

IN THE COUNTY COURT AT WREXHAM

Case No: A66YJ738

The Law Courts
Bodhyfryd, Wrexham, LL12 7BP

Date: 30 October 2015

Before :

HIS HONOUR JUDGE KEYSER Q.C.

Between:

WILLIAM JOHN ROBERTS

Claimant

- and -

PRYSMIAN CABLES AND SYSTEMS LIMITED

Defendant

Elizabeth Marshall (instructed by Slater & Gordon) for the Claimant
Paul Higgins (instructed by Clyde & Co) for the Defendant

Hearing dates: 16 October 2015

Approved Judgment

I direct that pursuant to CPR PD 39A para 6.1 no official shorthand note shall be taken of this Judgment and that copies of this version as handed down may be treated as authentic.

H.H. Judge Keyser Q.C. :

Introduction

1. The claimant, Mr William John Roberts, was born on 28 November 1946 and is now aged 68 years. From 20 January 1975 until 16 September 2005 he was employed by the defendant (or its predecessors; it is unnecessary to distinguish between them) at its premises at Wrexham, for nearly all of that time as a production worker in the Wire Armouring Department. In these proceedings Mr Roberts claims from the defendant damages for personal injuries and consequential loss that he alleges he suffered by reason of his exposure to excessive noise in the course of his employment.
2. At trial it was not disputed that from 1975 until no later than 1987 Mr Roberts was exposed in the course of his employment to potentially harmful levels of noise and that this exposure was due to the negligence of the defendant and its breaches of the duties owed to Mr Roberts under the Factories Act 1961. The evidence shows that Mr Roberts was not otherwise exposed to potentially harmful levels of noise, whether in or out of work, although his workplace remained relatively noisy after 1987 and until his retirement in 2005. The defendant did not maintain any allegation of contributory negligence at trial.
3. The issue in the case is whether Mr Roberts has suffered hearing loss or tinnitus by reason of his exposure to excessive noise.
4. Medical evidence on behalf of the claimant was given at trial in the form of written reports and answers to questions by Mr Alun Tomkinson, a Consultant in Otolaryngology and Head & Neck Surgery. The defendant did not seek permission to adduce its own medical evidence or request that Mr Tomkinson attend for cross-examination at trial. Nevertheless, on behalf of the defendant Mr Higgins subjected Mr Tomkinson's evidence to considerable criticism and invited me to reject it. Before I set out the grounds of that criticism, and in order to understand how it arises, I must set out some of Mr Roberts' evidence and explain the history of the medical evidence in the case.

Factual Evidence

5. In his witness statement dated 6 July 2014 Mr Roberts said this:

"I never noticed any hearing loss whilst in the defendant's employ and nobody ever advised me that I may be suffering from a hearing deficit. It never occurred to me. ...

I have noticed my hearing loss gradually get worse over time. I find myself turning up audio equipment in order to hear and due to this I receive regular complaints from my wife regarding my hearing. My wife would tell me that I had the television on too loud. When I retired I spent more of my time at home and as I was in a non-noisy environment and often in a room with no noise at all I gradually began to realise that I had some

degree of hearing loss. I put this down to the ageing process ... I often find it difficult having a conversation if I am in a busy place as background noise makes it extremely difficult to understand the people that I am talking to. I also suffer with tinnitus which is extremely annoying to me.

In approximately March 2012 I mentioned my hearing loss to my friends, who suggested that I go for a hearing test as they had similar symptoms and had been diagnosed with noise-induced hearing loss."

That evidence would seem to mean that Mr Roberts' awareness of hearing loss, whether from his own perception of difficulties of hearing or as a result of comments by others, commenced only after his retirement and therefore at least eighteen years after he was last exposed to excessive noise.

6. In August 2015 Mr Roberts gave written answers to some Part 18 questions regarding his tinnitus; in evidence at trial he confirmed the truth of those answers. To the question, "When did you first experience tinnitus?" he replied:

"I do not know specifically. I can recall finishing my shift and walking out of the building into the car park that (sic) there was always some sort of background buzzing noise in the ears that lasted approximately 10 minutes or as long as it took to drive home. It used to take me quarter of an hour to drive home. I didn't know what it was or that it was a medical condition."

In response to the request, "Please describe the tinnitus which you suffer", he said:

"It has been a progressive thing. I think it is a lot louder now than it was then. I don't seem to hear it all the time particularly back then and at work with all the background noise, you wouldn't hear it as much. Now that life is much quieter I have become more aware of it and it [has] become more disruptive and disturbing, e.g. if I am reading a book it is irritating as there is the noise in my ear which affects my concentration and is generally annoying. When I am on the telephone it is there in the background all the time. Talking about tinnitus seems to bring it on and increase the volume of the ringing."

7. When he gave evidence, Mr Roberts said that he could not specify when he first became aware that his hearing was deteriorating or when first his wife commented on the volume of the television; it all happened gradually over a period. He said that he went to have his hearing tested in 2012 because some former colleagues of his were going and invited him to go along with them; it was not because he had told them of his hearing difficulties: "I didn't think there was anything wrong with my hearing." (I shall say more about the hearing test, which was conducted on 20 April 2012, in connection with the medical evidence.) He was asked about the onset of tinnitus and said that, apart from the noise in his ears while winding down from the end of a shift, he did not experience noises in his ears while he was employed.

8. In the course of his employment with the defendant, Mr Roberts underwent audiometric testing on a number of occasions. On some of those occasions the person who administered the test recorded on a card or sheet Mr Roberts' answers to questions concerning his hearing. Unlike the pure tone audiometry carried out in 2012, the work-based testing used Bekesy audiometry.
 - 8.1 In 1986 the audiogram showed an average loss, over 1, 2 and 3 kHz, of 0 dB in the right ear and 5 dB in the left ear, giving a DSS binaural average of 1 dB. The data card recorded that Mr Roberts considered his own hearing to be good and that he had no tinnitus in either ear.
 - 8.2 In 1990 the audiogram showed an average loss, over 1, 2 and 3 kHz, of 2.3 dB in the right ear and 9 dB in the left ear, giving a DSS binaural average of 3.7 dB. The data sheet recorded that Mr Roberts was not aware of any change in his hearing since his last audiogram.
 - 8.3 In 1992 the audiogram showed an average loss, over 1, 2 and 3 kHz, of 3 dB in the right ear and 6.7 dB in the left ear, giving a DSS binaural average of 3.7 dB. The data sheet recorded that Mr Roberts was not aware of any change in his hearing since his last audiogram.
 - 8.4 In 1994 the audiogram showed an average loss, over 1, 2 and 3 kHz, of 0 dB in the right ear and 9.7 dB in the left ear, giving a DSS binaural average of 1.9 dB. The data sheet recorded that Mr Roberts was not aware of any change in his hearing since his last audiogram.
 - 8.5 In 1996 the audiogram showed an average loss, over 1, 2 and 3 kHz, of 5.7 dB in the right ear and 1.7 dB in the left ear, giving a DSS binaural average of 4.9 dB. The data sheet recorded that Mr Roberts was not aware of any change in his hearing since his last audiogram.
 - 8.6 In 2002 the audiogram showed an average loss, over 1, 2 and 3 kHz, of 4.7 dB in the right ear and 7.3 dB in the left ear, giving a DSS binaural average of 5.2 dB. The data sheet recorded that Mr Roberts was not aware of any change in his hearing since his last audiometry. The question, "Do you suffer from noises in your ears after work?" was answered "No".
 - 8.7 In 2004 the audiogram showed an average loss, over 1, 2 and 3 kHz, of 4.7 dB in the right ear and 6.3 dB in the left ear, giving a DSS binaural average of 5 dB. The data sheet recorded that Mr Roberts was not aware of any change in his hearing since his last audiometry. The question, "Do you suffer from noises in your ears after work?" was answered "No".
 - 8.8 There is no audiogram for 2005; the records relate to a medical examination upon Mr Roberts' retirement. However, a data sheet recorded that Mr Roberts was not aware of any change in his hearing since his last audiometry. The question, "Do you suffer from noises in your ears after work?" was answered "No".

Medical Evidence

9. The claim was commenced on 13 March 2014. The particulars of claim were accompanied by a medical report dated 4 November 2012 from Mr Tomkinson. Mr Tomkinson had not met or examined Mr Roberts; the report was based on an examination carried out and medical history taken by an ENT Nurse Practitioner on 20 April 2012 and the pure tone audiogram performed by an audiologist on the same occasion, as well as Mr Tomkinson's reading of the medical records. The medical history stated: "Mr Roberts did not feel he was hard of hearing." However it recorded that Mr Roberts complained of bilateral tinnitus ("a buzzing sound") that occurred intermittently on a weekly basis and did not affect his ability to sleep.
10. The 2012 audiogram showed an average hearing loss over 1, 2 and 3 kHz of 36.7 dB in the right ear and 28.3 dB in the left ear. Mr Tomkinson said that this gave a binaural weighted average of 31.91 dB, corresponding to a disability of 20.19%. The predicted average loss for a man of Mr Roberts' age would be 16.57 dB, corresponding to a disability of 9.01%. Accordingly there was an unexplained average binaural loss of 15.43 dB and an unexplained disability of 11.18%. In the "Opinion" section of the report Mr Tomkinson said:

"The audiogram dated 20/04/2012 contains features suggestive of a history of past noise exposure. There is a high frequency loss. The hearing loss at 3, 4 and 6 kHz, in the better hearing ear, is significantly greater than that of an individual of the same age and gender. There are bilateral notches, at 4 kHz on the right and 6 kHz on the left. There is also a significant asymmetry but no obvious medical explanation or history of asymmetric occupational noise exposure that could explain this. In the absence of an explanation becoming available this asymmetry could be due to an asymmetric variant of age-related hearing loss or constitutional damage.

Mr Roberts gives a history suggestive of unprotected noise exposure during his employment, this is a matter of engineering evidence. If confirmed, it is likely to have resulted in a noise-induced component to his loss. If significant noise exposure were proven to be the case then I would be of the opinion that a proportion of the loss, on the balance of probabilities, is due to noise-induced deafness. The confidence with which one could come to this conclusion would depend on the level of noise exposure determined from engineering evidence. The greater this level the more likely the diagnosis. Mr Roberts has a hearing loss which is due to age, probable noise exposure, together with an additional non-noise component. The additional loss on the right is unlikely to have been related to the occupational noise exposure unless asymmetric noise exposure is established; the low frequency loss will also not be due to noise exposure. ...

Mr Roberts has an overall unexplained disability of 11.18%. There is evidence from the audiogram and the history that there

may also be a non-occupational noise, non-age component to the hearing loss. In view of this, I propose an arbitrary offset of 25%, giving a final disability of 8.4% attributable to noise induced deafness.

Mr Roberts also complained of tinnitus. The cause of the tinnitus is likely to be identical to the cause of the hearing loss. Given the degree of intrusion described, I would consider its severity as mild."

11. When Mr Tomkinson wrote that report, he had not seen the audiograms carried out by the defendant while Mr Roberts was still working. By the time proceedings were commenced, he had been provided with five of those seven audiograms (he had not been given those from 1986 and 1990) and had written a supplementary report dated 27 February 2014. Mr Roberts' solicitors were still awaiting the supplementary report when the claim form was issued, and they received it a few days later, though they did not disclose it until late July 2015, about a fortnight before the trial was originally due to take place. The main part of the supplementary report was in the following terms:

"All the available tests, with [the] exception of the 2002 test, suggest the presence of a bulge in the right better hearing ear which is compatible with the diagnosis of NIHL [noise-induced hearing loss] as defined by Coles et al. The most recent of the tests is 2004. This suggests a bulge at 4 and 6 [kHz] and diagnostically fulfils the criteria for NIHL. However there is minimal if any excessive loss at 1, 2, 3 kHz, above that expected for age, that could be explained by noise exposure. The loss in excess of that expected by age is zero, if one uses Tables in Coles et al at either the 50th or the 75th centiles.

It has been suggested that the inter-test variability is considerably greater with Bekesy audiometry and that thresholds recorded using this type of audiometry may be consistently recorded as significantly better than those that would be obtained with pure tone audiometry ... If one accepts this, the use of a 3 dB correction factor may be appropriate for the fact that Bekesy audiometry has these limitations and can overestimate the hearing loss by as much as 3 dB. If 3 dB is added to each measured loss at 1, 2 and 3 kHz and the average taken, there is an unexplained loss of 1.6 dB on the right better hearing ear (using tables of Coles et al) at the 75th centile, which is minimal, but no loss if the 50th [centile] is used. Loss seen at 4 and 6 kHz is not included in the calculation of averaged loss in the UK, which is over 1, 2 and 3 kHz; however, the presence of the loss at 4 and 6 kHz is likely to contribute to hearing difficulties in the presence of background noise.

The most recent audiogram suggests considerably worse hearing than seen in the 2004 test and significant asymmetry not seen in the earlier audiograms, suggesting that, as noise

exposure ceased in 2005, the subsequent deterioration is not noise-related. Mr Roberts does have a significant past medical history, which may be of relevance.”

12. The opinion being expressed in the supplementary report seems to be fairly clear. Even if some corrections are made to the work-based audiograms to allow for the possibility that the results produced by Bekesy testing understate the hearing loss, the identifiable noise-induced component of the hearing loss is either nil or minimal. The stark difference between the work-based audiograms and the 2012 audiogram is due to subsequent deterioration on account of factors other than noise. There is no suggestion that Bekesy testing is inherently unreliable or an unsuitable basis for assessing levels of hearing loss. The supplementary report says nothing regarding tinnitus; the opinion expressed in the first report, namely that the cause of the hearing loss was likely to be the cause of the tinnitus, would imply that noise played either no part or a minimal part in the cause of the tinnitus. There can be no justification for the failure to make prompt disclosure of the supplementary report.
13. In December 2014 the defendant’s solicitors put Part 35 questions to Mr Tomkinson. As they knew nothing of the supplementary report, the questions were based on the report attached to the particulars of claim. Mr Tomkinson gave written responses on 9 January 2015. He said that the shape of the audiogram for the right ear was suggestive of noise damage, but that the audiogram for the left ear was not typical of noise-induced hearing loss. On the assumption that exposure to noise had been symmetrical, the excess hearing loss in the right ear would be due to some other cause. Mr Tomkinson explained that the “arbitrary offset” of 25% in his first report (paragraph 10 above) was intended to reduce the risk of exaggerating the noise-induced component of the hearing loss on account of the use of median figures in the methodology he had used (the Black Book Method). He said that the use of alternative methodology (the Coles Method) would result in closely similar figures. The written responses made no reference or allusion to the supplementary report; they simply explained the reasoning in the first report and dealt solely with the 2012 audiogram.
14. In May 2015 the engineer instructed as a single joint expert produced his report. The report expressly mentioned Mr Tomkinson’s supplementary report, which had been provided to the single joint expert. The significance of the reference appears to have been overlooked by the defendant’s solicitors, but the engineering report did alert them to the fact that Mr Tomkinson appeared not to have engaged with the work-based audiograms, and on 30 June 2015 they wrote to Mr Tomkinson and asked him to review the occupational health records. This was the first time that Mr Tomkinson had seen the 1986 and 1990 audiograms. In a further report dated 14 July 2015 he said that both audiograms had features that were compatible with noise-induced hearing loss, and he continued:

“In summary: of the 7 available audiograms, 6 show evidence diagnostic of NIHL and I would therefore remain on the opinion, given the additional evidence, that damaging noise exposure had occurred prior to 1987 in keeping with the engineering evidence.

As I have commented previously [this was a reference to the undisclosed supplemental report], the inter-test variability is considerably greater with Bekesy audiometry and ... thresholds recorded using this type of audiometry may be consistently recorded as significantly better than those that would be obtained with pure tone audiometry (PTA) (Ishak et al). If one accepts this, the use of a 3 dB correction factor may be appropriate for the fact that Bekesy audiometry has these limitations and can overestimate the hearing loss by as much as 3 dB. Finally, the testing conditions of these audiograms are unknown."

15. Mr Roberts' solicitors also sought further clarification from Mr Tomkinson, which he gave in a further report dated 20 July 2015. Having confirmed that the diagnosis of noise-induced hearing loss was confirmed by the shape of the audiograms, he continued:

"I noted in the supplementary report dated 27/2/14 that the inter test variability is considerably greater with Bekesy audiometry and that thresholds recorded using this type of audiometry may be consistently recorded as significantly better than those that would be obtained with pure tone audiometry (PTA) (Ishak et al). It is also the case that we have no information on the test environment of these early tests. I therefore have significant anxiety around using only one pre-1986 workplace based screening audiogram to establish a hearing loss level. The standard for making these calculations is a pure tone audiogram.

As stated in the 27/2/14 report, and with the caveats around work-based Bekesy audiograms available in mind, the hearing loss suggested on these audiograms appears small averaged over 1, 2, 3 kHz. However, this suggestion, if accepted, will not change the diagnosis, which is based on audiogram shape. In this case, all but one of the audiograms available are diagnostic of NIHL and the significant loss is seen in [the] region of 4 kHz, typical of NIHL. This is likely to explain the tinnitus, even if it is accepted that loss over 1, 2, 3 kHz is small."

This clearly amounts to saying that Mr Roberts has noise-induced hearing loss and tinnitus. Further, despite caveats concerning the reliability of the work-based audiograms, Mr Tomkinson appeared willing to accept that they were relevant for an assessment of the level of hearing loss and that the probable level of such loss was low. The response is not naturally to be read as meaning that reliance ought to be placed only on the 2012 audiogram, all the work-based audiograms being disregarded.

16. What happened next was, in my view, unfortunate. On 23 July 2015 Mr Roberts' solicitors wrote to Mr Tomkinson with the following question:

"Can you please advise what do you mean by 'small' over 1, 2, 3 kHz? This is very important as recent case law (*Holloway*) has suggested that less than 3 dB (with no tinnitus) NIHL will be regarded by the Court as *de minimis*. ... What the Court needs to know is what is your own opinion of the level of NIHL over 1, 2, 3 kHz based on your review of all of the evidence put before you by both parties and as a measurement in dB. Do you remain of the view that the claimant still has NIHL of 15.34 dB HL with mild NIHL related tinnitus? ... Can you please give a definitive figure for the range of hearing loss in dB for 1, 2, 3 kHz taking all the evidence into consideration?"

Among the reasons why this question was unsatisfactory (other reasons related to matters of pre-trial case management) were that it was in terms that suggested that the first report represented Mr Tomkinson's opinion hitherto, ignoring entirely the supplementary report of 27 February 2014, and that it suggested, quite unnecessarily, a level below which the hearing loss would be regarded as *de minimis*. For these reasons, I subsequently ordered that Mr Roberts should not be permitted to rely on Mr Tomkinson's answer to the question. (In the event, that has had interesting consequences for the way that Mr Roberts' case has been advanced.) However, his answer is of some relevance, in the light of his subsequently expressed opinions. The critical parts of his response were as follows:

"The diagnosis of NIHL is evident on all but one audiogram and is present in the earliest test. This diagnosis is made based on the presence of a notch or bulge as defined by Coles et al. Irrespective of the agreed magnitude of loss at 1, 2, 3 kHz this diagnosis still stands (even if it were considered effectively zero over 1, 2, 3 kHz). On balance, the excess loss, caused by noise damage, at the higher frequencies is the likely explanation for the tinnitus. The degree of the tinnitus was considered mild in severity.

[Having referred to the limited data from pure tone audiometry and to the greater data from the less reliable Bekesy audiometry] As I have previously stated, I feel very uneasy giving a hearing-loss estimate based on audiometry that is known to be less reliable than PTA. I do however accept the difficulty this creates. Therefore, with all the caveats around Bekesy audiometry being accepted, it would be my view that, although it is possible the average loss over 1, 2, 3 kHz due to noise damage could lie anywhere between 0 and 5 Db, however on balance, taking all audiometry ... and engineering evidence ... into account, I would suggest that the binaural loss due to noise averaged over 1, 2, 3 kHz, on the balance of probabilities, to be between 3 and 5 dB."

17. Accordingly Mr Tomkinson's opinion at the end of July 2015 was that the claimant had suffered noise-induced hearing loss, which was responsible for his tinnitus. However, the amount of the noise-induced hearing loss at 1, 2 and 3 kHz (the relevant

frequencies for average hearing-loss calculations) could be anything from 0 dB to 5 dB but was probably between 3 dB and 5 dB—the bare minimum (according, at any rate, to the suggestion made by Mr Roberts' solicitors) to be actionable. It may be noted that this represents an apparent change of opinion since the supplementary report of 27 February 2014, which did not suggest that the noise-induced component might be as high as 5 dB. It may also be noted that Mr Tomkinson was proceeding on the basis that, subject to correction on account of the use of the Bekesy method, the work-based audiometry provided the relevant data; consistently with the supplementary report, he was not suggesting that the Bekesy audiograms ought to be disregarded in favour of the pure tone audiometry in 2012.

18. On 13 August 2015 I adjourned the trial and gave permission for one further round of Part 35 questions. These elicited two further reports from Mr Tomkinson by way of response, respectively dated 24 August 2015 ("Response to Defendant") and 28 August 2015 ("Response to Claimant"), in which his latest opinions are to be found. Those opinions may be summarised as follows:

- 1) The "gold standard" for audiometry is manual pure tone audiometry ("PTA"). In PTA the audiologist presents signals to the subject, who responds to those he hears. The element of interaction with a trained specialist is important.
- 2) The only pure tone audiogram for Mr Roberts is the 2012 audiogram. The binaural average loss at 1, 2 and 3 kHz is 30 dB. Taking the 50th percentile, the hearing loss to be expected of a man of Mr Roberts' age was 19.3 dB. Therefore the loss unaccounted for by age was 10.7 dB—11 dB after rounding. This is arrived at by means of the Coles Method, which does not permit of a calculation of percentage disability. The corresponding figure using the Black Book Method was 10 dB, which gives a disability of 8.4% attributable to noise-induced hearing loss.
- 3) There are two problems with reliance on the work-based audiograms. First, the test conditions are not known; in particular, it is not known how competent the person administering the tests was or whether the tests were administered in a properly sound-proofed room. Second, the work-based audiometry was carried out according to the Bekesy method, whereby a continuous tone is presented at diminishing volumes (and, on repeat testing, at increasing volumes) and the subject operates a button to indicate when the tone becomes inaudible (or audible, as the case may be). Mr Tomkinson states of the Bekesy test: "This test has been a useful screening tool but is not used in clinical practice, in either a diagnostic or therapeutic setting, where accurate hearing assessment is required. It is not used to estimate hearing loss and advise on appropriate hearing aid provision, for example. It is not suitable for this purpose." The principal shortcoming of Bekesy testing is that it is automated self-recording screening and therefore not as robust as manual PTA, which requires the active interaction of the subject with the audiologist. Further, Bekesy testing systematically overestimates the hearing level when compared to PTA and has inferior test-retest reliability. "[E]ven if the test environment were perfect the test itself falls short of manual PTA as a means of reliably estimating hearing thresholds. In addition to the inherent poor repeatability [of] this test, compared to PTA, it consistently produces a better apparent hearing level than PTA would under the same test conditions."

- 4) The only Bekesy test that does not indicate noise-induced hearing loss is the 2002 audiogram. However, the results in 2002 at 4 and 6 kHz (the frequencies at which the shape of the audiogram is diagnostically significant for noise-induced hearing loss) are probably unreliable and the audiogram should be disregarded. All other Bekesy tests are supportive of a diagnosis of noise-induced hearing loss.
 - 5) When it comes to assessing the level of the noise-induced hearing loss, the Bekesy audiograms should either be rejected as unreliable or, if used at all, be considered with caution and in the light of the 2012 pure tone audiogram. ("I accept that there may be alternative views to my own in these matters.") If the latter course were taken, an adjustment should be made for systematic error. This would be a minimum of 5 dB. "It is not possible to accurately state or calculate what an appropriate correction might be in this case, but this could be more than 10 dB at some frequencies. The change seen between 2004 and 2012 suggests this may be as much as 15 dB or possibly 20 dB in this particular case, if no pathological cause for this change can be identified."
 - 6) There is nothing in the clinical history to explain the dramatic change between 2004 and 2012; neither age nor noise nor both together can explain it. Therefore it "is likely to be an artefact created by changing from one type of test to another and is illustrating the change in the sensitivity, reliability or relative accuracy of the respective measuring techniques rather than being due to an unidentifiable and unexplainable disease process."
 - 7) Mr Roberts has mild tinnitus; this diagnosis is based on "patient reported evidence". There is no technique for apportioning the symptoms among various causes. "It is generally accepted by most experts that the cause of tinnitus is likely to be the same as the cause for the hearing loss." However: "Noise exposure is a well recognised cause and in cases where there is noise damage and evidence of such it would be typically placed as the most likely explanation." It is to be expected that the symptoms of tinnitus would be noticed either during the currency of noise exposure or within twelve months thereafter. However, it is difficult to identify the time of onset, particularly in the case of mild tinnitus. The answers recorded on the occupational health documentation (paragraph 8 above) are not a reliable indication that Mr Roberts was not suffering from tinnitus, because limited questions were asked and it is unclear what Mr Roberts understood them to mean. In particular, absence of noises in the ear immediately after work would not indicate that noises were not experienced at other times.
19. I may note at this stage the considerable extent to which Mr Tomkinson's stated opinions have altered, with regard in particular (a) to the use of the Bekesy audiograms for the purpose of assessing the extent of the noise-induced hearing loss, (b) to the adjustment necessary to the Bekesy results if they are to be used for that purpose, and (c) to the explanation for the marked difference between the results recorded in 2004 and in 2012.

Summary of the submissions

20. Mr Higgins' submissions for the defendant may be briefly summarised as follows. Only the 2012 pure tone audiogram supports the existence of something more than trivial noise-induced hearing loss at 1, 2 and 3 kHz; all of the work-based results show no or negligible loss. Further, the 2012 results are out of step with the earlier results, in that they indicate a degree of hearing loss very much worse than anything suffered pre-retirement. There is no proper basis for disregarding the earlier audiograms, and they are consistent with Mr Roberts' own evidence that he did not think that there was anything wrong with his hearing. Mr Tomkinson has altered his position considerably, and consideration both of the way in which that position has altered over time and of the terms in which he has sought to argue Mr Roberts' case on points of evidence (notably in respect of answers recorded on the occupational health records) suggests that in doing so he has acted more as a partisan advocate than as an impartial expert. Moreover, his approach to the adjustments required to be made to the Bekesy results is demonstrably incorrect. As for tinnitus, the contemporaneous records and Mr Roberts' own evidence fall short of establishing that he suffered any noises in his ears until long after his employment ended.
21. On behalf of Mr Roberts, Mrs Marshall relied on the latest opinions of Mr Tomkinson, which were uncontradicted by any other expert evidence. She submitted that, in seeking to rely on the Bekesy tests in preference to the "gold standard" of pure tone audiometry, the defendant was "seeking to turn audiometry on its head". There is uncontroverted evidence of noise-induced hearing loss and Mr Tomkinson's evidence shows that it is significant. Mr Roberts' evidence regarding tinnitus ought to be accepted. The fact that he is unable to give a clear explanation of when it arose is probably due to its gradual onset, its mild level, and the continued exposure to significant albeit not harmful levels of noise until 2005.

Discussion of the medical issue

22. The invitation to reject Mr Tomkinson's evidence, for the reasons indicated, is bold, in circumstances where there is no contrary expert evidence and where Mr Tomkinson was not cross-examined. Those circumstances do not, in my view, rule the invitation out of court. This is a claim with a very modest value; in such cases the proliferation of expert witnesses and the reception of oral evidence from experts at trial are to be avoided if possible, and it is often necessary to deal with significant matters, including conflicts of opinion, by way of submissions on the papers. However, a court should exercise very considerable caution before rejecting uncontradicted expert evidence on technical matters; it should perhaps exercise even greater caution before rejecting such evidence on the ground that the expert, who has not been given the opportunity to answer, has expressed views for the purpose of advancing the case of the party that instructs him rather than giving his genuinely held opinion. I approach the issue with these observations in mind.
23. It seems sensible, when assessing expert evidence, to place it in the context of the factual evidence. In this case Mr Roberts' own evidence is significant. As will become apparent, I do not regard it as entirely consistent or reliable. However, I do regard it as honestly given. I make the following observations on the evidence.

- 23.1 Mr Roberts' evidence is that he did not notice any hearing loss while he was working, that is before September 2005, but that thereafter he did notice a deterioration of his hearing.
- 23.2 That evidence is consistent with the answers that he gave on the occasions of his audiometric testing. There was some discussion in the course of Mr Roberts' oral evidence concerning the reliability of those answers. No doubt the examinations were conducted in an informal and relaxed manner, but I see no reason to suppose that Mr Roberts did not answer to the best of his ability or that the examiner failed to record the answers properly. The 1986 examination was at or towards the end of the period of potentially harmful noise, but Mr Roberts said that he regarded his hearing as good. Subsequent records tend to indicate that he was not aware of a deterioration of his hearing in the following years.
- 23.3 However, the events of March and April 2012 suggest the need for some caution when seeking to draw inferences from Mr Roberts' answers upon examination in the course of his employment. As I have already mentioned, Mr Roberts' written evidence was that he went to the hearing-testing session because he mentioned to his friends that he was having difficulty hearing; his oral evidence, however, was to contrary effect. The results of the audiometry in April 2012 indicate significant hearing loss and would lend credence to the written evidence. However, the oral evidence was given in a clear and persuasive manner on this point. Further, the ENT Nurse recorded: "Mr Roberts did not feel he was hard of hearing." If the results of the audiometric testing were accurate, the probability in my judgment is that Mr Roberts was not himself aware of a problem but that others, including his wife and his friends, noticed that he was struggling in conversation and thought it worth suggesting that he have a hearing test.
- 23.4 I see no good reason to question the reliability of the hearing test carried out in April 2012. Mr Higgins questioned the conditions in which the test was carried out; Mr Tomkinson, however, states that it was performed "without difficulty using an AD-226 audiometer (calibrated January 2012) and Telephonics TDH-39 headphones in a sound proof booth (Mini Sound Shelter IAC-250)", and he expresses no misgivings about the adequacy of the test. I also reject Mr Higgins' suggestion that the significantly worse results obtained in 2012 were due to deliberate manipulation ("lack of trying") on the part of Mr Roberts. First, the possibility of deliberate manipulation of test results was not explored with Mr Tomkinson in the course of the extensive questions and responses. It may be, for all I know, that the methods adopted by competent audiometrists when performing pure tone audiometry include techniques for identifying false responses. (Indeed, the paper referred to in paragraph 27 below states that there are "many ways" to detect false responses; whether any of those ways were used in the 2012 test has not been the subject of evidence.) If this point were to be pursued, such questions ought to have been explored in advance of the trial. Second, Mr Tomkinson remarks that the audiometric responses were "repeatable and precise". Third, I did not consider that Mr Roberts was the sort of person to fabricate results by giving incorrect responses in the interests of advancing a

false claim; certainly, no sufficient basis has been shown for supposing him to be such a person.

- 23.5 In all the circumstances, Mr Roberts' responses to questions on the occasions of audiometric testing are not, when taken in isolation, a sound basis for inferences as to the actual state of his hearing. More specifically, his claims to have had good hearing in 1986 and to have suffered no deterioration thereafter up till 2005 have to be treated with caution. However, Mr Roberts' evidence suggests that it was after his retirement that he became aware of hearing difficulties. This awareness is likely to have been occasioned in the first instance not by his own subjective perceptions but by the comments of others. That is why he agreed to go for a hearing test in 2012 but told the audiometrist that there was nothing wrong with his hearing. It is probable, in my view, that the adverse comments of others began after Mr Roberts retired from his employment. It is therefore probable that his hearing deteriorated after 2005.
- 23.6 As regards tinnitus, I accept Mr Roberts' evidence as to the nature of the buzzing that he intermittently experiences in his ears. The question is as to when the tinnitus commenced. The 1986 data card (paragraph 8.1 above) records that Mr Roberts did not have tinnitus. He said in cross-examination that he did not know in 1986 what tinnitus was. However, it is very probable that, if in the course of the examination he were asked a question that he did not understand, he would have asked what it meant; in the end he accepted this in cross-examination. In the Response to Defendant, Mr Tomkinson suggested the possibility that the question put to Mr Roberts in 1986 was the question put to him in later years, namely whether he suffered from noises in his ears after work, and that a negative answer "does not exclude him from suffering from tinnitus, as it does not ask if he suffered from noises at any other time, or if he experiences it intermittently, continuously, every day, at night etc, only if he was aware after work, not at any other time." However, Mr Roberts' evidence was not to such effect: he claimed to have had buzzing in the ears for a few minutes after finishing work each day, but not at other times. His evidence was to the effect that tinnitus, in the sense of an intermittent and occasional buzzing not connected with the immediate process of winding down from a shift, started only after his retirement—he could not say when.
- 23.7 There are three possible reasons to be cautious in placing reliance on Mr Roberts' current evidence. First, his perceptions have not always been accurate: see above. Second, Mr Tomkinson observes that it can be difficult to pinpoint the onset of mild tinnitus. Third, Mrs Marshall suggests that the greater peace and quiet of retirement might have made the noises apparent, when they had not been apparent during Mr Roberts' noisy employment. These reasons are not compelling. There is a difference between perception of a deficit and perception of a positive interference. Mr Roberts failed to notice that he was losing his hearing; it is harder to believe that he failed to notice that there was a buzzing in his ears. He is less likely to have failed to notice the buzzing if the question of tinnitus was raised with him directly in questioning upon examination and if, as he claims, he is conscious of the buzzing on waking at night. I do not accept that someone who had buzzing in his ears from, say, 1988 onwards would fail to notice it until some twenty years later. The degree of peace and quiet necessary

to enable one to perceive tinnitus is not the sole preserve of retirement. Anyone who sits quietly while thinking, reading or listening to music, or who lies awake in bed at night, is capable of noticing tinnitus, no matter how noisy the duties of his employment might be.

23.8 The probability is therefore, and I find as a fact, that Mr Roberts did not suffer from tinnitus until after his retirement; greater precision is impossible. I accept his evidence in that regard.

23.9 The question of buzzing in the ears after the end of a shift is both less relevant and more problematic. It is less relevant because it is a merely transitory sensation, relevant to the question whether it is indicative of a potentially harmful level of noise but not the damage on which the claim is founded. It is problematic, because Mr Roberts' evidence that he experienced the noise for some minutes after the end of each shift is directly contradicted by the responses recorded on the data sheets in 2002, 2004 and 2005 (paragraphs 8.6, 8.7 and 8.8 above). In the Response to Defendant, Mr Tomkinson said that the experience of tinnitus immediately following exposure to noise was "a reasonable indication that the noise was likely to have been at a damaging level"; accordingly, if excessive noise stopped in 1987, it was "not unreasonable" to expect that the question asked in 2002, 2004 and 2005 would be answered in the negative. The problem with that is that Mr Roberts' evidence of noise in his ears after work but at no other times was not limited to the period until 1987 but apparently related to the entirety of his employment. I regard it as likely that, although Mr Roberts may occasionally have had a sensation of noise in his ears for a few minutes at the end of his shifts, this was not a regular occurrence and was not accompanied by noises at other times. Only some time after 2005, when his hearing deteriorated, did he begin to experience the buzzing of which he now complains.

24. In the context of these findings of fact, I turn to consider what is to be made of Mr Tomkinson's evidence regarding hearing loss. It is convenient to begin by summarising some of the main points to emerge from the extended survey of the development of that evidence earlier in this judgment.

- 1) Mr Tomkinson has never examined Mr Roberts. His reports and responses to questions are based on the documents.
- 2) Mr Tomkinson's consistent position has been that the audiograms are indicative of noise-induced hearing loss; this is a matter of the distinctive shape of the audiograms and the presence of notches at relevant frequencies. The question concerns the extent of that loss.
- 3) Mr Tomkinson's original opinion, based on the pure tone audiogram from 2012, was that there was an average binaural noise-induced hearing loss (that is, at 1, 2 and 3 kHz) of 10 or 11 dB, depending on which method of assessment was used.
- 4) When he saw the five work-based audiograms, Mr Tomkinson did not dismiss them as unreliable; he did not disregard them because they were performed according to the Bekesy method (even though he noted that Bekesy testing

was subject to inter-test variability) or because they were markedly out of line with the 2012 audiogram. Instead he suggested that a correction of 3 dB be applied to the Bekesy results and opined that the 2012 results showed that deterioration since 2004 was due to factors other than noise. His conclusion was that noise-induced hearing loss at 1, 2 and 3 kHz was nil or minimal, though some damage at higher frequencies might contribute to difficulties with conversation in noisy environments.

- 5) Mr Tomkinson did not depart from those opinions when he wrote his further reports on 14 July and 20 July 2015 (paragraphs 14 and 15 above). Although he expressed reservations about Bekesy testing, he did not say either that it should be disregarded or that the results should be subject to whatever correction would bring them into line with the 2012 audiogram. The loss remained small.
 - 6) Even when he was pressed by Mr Roberts' solicitors in late July 2015, Mr Tomkinson (paragraph 16 above) went no further than saying that the noise-induced hearing loss at 1, 2 and 3 kHz was between 0 and 5 dB and, "on the balance of probabilities, [was] between 3 and 5 dB." That opinion expressly took into account all audiograms, as well as his caveats about Bekesy audiometry. The ultimate choice of a figure of between 3 and 5 dB is unexplained, other than as a matter of judgement, and inevitably gives rise to the uneasy suspicion that it resulted from the terms in which the solicitors had put their question. That was the reason why I refused permission to Mr Roberts to rely on this change of opinion. Mr Higgins makes the point that any problem with the evidence cannot be so easily eradicated.
 - 7) It was only in August 2015, after the original trial was adjourned, that Mr Tomkinson expressed the view (paragraph 18 above) that either the Bekesy audiograms ought to be disregarded entirely or, at least, they ought to be subject to very substantial adjustments so as, in effect, to bring them into line with the pure tone audiogram. He also departed from his earlier view that the significant differences between the results in 2004 and those in 2012 were due to non-noise-related deterioration; now he says that they are the result of changing from one method of testing to another.
25. I have a number of difficulties with Mr Tomkinson's latest opinion. First, while I fully accept that pure tone audiometry is the benchmark, or "gold standard" as he put it, for audiometric testing, it is bold to suggest that self-recording audiometry is radically unreliable. The boldness is the more striking because (a) Mr Tomkinson is happy to rely on six of the seven Bekesy audiograms in support of the diagnosis of noise-induced hearing loss on account of the distinctive shape of the audiograms, and (b) for all his caveats he did not until August 2015 express the opinion that the work-based audiograms ought not to be relied on in assessing the level of hearing loss. If it were really the case that Bekesy audiometry was not a proper basis on which to assess the extent of hearing loss, I should have expected Mr Tomkinson to say so at the outset, instead of merely identifying factors that indicated the need for some caution with the precise figures. The reasoning and literature relied on by Mr Tomkinson do no more than suggest that Bekesy testing is more susceptible of error than manual pure tone audiometry and that the results it gives require some modest adjustment if they are properly to be compared to those produced by pure tone audiometry. They

do not indicate that Bekesy audiometry is not properly used for assessing the degree of hearing loss. Mr Tomkinson's remark in Response to Defendant, answer 2, namely "I accept that there may be alternative views to my own in these matters", seems to me to reflect a proper sense of unease at his own volte face.

26. My second difficulty with Mr Tomkinson's latest opinion is that, although it is to be acknowledged that there is limited information as to the quality of the Bekesy testing in this case and that self-recording audiometry is less consistent upon re-testing than is manual pure tone testing, this is not a case in which one has to seek to rely on a single set of data. Rather there are seven Bekesy audiograms over an 18-year period. They do not show perfect consistency, and Mr Tomkinson has identified a number of particular readings that he believes to be rogue; yet they present a very different picture from that in the 2012 audiogram, and when he first saw them Mr Tomkinson did not think that they were random or incoherent. As I have observed, he was happy enough to use them in support of the diagnosis of noise-induced hearing loss, and they formed the basis of his earlier view that the extent of the hearing loss was very small. Further, in his Response to Defendant Mr Tomkinson states: "It is accepted that a hearing test is considered to be reliable when its test retest result varies within 5-10dB" and "The first 6 audiograms up to 2002 are very similar."
27. My third difficulty with Mr Tomkinson's present opinion is that his latest suggestion for adjusting the Bekesy data does not carry conviction. From the time of his supplementary report onwards, he was using a 3 dB correction factor, to take account of the fact that Bekesy results are said to show performance of about 3 dB better than results from pure tone audiometry. In his Response to Defendant, Mr Tomkinson explains this by means of an extract from a chapter by Dr John R. Franks, "Hearing Measurement", in Goelzer et al., *Occupational Exposure to Noise-Evaluation, Prevention and Control* (World Health Organisation, 1995). His current position, however, is that a significantly greater adjustment, perhaps as much as 15 to 20 dB, should be made on account of "systematic error". It is important to be clear that the proposed adjustment of 3 dB in accordance with Dr Franks' observations arises not from any inaccuracy in the Bekesy testing method but rather from the fact that, whereas self-recording audiometry involves responses to a continuous spectrum of sound, manual pure tone audiometry (the benchmark for the Coles guidelines) tests at 5 dB intervals. Thus a hearing-loss threshold recorded as 10 dB by manual pure tone audiometry might be (for example) 6 dB on Bekesy testing (rounded down to 5 dB), when the error of 3 dB for response time in either direction (louder or quieter) is taken into account. (This "error" will be cancelled out by repeating the process with increasing and decreasing levels of sound.) The different readings thus produced by PTA and Bekesy audiometry are not said to be indicative of any deficiency of Bekesy testing. Mr Higgins has argued powerfully that Dr Franks' figure of 3 to 4 dB, on which Mr Tomkinson relies, is arithmetically incorrect and that the average difference between results on Bekesy testing and those on manual pure tone testing will only be 2 dB. The difficulty with the argument is that Dr Franks, though illustrating his point by a particular example, appears also to be relying on empirical data in other research. It is difficult to comment on the probable relationships between results from different methods of testing on the basis of abstractions alone. The difficulty of making such comment on the basis of inadequate evidence is perhaps illustrated by considering the final two sentences of the relevant section from Dr Franks' chapter, which Mr Tomkinson did not include in his extract:

"A 6 dB trace width [i.e. a 3 dB margin of response error in either direction] is very good and usually provided only by experienced listeners. Most will provide a wider trace width, pressing the button when they first hear the tones and releasing the button when they are sure they don't hear the tones, thus providing a lower estimate of threshold of hearing than would be obtained with manual audiometry."

Accordingly I accept Mr Tomkinson's view that an adjustment of 3 or 4 dB is properly applied to the Bekesy data in order to make them comparable to the benchmark of manual pure tone audiometry; as his reports and responses to questions have until recently been based on a 3 dB correction I think that is the appropriate figure to take. But I reject his description of this as an allowance for "systematic error"; it is rather because the guidelines under the Coles Method are based on results from pure tone audiometry, which provides different results.

28. The supposed justification for a larger adjustment, maybe as high as 20 dB, is drawn from a paper by Ishak et al. on the test-retest reliability of Bekesy testing as compared with pure tone audiometry. A number of subjects with normal hearing underwent pure tone audiometry and also Bekesy testing over four consecutive days, using a comparable sweep rate. (Audioscan audiometry was also tested; that is irrelevant for present purposes.) Very high reliability was found in the pure tone audiometry. However, Bekesy results differed significantly from pure tone audiometry at all frequencies except 6 kHz. Thus: at 1 kHz 57% of results were within 5 dB variability and 83% within 10 dB variability; for 2 kHz the figures were 57% and 76%; for 3 kHz the figures were 63% and 83%. Mr Tomkinson says that "in the real world" the margin of variation is likely to be greater, because testing conditions are likely to be less ideal and the subjects are likely to have poorer hearing. It is not immediately apparent why those factors, and in particular the quality of the subjects' hearing, should affect the re-test performance of Bekesy testing by increasing the degree of variation.
29. Mr Tomkinson's argument drawn from the Ishak paper seems to me to raise a number of problems. First, evidence of inter-test variability was very much in Mr Tomkinson's mind when he wrote his supplementary report (see paragraph 11 above) and thereafter (see paragraphs 14, 15 and 16 above), but despite this he did not then suggest the kind of adjustments he is now advocating. I cannot see that he has given a proper explanation of his apparent change of opinion, when the grounds on which he expresses his present opinion were known to him previously. Second, the nature of the reliance that Mr Tomkinson now seeks to place on the Ishak paper is somewhat undermined by his observation, quoted above, that the first six Bekesy audiograms were "very similar". Third, there is nothing in what Mr Tomkinson has referred to in the Ishak report that convincingly explains the great difference between the fairly consistent Bekesy results and the 2012 results. If anything in the paper does explain the difference convincingly, Mr Tomkinson has not identified it. Fourth, Mr Tomkinson's proposed adjustments do not seem to be firmly grounded in the Ishak paper. He states: "It is not possible to accurately state or calculate what an appropriate correction might be in this case, but this could be more than 10 dB at some frequencies. The change seen between 2004 and 2012 suggest (sic) this may be as much as 15 or possibly 20 dB in this particular case, if no pathological cause for

this change can be identified.” This is simply to use the Ishak paper as an opportunity to propose as big an adjustment as is required to produce the required result (namely, reliance on the 2012 audiogram as establishing the extent of noise-induced hearing loss), without attempting to demonstrate that such large adjustments are actually warranted by the findings of the paper. (I comment further on the apparent deterioration between 2004 and 2012 below.) A further comment is that the conclusion drawn by Ishak et al. was that in the interests of reliability a slower sweep rate should be used for Bekesy testing than for pure tone audiometry; in that experiment the same sweep rate was used. I do not think that it has been established what sweep rates were used in the present case. However, I do not rely on this observation, because the likely manner of operation of the work-based testing of Mr Roberts is not within my knowledge.

30. My fourth difficulty with Mr Tomkinson’s present opinion is that until August 2015 he was apparently happy enough to posit a non-noise-related and non-age-related cause for the apparent deterioration of the claimant’s hearing. But he now appears to work on the assumption that “no pathological cause for this change can be identified” and that therefore there has been no great deterioration at all, the non-age-related part of the damage having been occasioned by 1987 at the latest. This seems to me to be decidedly odd. Mr Tomkinson has not now done any more than he had done in February 2014 to investigate and establish whether there were indeed a particular cause of the apparent deterioration. Previously he regarded it as likely to be an actual deterioration, due neither to noise nor to age. Yet, without any material change of data regarding either the reliability of the testing methods or Mr Roberts’ pathology, he now assumes that there has been no deterioration other than the age-related component and attributes the change to an “artefact”. It is no answer to say that no specific cause for the deterioration has been identified; that was as true previously as it is now, yet Mr Tomkinson had no difficulty in attributing the deterioration to some unidentified cause. He correctly understood that the fact that no specific cause of a phenomenon has been identified does not indicate either that there is no specific cause or that the phenomenon is illusory. As I have explained, there are good grounds for concluding that Mr Roberts’ hearing did indeed deteriorate noticeably after his retirement, to the extent that his family and friends began to comment on it.
31. A fifth problem concerns Mr Tomkinson’s use of the 75th percentile in the standard Coles Table 2 when assessing the age-related component of Mr Roberts’ hearing loss on the basis of the Bekesy data. Mr Higgins objects that Mr Tomkinson uses the 50th percentile for the purpose of performing the same exercise with the 2012 audiogram; he says that the same percentile should be used in both cases and that, in the absence of some particular factor dictating otherwise, it is properly the 50th percentile. (The effect of using the 75th percentile is to reduce the age-related component of hearing loss and correspondingly increase the component attributed to noise.) However, in the Response to Defendant Mr Tomkinson states: “The Bekesy audiograms require the 75th centile of the reference data (if its use in these tests were to be considered appropriate), whereas the PTA requires the 50th.” This results in an unsatisfactory position, for a number of reasons. First, one would have thought that the same percentile would be applied to both forms of testing, because Coles Table 2 is intended for the purpose of identifying the age-related component of hearing loss. Nothing in Coles Table 2 or in the Coles paper suggests that different approaches are required for different audiometric methodologies. Second, when Mr Tomkinson

wrote the supplementary report (paragraph 11 above) he specifically considered both the 75th and the 50th percentiles in respect of the Bekesy data; there was no suggestion that only the 75th percentile was appropriate. Third, Mr Tomkinson did not, in the Response to Claimant or the Response to Defendant, offer an explanation for the difference of approach. Against these difficulties must be set the fact that Mr Tomkinson's recently expressed opinion is that the 75th percentile is the appropriate one to use for the purpose of the Bekesy audiograms. This opinion, expressed by the only expert in the case, is not simply to be disregarded.

32. Faced with what I perceive to be these difficulties, I must do the best in the light of the totality of the evidence. The survey of the medical evidence and a consideration of the way in which Mr Tomkinson has expressed his opinions from time to time combine to persuade me that there is a danger of a pseudo-scientific approach to quantification of hearing loss in this case. For practical purposes, the same point is apparent from the question of the use of differing percentiles, which involve placing the subject within broad statistical categories. I am unable to accept that the use of the 75th percentile in conjunction with the Bekesy results is simply the "right" course, because that is not how Mr Tomkinson has approached the matter until after the first trial date and because he has not provided a cogent explanation of why his former approach was wrong. However, in the face of Mr Tomkinson's present approach, I have insufficient grounds on which to suppose that the use of the 50th percentile is itself simply the "right" approach either. Mr Tomkinson's earlier approach was less exclusive than either of these courses would suggest and I think it better to view the evidence in the round.
33. For reasons indicated above, and with hesitation on account of the matters mentioned in paragraph 22, I prefer the opinion expressed by Mr Tomkinson in his supplementary report to the opinion that he now advances with regard to hearing loss. In my judgment, his change of opinion is based on no material change of data and has not been justified by any sufficiently cogent argument, but has the appearance of an exercise in salvaging the case by backtracking from unfavourable opinions and finding reasons why new data (viz. the Bekesy results) should have no material impact on opinions originally formed without reference to those data. Mrs Marshall says that it is unsatisfactory to rely on Bekesy audiometry rather than the benchmark pure tone audiometry. There is some force in that point. But there are good reasons to base the relevant findings in this case on the sequence of seven Bekesy audiograms from the time of Mr Roberts' employment rather than to rely on the significantly later pure tone audiogram. Mr Tomkinson acknowledges that there may be alternative views to that which he now advances, and I prefer the alternative that he advanced previously.
34. The Bekesy audiograms, when adjusted by 3 dB on account of the methodology, produce average binaural figures for hearing loss at 1, 2 and 3 kHz of somewhere between nothing and 4 dB, according to Mr Tomkinson's latest figures, if the 75th percentile is used. It is to be noted that in his supplementary report he put the figure at 1.6 dB, which is marginal. If the 50th percentile is used, there is no measurable loss at those frequencies, referable to noise damage. The proper conclusion, in my judgment, is that the noise-induced hearing loss at these frequencies is very small. There is some artificiality in identifying a precise figure; if I must, and doing the best

I can with regard to all the evidence, I should assess it as being 1.6 dB on the balance of probabilities.

35. Mr Higgins submitted that any hearing loss was so slight as not to amount to actionable injury. The leading case is *Johnston v NEI International Combustion Ltd* [2007] UKHL 39, [2008] 1 AC 281. Lord Hoffmann said at [19] that a claimant in a personal injury action suffered actionable damage if he was "appreciably worse off" by reason of the physical changes to his body. Lord Rodger of Earlsferry at [87] expressed the matter in terms of the need for "material damage", which should probably be taken to be substantially the same test. Mr Higgins referred me to the decision in *Holloway v Tyne Thames Technology Ltd* (the County Court at Newcastle, 7 May 2015), where H.H. Judge Freedman said that, if he had found that the claimant had suffered an average binaural noise-induced hearing loss of 3 dB over 1, 2 and 3 kHz, he would not have been satisfied that there was an appreciable loss, albeit that there would be a noticeable loss. I make four comments on that dictum. First, decisions of the County Court do not constitute precedents; that is of course true of this decision also. Second, a decision as to what does and does not constitute an actionable injury is a matter of fact and degree and must turn on the evidence in the particular case. A finding on the evidence in one case is not a proper basis for a finding in another case where the evidence has been different. I have not had evidence of the kind that Judge Freedman had and cannot decide this case on the basis of the evidence that was before him. Third, the dictum appears to have been obiter. Fourth, and with great respect, if the dictum means that a loss of hearing that is capable of being subjectively appreciated by the hearer may not be compensable, I should be reluctant to agree. The critical point in *Johnston* was that the physical changes caused neither functional impairment nor any symptoms. A hearing loss that is imperceptible, though scientifically measurable, and that has no functional impact would be in the same case. However, an impairment of the sense of hearing that is perceptible by the hearer would seem to be a different situation, even if it did not result in any apparent functional impairment. I do not quite see why one should not be compensated, even if only modestly, for physical changes that result in a noticeable diminution of the faculty of hearing.
36. In the present case, the evidence adduced on behalf of Mr Roberts does not establish that the level of hearing loss at 1, 2 and 3 kHz, as I have found it to be, would be either perceptible or functionally significant. However, Mr Tomkinson's evidence in the supplementary report (paragraph 11 above) was that the presence of noise-induced hearing loss at 4 and 6 kHz was likely to contribute to hearing difficulties in the presence of background noise. That opinion, from which Mr Tomkinson has not resiled and which in my judgment has not subsequently been undermined, is sufficient to establish material, though very minor, damage. The fact that loss at 4 and 6 kHz is not included in the calculation of average binaural hearing loss would militate against this conclusion only if it were shown on the evidence that the reason for its non-inclusion was that it had no impact on function or perception. In fact, the evidence before me is, to the contrary, that it can and in the present case does have some functional significance.
37. In the light of my findings, the award of damages for hearing loss must be very small. The evidence establishes the bare minimum for a finding of actionable damage; the contribution of noise damage to the overall disability is very slight. For this minimal

level of actionable damage an award of only £1500 can be justified. In view of the small level of the contribution of noise damage to the total disability, the claim for damages in respect of the cost of hearing aids must fail; the need for hearing aids is not due to noise-induced hearing loss.

38. As regards tinnitus, Mr Tomkinson's evidence is to the effect that, if tinnitus is the result of noise damage, its onset is to be expected within one year of the end of exposure to excessive noise. As such exposure finished in 1987, tinnitus first occurring after 2005 is unlikely to be related to noise. Mr Tomkinson says that a known cause of tinnitus is to be preferred to an unknown cause as an explanation of symptoms. There is only limited force in that observation. The known cause in this case, namely exposure to excessive noise, does not explain tinnitus with such a late onset. It is known that tinnitus can be idiopathic; that is true both of people who have and of those who have not been exposed to noise. As there is nothing extraordinary in tinnitus that is not noise-related, and as Mr Tomkinson's own criteria for identifying noise-related tinnitus do not fit this case on the facts, I find no impediment to concluding that Mr Roberts' tinnitus is not related to his exposure to noise at work.

Conclusion

39. I award £1500 as general damages for noise-induced hearing loss. I make no award in respect of tinnitus or in respect of financial loss.
40. This judgment is being handed down in the absence of the parties, to whom it has previously been provided in draft. As they have been unable to agree the terms of the order consequential upon this judgment, I shall adjourn consideration of interest and costs to a hearing on a date to be fixed. No application for permission to appeal has been intimated to me; the time for making any such application to the Court of Appeal will therefore run from the handing down of this judgment.
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