vowels and the higher tones are for consonants.” Mr Kellett was not likely to be helped by a hearing aid; in future he will be more severely handicapped. He described Mr Kellett as having a degree of deafness which lay between that of Mr Robinson (*Robinson v BRE*, 1981, QBD affirmed 1982, CA) and Mr Faulkner (*Faulkner v BRE*, 1983 QBD affirmed 1984, CA) who were two claimants in other cases whose damages were assessed by the Court of Appeal.

Dr Coles “was a distinguished and vastly experienced otologist, he is deputy director of the MRC Institute of Hearing Research, Nottingham, he is author with Professor Burns and Air Vice-Marshal King of what is known as the Blue Book ... He calculated on his figures that ... disability was binaurally 8% but from his history he would have thought

that his disability was a bit greater than that calculated mathematically” but which “according to Mr Williams would be very slight. Mr Williams is Consultant ENT Surgeon at the Hull Royal Infirmary and Honorary Consultant at the Military Hospital at Catterick.”

“All the experts have put the Plaintiff into some sort of percentage disability table I have not found particularly helpful because the criterion in each case seems to be different; while percentages may be of value in comparisons between one Plaintiff and the other, they do not set out fully the nature and difficulty of [Mr Kellett’s] disability; additionally it is unnecessary ... because it is agreed that [Mr Kellett’s] disability lies between that of Mr Faulkner and Mr Robinson.”

As the number of decided cases increases [1], more attention may be directed to the computational aspects of quantifying disability, the right to disregard any calculations is always vested in the judge. At present, the accuracy of scientific evidence does not impress the courts and arguments over the correct way to assign a percentage to hearing disability must lie dormant.

“Simply to look at decibel loss without looking at the adverse effect on the claimant’s quality of life is only to consider half the equation.” Medical evidence is only one parameter which must be considered in the light of all the circumstances of the case. The courts are determined to fill in the other half of the equation by looking at the claimant’s own evidence in court.

[1] For up to date figures, comparisons must be made with cases in Kemp & Kemp, *The Quantum of Damages*, which is the legal practitioners’ compendium of litigated cases.