Neutral Citation Number: [2023] EWHC 459 (KB)

Case No: QB-2020-003077

IN THE HIGH COURT OF JUSTICE
KING'S BENCH DIVISION

Royal Courts of Justice
Strand, London, WC2A 2LL

Date: 3 March 2023

Before :

MR JUSTICE JOHNSON

- -

Between :

MR JAMES BARRY	**Claimant**
- and -	
MINISTRY OF DEFENCE	**Defendant**

- -
- -

Harry Steinberg KC, Robert O'Leary and David Green (instructed by Hugh James) for the Claimant
Andrew Ward (instructed by Keoghs LLP) for the Defendant

Hearing dates: 18 January 2023 – 27 January 2023
Further written evidence, and written submissions: 24 February 2023

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Approved Judgment

This judgment was handed down by release to The National Archives on 3 March 2023 at 10.30am.

Mr Justice Johnson:

1. Mr Barry claims damages for personal injuries (noise induced hearing loss) and consequential losses sustained in the course of his service in the Royal Marines. He says that his injuries prevented him from continuing to serve in the Royal Marines, potentially attaining the rank of Warrant Officer. Instead, he was medically discharged from the military. He now drives lorries, which he finds unfulfilling. It is also less secure. The Ministry of Defence (MoD) admits that it breached its statutory duties to Mr Barry, and that it was negligent, including by failing to provide Mr Barry with suitable hearing protection. It says that Mr Barry is, in part, himself to blame for his hearing loss (for failing always to use such hearing protection as was provided) and that the compensation payable to him should be reduced on the grounds of contributory negligence. It says that he was unlikely to achieve the career profile he claims and that, anyway, his earning capacity in civilian employment is no less than his earnings as a Marine. Mr Barry values the claim at around £1.5M. The MoD value the claim at around £250,000 (before a reduction of up to 30% for contributory negligence). The principal issues between the parties concern contributory negligence, and the valuation of Mr Barry's claim for loss of earnings. Mr Steinberg KC, on behalf of Mr Barry, also invites resolution of issues as to:

   (1) the method of diagnosis and assessment of noise induced hearing loss that is appropriate in a military context,

   (2) whether synaptopathy occurs in humans, and

   (3) whether exposure to noise during military service affects the subsequent progression of hearing loss after the exposure ends.

2. Many other claims for noise induced hearing loss by service personnel are awaiting trial. They are being case managed together. This case is not part of that group. It was brought before that group was formed. There is an overlap between the issues in this case and some of the issues that arise in the other cases. It is only appropriate to resolve those issues that are necessary to determine Mr Barry's claim, and to do so only on the evidence that has been deployed in this case by the parties to this case. There is no group litigation order (or other direction) which could have the effect of applying the findings in this claim to other cases.

The trial

The factual evidence

3. Mr Barry gave evidence concerning his military service, his use of hearing protection, his ambitions and career prospects if he had not been medically discharged, his work plans for the future, and the impact of hearing loss on him, his work and his family.

4. He says that he was not trained in how to use hearing protection, but suggests that such training was unnecessary because it was obvious how ear-defenders and earplugs should be used. He used hearing protection when he could, but there were two significant problems. First, he could not use hearing protection in his left ear when he was also wearing a personal role radio, because if he did so he could not hear the radio communications. Second, the earplugs often fell out when undertaking vigorous

physical activity (including when on exercises that involved the simulation of warfare). They could be replaced when there was an opportunity to do so, but this meant waiting until there was a pause in the fighting to permit a "re-org".

5. Timothy Outten and Sergeant Glenn Walker are friends of Mr Barry. They both served in the Marines (Sergeant Walker still does). Mr Outten says that he was trained in how to insert earplugs. He also found that they fell out during physical activities. They could be replaced at a re-org but this was not always at the forefront of his mind. Further, it was necessary to strike a balance between maintaining situational awareness and ensuring hearing protection. Like Mr Barry, he did not use hearing protection for his left ear when using his personal radio, and he did not know anyone else who did so. He says that even if the volume is set at maximum, it is not possible to hear the radio if an earplug is in place.

6. Sergeant Walker cannot recall if he was trained in how to insert earplugs, but says he was never trained in how to wear hearing protection when operating the personal radio. His practice is to put an earplug in his left ear so that it is "half in and half out". He says that if you put the earplug all the way in then it is not usually possible to hear the radio, so he tries to do the best that he can. Sometimes he takes the earplug out of his ear altogether to enable him to hear the radio. The quality of the radios varies, but with most of them it is not possible to hear the radio if hearing protection is used. He said that officers get first pick of the equipment and so might be able to choose radios that can be heard when using hearing protection. He also says that earplugs fall out during exercises, but they can then be replaced during a re-org.

7. Latoya Atkinson is Mr Barry's partner. She explains the impact of military service on their family life. She says that she supported Mr Barry's career in the Royal Marines. Her twin daughters were born in 2017. She says that if he had not been medically discharged Mr Barry would have remained in the Marines following the birth of their children. He would not have left the military for civilian employment. The military lifestyle (which allows for lengthy periods of leave) suited the family, even though it meant that Mr Barry was away for long periods when he was on duty. Ms Atkinson also addresses the impact of Mr Barry's hearing loss.

8. The MoD rely on the evidence of Major Alex Ainsley, Captain David Richmond, Major James Fuller, Major Lee Stewart, Major Richard Garman and Major Christopher Jesson. The witnesses called by the MoD were confident that Mr Barry would have been trained in the use of hearing protection. None of them was able to give direct evidence as to the training he had been given. Nor did any witness point to any written documentation (such as lesson plans, handouts or video demonstrations) to show what training he had been given, or what training was generally given, or what the general policy was in respect of the provision of hearing protection. This was despite the bundle of material that was adduced in evidence exceeding 8,000 pages.

9. Major Garman was responsible for Mr Barry's troop during basic training (from the point when Mr Barry re-joined basic training after the rehabilitation for his leg fracture). He explains that recruits are trained in the use of hearing protection when using firing ranges. On static ranges it is usual to use ear defenders. Ear defenders are not compatible with all types of helmet, and they can compromise situational awareness. Outside the context of static ranges, earplugs are often used instead. Earplugs can fall out when undertaking a military exercise, but they can then be replaced during a lull.

10. Major Ainsley was Mr Barry's troop commander during an exercise known as "black alligator". This was when much of Mr Barry's hearing loss occurred. Major Ainsley says there was a general order to use hearing protection and that Mr Barry was instructed to wear earplugs whilst using his radio (with the earplug in the ear, underneath the radio's ear-piece). When Mr Steinberg KC demonstrated how, he said, earplugs should be inserted (by using the opposite hand to pull the ear helix so as to expose the ear canal before then inserting a squeezed ear plug, holding the earplug in position whilst it expands to fill the ear canal) Major Ainsley candidly said that he had not known that. He uses a pair of earplugs for 1-2 weeks at a time before replacing them. He was not aware that they are only intended for single use. He accepts that there is a balance to be drawn between hearing protection and the need for situational awareness, but says that Marines are expected to exercise common sense. He accepts that earplugs tend to fall out during exercises. He does not have a problem with this, but he recognises that others do. The armed forces have equipment that enables communications between Marines, and the maintenance of situational awareness, whilst also providing hearing protection, but this is not made available during exercises such as black alligator. He accepts that it is more difficult (but, he says, possible) to hear the radio when wearing an earplug. When pressed, he accepted that many of the radios were old and that "with some of the worse ones" it might not be possible to hear the radio transmissions when wearing an earplug.

11. Major Richmond recognises that there is a tension between using hearing protection and maintaining situational awareness. He agrees that earplugs can fall out when moving around. In common with other witnesses, he says that there are natural pauses during exercises, and these provide an opportunity for earplugs to be replaced.

12. Major Fuller gives evidence about the enforcement of the wearing of hearing protection when using firing ranges. Ear defenders were consistently used (including by Mr Barry) when firing weapons at static ranges. Major Fuller says that health and safety officers are used to ensure the rules are properly followed. If a health and safety officer sees someone not properly using hearing protection then they would pull them up. There is no evidence that Mr Barry was ever pulled up for not properly using hearing protection.

13. Major Stewart gives evidence about exercise black alligator and the wide array of health and safety issues that had to be addressed (including risks of heat exhaustion, vehicle accidents and snake bites). He accepts that individual Marines might, in particular circumstances, legitimately decide not to use hearing protection so as to maintain situational awareness.

14. Major Jesson is one of 4 Royal Marine branch managers who are responsible for ensuring the available workforce at different ranks is sufficient to meet the Royal Marine's needs. One of his roles is to produce career projections. He produces a projection for Mr Barry's case, based on an assumption that he would be promoted in line with an "average" Marine. He also gives helpful evidence about qualification as a medic, and attachment to the Special Boat Service.

15. I accept that all witnesses are entirely honest and are doing their best to assist the court. Much of the factual evidence given by the witnesses called by the MoD assists Mr Barry's case. In particular, his account about earplugs falling out is consistent with the evidence given by the MoD's witnesses. His account about not being able to hear the radio if using an earplug is not, ultimately, inconsistent with the evidence given by the

MoD's witnesses. To the extent that the MoD's witnesses give evidence about the training that Mr Barry received this is based more on their expectation as opposed to direct evidence as to what Mr Barry was told. I accept Mr Barry's evidence that he was not told to wear an earplug in his left ear at the same time as using a personal role radio. His account is consistent with that of others, and there is no convincing evidence to rebut it.

The expert evidence

16. The parties relied on experts in otolaryngology, audiology, hearing aids and military career projections. Mr Hisham Zeitoun, Professor Brian Moore, Desmond Robertshaw, Dr Amjad Mahmood and Jon White are instructed on behalf of Mr Barry. Professor Mark Lutma and Alasdair Cameron are instructed on behalf of the MoD.

17. Mr Zeitoun is a consultant otolaryngologist, head and neck surgeon. His evidence (which is largely unchallenged) is that Mr Barry has developed noise-induced hearing loss (causing a degree of disability) and a moderate degree of tinnitus (causing a degree of nuisance). He says (using Professor Lutman's methodology and the recognised method for calculating binaural loss) that Mr Barry's binaural average hearing threshold is 22.7dB. Of this, noise-induced hearing loss is 20.3dB the balance (2.4dB) being due to hearing loss due to age and all other causes. In the left ear there is a greater component of hearing loss at the 2kHz frequency (exceeding 30dB). The audiograms show that most of the noise-induced hearing loss developed between January 2014 and May 2015.

18. Mr Robertshaw and Dr Mahmood give evidence as to the benefits for Mr Barry in using hearing aids. They agree that the use of hearing aids would significantly improve Mr Barry's hearing. Mr Robertshaw recommends a model that Mr Barry has trialled and found to be particularly helpful. Professor Lutman points to the availability of less expensive alternatives.

19. Mr White and Mr Cameron give evidence on military career projection. They have both served in the military (and, have direct experience of recruitment and promotion exercises), Mr White in the Royal Navy and Mr Cameron in the Army. They are both in a position to give evidence as to military career progression, although Mr Steinberg submits that Mr White is better placed to do so in respect of the Royal Marines.

20. Professor Moore and Professor Lutman are each eminent scientists. Professor Moore is an elected Fellow of the Royal Society and the Academy of Medical Sciences. Professor Lutman has served as President of the British Academy of Audiology, and is an author of guidelines relating to the diagnosis of noise induced hearing loss in medicolegal practice that have been in widespread use for 20 years. They have both published many papers, including on the assessment of hearing loss. They have each published, in peer reviewed journals, proposed methods for diagnosing and quantifying noise induced hearing loss. They present different and competing (or, arguably, complementary) models for the assessment of noise induced hearing loss, relying on their published work and that of other scientists. They also give evidence as to synaptopathy (the loss of synapses that connect the inner hair cells of the cochlear to the auditory nerve) and consequential neuropathy (degeneration of neurons in the auditory nerve) which can lead to difficulty in distinguishing and understanding speech, even in a person who does not otherwise have significant hearing loss as measured by audiogram.

21. Professor Moore's view is that military noise exposure can lead to synaptopathy and that, whether by that mechanism or otherwise, the evidence indicates that military noise induced hearing loss is likely to result in ongoing deterioration in hearing, beyond that which can be attributed to age, even after noise exposure ceases. Professor Lutman says this is controversial and is yet to be scientifically established. He points to a consensus paper authored by leading scientists in the field which suggests that further work is required before firm conclusions can be drawn. He also points to the absence of a long term large scale longitudinal study into these matters.

22. The parties also adduce written reports from pension loss experts and engineering experts (dealing with noise exposure). The value of the pension loss claim is now agreed (subject to any reduction for contributory negligence). The extent of noise exposure is also broadly agreed. The noise exposure experts agree that full and proper use of hearing protection by Mr Barry would have prevented, in the great majority of cases, his exposure to noise exceeding the relevant limit in the Control of Noise at Work Regulations 2005 (ie a maximum sound pressure of 140dB). It is unnecessary to discuss these reports further.

The scientific literature

23. I was provided with in excess of 30 published papers that address the diagnosis and quantification of noise induced hearing loss, synaptopathy and neuropathy, and the acceleration of hearing loss after noise exposure. Professor Lutman and Professor Moore provide competing opinions on the conclusions that can be drawn from the published literature. Their opinions were subject to close scrutiny in the course of cross-examination.

Further evidence and representations after the hearing

24. After the end of the hearing, Mr Barry's representatives indicated that he wished to make a further statement in respect of matters that occurred following the hearing. On 20 February 2023 Mr Barry filed an application notice seeking permission to rely on a further witness statement.

25. I made directions for the filing of representations on the point. The MoD agree that Mr Barry should be permitted to rely on a further witness statement, and do not seek a further hearing so that he can be cross-examined on it. Mr Ward, on behalf of the MoD, filed further written submissions in the light of the new evidence.

26. In Mr Barry's additional statement he says that during the trial, when he was away from work, other drivers covered his shifts. They made mistakes, and agency staff did not turn up for work, resulting in a customer cancelling a contract with Mr Barry's employer. On 17 February 2023 Mr Barry's employment was terminated. The reason given was that his driving had not met the required standard (he had had three minor accidents).

The factual background

Royal Marine selection

27. Mr Barry is 34. He left school at 16 with 5 GCSEs. He completed a 2-year HGV apprenticeship, qualifying as a mechanic with an NVQ level 2 in motor vehicle repair and maintenance. He worked as a mechanic for about a year before joining Kwik-Fit as a vehicle technician, becoming a supervisor, staying in that employment for 3 years. He then worked as a sales manager for a vehicle breakage business. His step-father had served in the Army and three of his friends had joined the Royal Marines. Mr Barry decided to apply to join the Royal Marines. Before doing so, he was required to remove a tattoo. This took 12 sessions over a year, costing £740. He also trained hard so that he could cope with the physical demands of the Royal Marines, and particularly the renowned challenges of basic training. Records show that he said that he was in a relationship and that his partner (then, as now, Ms Atkinson) supported his wish to join the Royal Marines. This was confirmed by the evidence given by Ms Atkinson. Mr Barry passed initial selection (the evidence suggests that only around 20% of candidates pass that phase). Mr Barry enlisted into the Royal Marines in February 2013 at the age of 24, for an 18 year engagement (extended the following year to a 20 year engagement, expiring in February 2033). At the time of enlistment he said that he had not been exposed to excessive loud noise, and there was no evidence of any hearing deficit. An audiogram conducted in January 2014 showed that he had good hearing in both ears.

Service in the Royal Marines

28. Basic training in the Royal Marines takes 32 weeks. In week 10, Mr Barry sustained a fracture to his leg. He underwent 5 months rehabilitation before resuming, and successfully completing, his training. In the course of his basic training he was issued with ear-defenders and foam earplugs. He was trained in the use of the SA80 semi-automatic rifle. When firing the rifle at a static range a thorough safety brief was given, which covered the need to use hearing protection. Mr Barry wore his ear-defenders when attending the static range. He undertook a 3 day exercise on Woodbury Common, largely involving navigation skills. He did not wear hearing protection during this exercise (and says he was not told to do so). In the course of the night his group came under a mock attack, involving the firing of weapons and requiring Mr Barry and his group to return fire. He estimates that around 4,000 rounds were fired during the exercise.

29. Mr Barry was issued with a personal role radio. This comprises a headset which fits over the left ear. It does not provide any hearing protection. It is not possible to wear ear defenders over the radio's ear-piece. Mr Barry says that when wearing the radio he would (if he needed hearing protection) wear an earplug in the right ear, but not the left ear. He says he was not given any instruction about the use of earplugs in the left ear, under the radio. On occasion, he tried to wear an earplug under the radio ear-piece, but he found that he could not then hear the radio. Mr Barry also found that the earplugs would stay in place if he was static, but would tend to fall out during more vigorous military exercises (which could involve running, diving to the ground, slamming into walls). So, on many occasions, Mr Barry did not have hearing protection in place in both ears when weapons were fired.

30. Mr Barry successfully completed his basic training (around half of candidates do not do so). A report at the end of his training gave Mr Barry an overall grade B, indicating that he was performing to the standard expected in all respects. It was said that he was determined and enthusiastic and had worked hard and performed to the required standard throughout training, and that he was confident but needed to guard against over-familiarity. There were occasions when he had "done the easy thing and not the right thing" and there were occasions when he had appeared disrespectful, arrogant and over familiar. He had finished in the bottom third of the troop and would make a good rifleman.

31. An annual appraisal in August 2014 (covering the period 2013-14) gave Mr Barry an overall performance grade B, with a B grade for each individual assessed attribute. He was said to have shown a promising start to his career in the Marines.

32. It is likely that the noise exposure that resulted in much or all of Mr Barry's hearing loss was sustained during exercise black alligator. This was a large scale exercise. The training area was around 1000 square miles, and included a dummy town to practise urban warfare. It took place between August and October 2014 in Twentynine Palms, California. It involved the use of many weapons besides the SA80. These included flash bangs, flash crashes, grenades, and a general purpose machine gun which was operated within 10 metres of Mr Barry.

33. Mr Barry says that F16 fighter jets provided support, flying overhead and dropping concrete bombs (within a range of 1km of Mr Barry), and at one point a F16 flew at low level immediately above Mr Barry. Mr Barry's account on this issue was disputed by Major Ainsley who was present on the exercise and who said that he did not remember seeing F16s and that he would have remembered because this would have been a "once in a lifetime experience." A contemporaneous briefing document indicates that 4 F16s were deployed on the exercise to "engage depth targets." I accept Mr Barry's account.

34. The dummy town comprised mock buildings that were used for urban warfare training. These were fabricated from metal shipping containers. This meant that the noise from gunfire and other weaponry reverberated within the containers and was "incredibly loud."

35. Mr Barry wore his earplugs during the exercise, but they often fell out. When using his personal role radio he did not wear an earplug in his left ear. He had ringing in his ears at the end of each day of the urban warfare training.

36. When Mr Barry returned from black alligator in November 2014 he started to notice tinnitus in his left ear. This was a constant, high pitched noise which was intrusive, particularly at night.

37. In April 2015 Mr Barry indicated that he wished to qualify as a medical assistant. This involves a 12 month course. There is a waiting list to get onto the course. It is possible to progress more rapidly up the waiting list by volunteering for an unpopular posting. Mr Barry took advantage of that scheme. He also indicated that on completion of the medical assistant's course he wished to attend a "black serpent" course. This would qualify him to support the Special Boat Service as a medic.

38. In May 2015, Mr Barry was medically downgraded due to hearing loss with a recommendation that he have an annual audiogram and that he should avoid unprotected exposure to loud noise. An audiogram conducted in July 2015 indicated mild mid to high frequency sensorineural hearing loss in the left ear, with accompanying tinnitus.

39. An annual appraisal in September 2015 (covering the period 2014-15) gave Mr Barry an overall performance grade of B- (performing to standard expected in most respects). He received B grades in respect of some individual attributes, and did not receive any grade below B-. He was said to be developing towards promotion at both one and two ranks up. He was recommended for the medical assistants course. It was said that this had been a disappointing reporting period, with reference to petulance and an "egotistical attitude". He was placed in the bottom sixth of marines. It was also said that after being spoken to by his superiors he had re-addressed his attitude and had produced a sound performance, and that he had demonstrated grit and determination to complete a particular exercise.

40. Mr Barry's evidence is that the negative comments in this report were largely the result of a single incident where he had expressed disagreement with an instruction given by a Lance Corporal. His unit had been undergoing a training exercise in Norway where the temperatures were as low as -40^{o}C. The standard operating procedure when starting the day's activities was for everyone to pack at the same time, so that nobody was left standing in the cold whilst others packed. The Lance Corporal had decided that his unit should pack first, so that they could be ready first and that (says Mr Barry) the Lance Corporal would "look good". Mr Barry objected to the instruction, citing the standard operating procedure.

41. In November 2015, Mr Barry moved to a role where he delivered teambuilding and leadership training in schools and colleges. He suggests that a reason for the move is that it would then be easier for him to start the medical assistants course. An annual appraisal in August 2016 (covering the year 2015-16) gave Mr Barry an overall performance grade of B, with B+ grades (performing above expected standard in most respects) for professional effectiveness, initiative, powers of communication, and "courage and values". He did not receive any grades below B. He was developing towards promotion, and was recommended for promotion two ranks up (in due course). He was also recommended for the medical assistants course. It was said that he "perfectly fits the image of the Royal Marines" that he had "performed well" and was a "very capable individual." He was not yet ready for promotion, but would be a strong contender in the future with "the reach to at least [sergeant] if not beyond." He was placed in the middle third of Marines in his unit.

42. In October 2016 Mr Barry was placed before a medical board. The recommendation made to the medical board by a warrant officer in Mr Barry's unit was that he should be retained until the send of his service if possible, and that he was a highly effective marine who had plenty to offer and the potential for a full career. The medical board found that he had bilateral sensorineural hearing loss with left sided intrusive tinnitus. The board found this had developed after exposure to loud noise during black alligator. A typed statement in the board's papers, attributed to Mr Barry, indicates that he wished to be discharged. The MoD's evidence is that such statements must be signed before they are submitted (and there is a space for a signature block). Mr Barry denies writing

the statement. The statement is unsigned. There is no evidence as to how (or by whom) the statement was compiled. I do not place any weight on the document.

43. On 28 October 2016 the decision was made to discharge Mr Barry on medical grounds due to noise induced hearing loss. His last day of service was 10 February 2017.

Hearing protection available to Mr Barry during his service

44. Mr Barry was provided with two alternative forms of hearing protection: ear-defenders and the general service earplug. The ear-defenders comprise a single piece that fits over the head and covers both ears. They are used during firing on static ranges. They cannot be used in conjunction with the personal role radio. Nor can they be used with certain types of helmet.

45. The earplugs comprise two cylindrical pieces of yellow foam which can be squeezed and inserted into the ear canals. Once inserted they expand to fill the ear canals to reduce noise exposure. In a MoD document that was in circulation in 2012 it is said that the earplug is "best for… [s]hort periods and live / blank firing events when [situational awareness] is less important… [c]omfortable and easy to fit." It is said that it is "not so good for… [r]epeated use over a number of days because foam collects dirt over time [or c]ombat patrolling because reduces [situational awareness] by blocking out sound." The same document refers to another form of hearing protection (personal interfaced hearing protection, PIHP) which is said to be best for combat patrolling on foot, field firing and blank training when communications and situational awareness are required. The PIHP was not available to Mr Barry.

46. On 11 April 2012, a MoD paper was written on "noise induced hearing loss resulting from operational deployments." This was in response to an instruction to investigate the process for ensuring that every soldier in the Army is warned of the risk of noise induced hearing loss and instructed in the use of ear protection. The author of the paper was unable to find any publication that referred to the use of hearing protection with the personal role radio.

47. In correspondence the same year, it is suggested that when firing the SA80 rifle both the ear defenders and earplugs should be worn (in conjunction) to bring the peak sound pressure levels down to a safe level. The correspondence includes advice that this be recommended to all personnel involved in firing SA80 5.56mm live ammunition. There is no evidence that Mr Barry was ever instructed to wear both ear defenders and earplugs at the same time when firing the SA80.

Career since discharge from the Royal Marines

48. When Mr Barry was discharged from the Royal Marines, his step-father gave him an office-based job. He decided, with a friend, to set up a business in vehicle breakage. Initially, he was a sole trader. In 2019, the business was incorporated and Mr Barry became a director and drew a gross annual salary of £37,500.

49. Mr Barry found that he did not like the expectations of the customers, or the people he was working with, or his business partners. He left the business in November 2021. He took a job as a lorry driver. He worked on a shift pattern of five days on and three days off. He did not find the job fulfilling. He worked shifts (5 days on; 3 days off). He did

not consider he had quality time with his family, because when he was not at work he was tired and spent much of the time sleeping. His employment was terminated on 17 February 2023.

50. Mr Barry considers that he needs to earn at least £40,000 a year to be able properly to support his family. He has managed to achieve earnings in excess of that level in his most recent employment. He is determined that he will continue to do so.

Practical impact of hearing loss

51. Mr Barry is embarrassed to have suffered hearing loss at such a young age. He felt stigmatised to the extent that he was reluctant to wear a hearing aid or to tell others about his difficulties.

52. Where there is a lot of background noise (for example in a pub or a restaurant or a shop), he struggles to hear people talk. Sometimes he is completely unaware that someone has spoken to him. He has to try and face people and partially lip read. He struggles to hear the television: he turns the volume up loud and uses subtitles. He struggles to hear his partner and children when they are in a different room in the house (or, sometimes, even when they are in the same room). In the car, he finds it difficult to hear his daughters if they are talking to him from the back seat. He also finds it difficult to hear on the telephone. The tinnitus makes it difficult to get to sleep.

53. Mr Barry did not wear hearing aids during the trial. He gave evidence for more than a day. It was clear that he could hear the questions that were asked. He explains that he was having to concentrate hard, and look carefully at the speaker, that he was a relatively short distance away from Mr Ward and there was no background noise. He emphasises that the conditions of a courtroom do not reflect daily life, and that his ability to engage in cross-examination does not reflect his ability to engage in conversation in places where there is background noise, or more than one person speaking at the same time, or where he is not directly facing the person speaking. None of the experts throw any doubt on Mr Barry's account as to his hearing loss, or suggest that there is any inconsistency between his account and his ability to participate in the court hearing.

54. Mr Barry's hearing loss has meant that he is not able to continue to serve in the military. It is common ground that he could likewise not serve as a police officer or in the fire and rescue service.

The admission of liability

55. Mr Barry's particulars of claim allege 50 separate particulars of negligence or breach of statutory duty. They include that he was exposed to excessive noise; he was not provided with adequate hearing protection; the wearing of hearing protection was not properly enforced; the provided hearing protection was not compatible with the helmet and personal role radio; insufficient training and instruction was given in the use of hearing protection; no sufficient risk assessment had been carried out.

56. In its defence, the MoD responds that the exposure of service personnel to noise is reduced so far as is reasonably practicable. However, in a counter schedule of loss dated December 2022, the MoD admits primary liability. At the outset of the trial Mr Ward

helpfully confirmed that each individual allegation of negligence and breach of statutory duty is admitted. At the start of his cross-examination of Mr Barry, Mr Ward tendered an apology to him on behalf of the MoD for the losses that had been caused to him by the MoD's negligence and breach of statutory duties.

The parties' submissions

Contributory negligence

57. Mr Ward says that this is not a case of momentary inadvertence that is insufficient to attract a finding of contributory negligence. Rather, Mr Barry adopted a practice of not wearing ear protection in his left ear when using the radio. This is contrary to the instruction which (on the evidence of Major Ainsley) he was given. By contrast, his friend Sergeant Walker used hearing protection in conjunction with the radio. The evidence of the engineering experts suggests that if Mr Barry had worn hearing protection in his left ear then he would probably not have sustained permanent damage. The damages awarded to Mr Barry should be reduced by up to 30% on account of contributory negligence.

58. Mr Steinberg points out that the burden is on the MoD to establish contributory negligence. He submits that the evidence does not show that Mr Barry failed to exercise reasonable care for his own safety. Mr Barry has explained why he did not always wear earplugs. He was trying to cope with equipment that the MoD now admits was deficient. It was the MoD that was responsible for the deficient equipment, and the MoD did not adduce any evidence of the specific training or information that Mr Barry received. Nor does the evidence establish "the specific causative potency" of any purported negligence on the part of Mr Barry. Any culpability on his part is negligible compared with the systemic, widespread and prolonged breach of duty by the MoD.

Diagnosis and quantification of military noise induced hearing loss

59. Professor Lutman and Professor Moore provide competing models for diagnosing and quantifying military noise induced hearing loss.

60. Mr Ward submits that it is not necessary to make a finding as to which model should be preferred, because it is agreed (whichever model is used) that Mr Barry has suffered hearing loss as a result of exposure to noise during his military service.

61. Mr Steinberg points out that the experts differ in the quantification of Mr Barry's hearing loss, and says that it is therefore necessary to make a finding. He submits that Professor Moore's methodology should be preferred. That is because Professor Lutman's method is designed for cases of industrial exposure to noise, typically in a factory setting. The characteristics of military noise are different. Professor Moore's method has been designed specifically to diagnose and quantify hearing loss in the military context. Satisfaction of Professor Moore's test gives a high degree of confidence that the individual has sustained military noise induced hearing loss. Conversely, Professor Lutman's method misses too many cases which ought to attract positive diagnoses. Further, Professor Moore's quantification method uses more up to date population statistics which are likely to be more reliable than those used by Professor Lutman.

Synaptopathy, neuropathy and likely pattern of future hearing loss

62. It is common ground that Mr Barry's hearing will deteriorate with age. Relying on Professor Moore's evidence, Mr Steinberg submits that Mr Barry's hearing is likely to deteriorate in the future further than that which is to be expected due to age alone. Mr Ward submits that in the absence of an accepted scientific consensus that such effects occur, Mr Barry is unable, on the balance of probabilities, to prove his case on future deterioration.

General damages

63. Mr Steinberg argues for awards of general damages for pain, suffering and loss of amenity, and loss of congenial employment in the sums of £27,500 and £8,000 respectively. Mr Ward submits for awards of £20,000 and £5,000. The parties agree that the award for pain, suffering and loss of amenity should be reduced by £6,000 to take account of a payment made under the Armed Forces Compensation Scheme for noise induced hearing loss.

Loss of earnings

64. The employment consultants have modelled a number of different career possibilities. Mr Barry's claim is based on a blend of two possibilities. The first is that he would have remained in the Marines for 14 years before then pursuing lucrative civilian employment opportunities. The second is that he would have remained in the Marines until the age of 60, achieving the rank of Warrant Officer. The MoD contend that Mr Barry's earnings since his medical discharge are broadly comparable with the earnings he might have expected to receive if he had not sustained any hearing loss. Mr Ward submits that there should be no loss of earnings award beyond a sum in respect of handicap on the labour market.

Hearing aids

65. Mr Barry seeks £44,201 in respect of the future cost of hearing aids. This is supported by the report of Mr Robertshaw. The MoD allows a sum of £25,000 on the grounds that cheaper hearing aids are available.

Discussion

Contributory negligence

66. Where a claimant's injury results in part from his own fault, the damages recoverable must be reduced to the extent that is just and equitable having regard to his share in the responsibility for the losses: section 1(1) Law Reform (Contributory Negligence) Act 1945. The issues are:

    (1) Whether Mr Barry was at fault, by failing to take "such care as a reasonable man would take for his own safety": *Lewis v Denye* [1939] 1 KB 540 *per* Du Parcq LJ at 554.

    (2) If so, whether his losses result in part from that fault.

(3) If so, the amount of reduction that is just and equitable having regard to Mr Barry's share in the responsibility for his injury, balancing his relative blameworthiness compared to the MoD, and the causative potency of their respective conduct: *Stapley v Gypsum Mines Ltd* [1953] AC 663 *per* Lord Reid at 682.

67. The MoD's case is that Mr Barry was at fault for failing to wear the hearing protection that was provided to him; failing to inform the MoD that there was no hearing protection available (if that is his case); failing to comply with the training and instruction he received regarding hearing protection; and failing to take any, or any sufficient, care for his own safety.

68. The evidence suggests that Mr Barry did generally wear hearing protection when undertaking planned exercises involving firing, including during exercise black alligator. There were three exceptions: surprise attacks, the earplugs falling out, and when using the personal role radio.

69. Surprise attacks: Mr Barry did not wear hearing protection when he slept, and it is not suggested that he should have done so. There were occasions when Marines on exercise would be subject to a surprise attack during the night and when asleep, to which they would be expected to respond by returning fire. It is not suggested that he should have first found his ear-defenders or earplugs and put them in place. He did not do so. Nor did Mr Outten.

70. Earplugs falling out: The MoD has not established that it was Mr Barry's fault that the earplugs fell out. No evidence was adduced as to precisely how (if at all) he had been instructed to insert them, or that he had failed to insert them in the required manner. There was no evidence that if earplugs are correctly inserted they stay in place during vigorous physical movements. Mr Barry was far from alone in finding that his earplugs fell out. Mr Outten and Sergeant Walker both said that their earplugs would fall out too. Major Garman, Major Ainsley and Major Richmond all recognised that earplugs often fell out. The MoD disclosed email correspondence from July 2008 which recognises that earplugs "do fall out and do not provide situational awareness." The same correspondence refers to the fact that recruits tended to remove their earplugs so that they could hear the instructor.

71. All witnesses who address the issue recognise that it might not be possible to replace earplugs as soon as they fall out, but that there comes a time (during a lull in the fighting, or during a re-org) when this is practicable. If Mr Barry did not always replace his earplugs at the very first available opportunity then this is hardly surprising and does not amount, in the circumstances, to a failure to take reasonable care for his own safety. There is no evidence that he was given specific training about the need to replace hearing protection immediately, or as soon as was practicable. Nor is there any evidence that he was ever pulled up for not wearing, or replacing, hearing protection. The evidence suggests a degree of discretion, balancing hearing protection against situational awareness, was permitted. The exercises on which Mr Barry was engaged during black alligator were highly complex, challenging and potentially dangerous, involving intense simulated warfare and high cognitive demands. It is understandable that replacement of hearing protection in the midst of a firefight (simulated, but with a high degree of realism) was not always at the forefront of Mr Barry's mind.

72. Personal role radio: The evidence of Mr Barry, Mr Outten and Sergeant Walker convincingly establishes that it was often not possible to hear radio transmissions if an earplug was worn in the left ear. Major Ainsley said that he was able to operate the radio whilst wearing earplugs in both ears, but he conceded that not all radio sets were equally serviceable and recognised that with some radio sets it might not be possible to hear. That being the case it is, again, hardly surprising that Mr Barry (like Mr Outten) did not use hearing protection in his left ear when wearing the radio. If he had worn hearing protection then he would have been unable to do his job properly. The fact that Sergeant Walker did so does not avail the MoD – his evidence was that he wore the protection "half in half out", which was not in accordance with any training and is unlikely to have offered significant protection. In his written statement Major Ainsley said that he could confirm that Mr Barry was instructed to wear ear plugs with his personal role radio, under the headset. He did not (in his statement) explain how he could confirm this, and did not suggest that he had personally given Mr Barry this specific instruction. When asked in cross-examination, he explained that there was a general instruction to wear hearing protection at all times, and so it followed that it should be worn under the radio headset. That is rather different from a specific instruction to wear an earplug under the ear-piece of the headset. I do not accept that Mr Barry was given a specific instruction to wear an earplug in his left ear when using the radio. In the absence of a specific instruction, and in the light of the defective equipment, Mr Barry's decision to do without an earplug in his left ear was not unreasonable.

73. Not informing the MoD that there was no hearing protection available: This contention does not arise, because hearing protection was available, it was just that it was inadequate and incompatible with other equipment. Mr Barry is not at fault for failing to report that. The problems were well known by the MoD (as demonstrated by the evidence of the witnesses, and also the documentation from 2012) but, lamentably, it appears that nothing was done by the MoD to address the obvious and serious problem.

74. Failing to comply with training/instruction: There is no clear evidence as to the precise instructions and training given to Mr Barry during his basic training. It is likely that he was given a general instruction, during exercise black alligator, to wear hearing protection. The various range safety instructions that were in use refer to the importance of hearing protection and the evidence suggests that these instructions were read out. The instructions do not deal specifically with the question of using hearing protection in conjunction with a personal role radio, or the importance that should be attached to replacing earplugs if they fall out. Moreover, there is no clear evidence of the instruction to wear hearing protection being enforced. Mr Barry was never pulled up when he did not wear hearing protection, and there is no evidence that any other marine was either. Notwithstanding the general instruction, an element of individual discretion appears to have been tolerated because of the recognised need to maintain situational awareness. Mr Barry did seek to comply with the general instruction to use hearing protection. To the extent that his earplugs fell out, and to the extent that he only protected his right ear when using the radio, that was not his fault and did not amount to a failure to comply with the training or instructions he was given.

75. Failing to take sufficient care for his own safety: Mr Barry did take steps to protect himself. He did wear the hearing protection that was available when, and as best, he

could. He was reliant on the equipment provided by the MoD. The failure to ensure proper hearing protection is due to the fault of the MoD, not Mr Barry.

76. Accordingly, the MoD has not established that Mr Barry was at fault within the meaning of section 1 of the 1945 Act.

77. It is not therefore necessary to address the question of whether any fault on Mr Barry's part is a cause of his hearing loss, or what reduction should be made.

78. For completeness, Mr Barry's hearing loss is probably worse (although it is impossible to say how much worse) than it would otherwise have been because he did not wear hearing protection in his left ear when wearing the personal role radio. That is likely to be a partial explanation for the fact that his hearing loss is worse in his left ear than his right ear (although another likely contributory factor is that exposure to noise from the SA80 rifle is greater in the left ear, which points towards the muzzle, than the right ear, which points towards the butt).

79. Even if Mr Barry had been at fault for failing to wear hearing protection in his left ear whilst using the personal role radio, then any reduction under the 1945 Act would be small. For all the reasons I have already given, the balance of responsibility overwhelmingly falls on the MoD such that it is not just or equitable to make anything other than a small reduction in the compensation payable to Mr Barry.

Diagnosis and quantification of military noise induced hearing loss

80. An audiogram charts hearing acuity at different frequencies. A single audiogram can (by comparison with published population tables) show how an individual's hearing compares with what might be expected for someone of that age and sex. Differences in repeat audiograms conducted over a period of time can in principle (and subject to accounting for the equipment and methodology used to perform the audiogram) identify hearing loss over that period. An audiogram does not, in itself, identify the cause of any hearing loss.

81. In 2000, Professor Lutman, with colleagues, developed a method for assessing, by reference to an audiogram, whether a person has suffered noise induced hearing loss: Guidelines on the diagnosis of noise-induced hearing loss for medicolegal purposes, RRA Coles, ME Lutman and JT Buffin, (2000) Clin Otolaryngol 25 264-273 ("the CLB guidelines"). He also developed a method for quantifying the extent of noise induced hearing loss: Guidelines for quantification of noise-induced hearing loss in a medicolegal context, ME Lutman, RRA Coles, JT Buffin, (2016) Clin Otolaryngol 41 347-357 ("the LCB guidelines"). The methods are based on the observation that typical noise induced hearing loss results in a loss of hearing acuity at the 3kHz, 4kHz or 6kHz frequencies compared to 1kHz and 2kHz. Accordingly, the hearing threshold level at 1kHz and 2kHz is taken as a baseline. The first requirement of the CLB guidelines is met where the hearing threshold level at 3, 4 or 6kHz is at least 10dB greater than the hearing threshold level at 1kHz or 2kHz. The second requirement concerns the amount of noise to which the individual has been exposed. The third requirement involves an analysis of the audiogram to determine whether there is a notch or bulge at the 3, 4 or 6kHz frequencies when compared to the 1 or 2kHz and the 6 or 8kHz frequencies. In effect, the hearing threshold at 1 and 8kHz is treated as an anchor that is unaffected by noise exposure, and is used to compare the hearing thresholds at the intermediate

frequencies (which can be affected by noise exposure). The LCB guidelines use the same types of characteristic to quantify the extent of hearing loss that is attributable to noise exposure.

82. Professor Moore recognises that the CLB and LCB guidelines have utility in cases of long-term exposure to steady broadband noise, for example in a factory setting. He says, however, that there are features of certain types of military noise exposure (particularly, the noise produced by weapons, involving intense impulsive sounds rather than the more steady noise typically experienced in a factory) that do not fit well within the methodology that underpins the CLB/LCB guidelines. In particular, he says that exposure to sudden impulsive military noise can cause loss at higher frequency ranges than exposure to steady factory noise. Such military noise can, he says, cause a deterioration in hearing acuity at 8kHz, thereby invalidating the use of that frequency as an anchor point that is unaffected by noise exposure. He suggests that the focus (in the CLB/LCB guidelines) on hearing loss at 3, 4 or 6kHz when compared to that at 1 and 8kHz may mean that some cases of military noise induced hearing loss are missed.

83. Professor Moore has therefore developed a different and bespoke methodology for identifying cases of noise induced hearing loss in the military context: Diagnosis and quantification of military noise-induced hearing loss, Brian Moore, J Acoust Soc Am 148 (2), August 2020, 884-894. Professor Moore's method is based on his findings that military noise exposure tends to lead to the greatest hearing loss at 4, 6 and 8 khz, and the mean loss at 8kHz is at least that at 4kHz. Professor Moore does not therefore treat 8kHz as an anchor point which is unaffected by noise exposure. Rather, he treats hearing loss at the 8kHz frequency as a potential indicator (when taken in conjunction with other diagnostic criteria) of military noise-induced hearing loss.

84. Professor Moore's published papers suggest that his method of diagnosing military noise induced hearing loss gives true positive results in some cases where a false negative result would be given under the CLB guidelines. It therefore has a higher sensitivity score; it gives positive results in a higher proportion of true cases of military noise-induced hearing loss. That comes at a price. Professor Moore recognises that an important component of his criteria has only a moderate specificity score: it gives rise to false positive results in a significant proportion of cases. Professor Moore has sought to address this in a recent paper which modifies his method: Modification of a Method for Diagnosing Noise-Induced Hearing Loss Sustained during Military Service, Brian Moore, Larry Humes, Graham Cox, David Lowe and Hedwig Gockel, Trends in Hearing (2022) Volume 26: 1-9. That paper suggests that the modified method gives rise to markedly higher specificity scores without a significant reduction in sensitivity.

85. The respective methods of Professor Lutman and Professor Moore were extensively explored in cross-examination.

86. Mr Steinberg invites me to adopt that of Professor Moore. I decline to make a finding, either way, as to whether one methodology should be preferred over the other.

87. First, it is common ground that Mr Barry has suffered hearing loss as a result of noise exposure in the course of his military service. So far as diagnosis is concerned, there is no live issue between the parties. It is not therefore necessary to investigate different diagnostic criteria.

88. Second, Mr Barry satisfies both the CLB guidelines and Professor Moore's original criteria and Professor Moore's revised criteria. His case is not therefore apt for evaluating the respective merits of the different methodologies.

89. Third, there is a difference between Professor Lutman and Professor Moore as to the extent of Mr Barry's noise hearing loss. That difference results from their differing methodologies. For this reason only it might be said that there is a need, in the circumstances of this particular case, to make a finding as to the methodology that is to be preferred. However, the difference in outcome on the different methodologies is not significant. The experts agree that the binaural noise induced component of Mr Barry's hearing loss is of the order of 20dB. Professor Lutman estimated an average noise induced hearing loss of approximately 16dB in the 1-2-4kHz range. Professor Moore's estimate was 17dB (and 22dB for the 1-2-3kHz range). Despite the logarithmic nature of the decibel as a unit of measurement, these differences are not significant. The experts explicitly agreed that "there is no meaningful difference in outcomes between the two methods in the present case."

90. Fourth, there is a larger difference between the outcomes of the respective methodologies when applied to the left ear alone. The average noise induced loss at the 1, 2 and 3khZ frequencies is 32.7dB or 25.3dB depending on whether Professor Moore's method or Professor Lutman's method is used. The corresponding figures at the 1, 2 and 4kHz frequencies are 29.3dB and 21.7dB. In each case the difference is around 7.5dB. However, neither expert suggests that it is appropriate to consider the respective outcomes by reference to each individual ear in isolation. In their joint report they focus on the binaural loss and, on that measurement, there is no significant difference.

91. Fifth, the court's role is to resolve the issues between the parties in a particular case. The intense factual focus on the circumstances of a particular case means that there are dangers in making findings as to the appropriate scientific methodology that should be applied more generally. To take the present case, Mr Barry was a relatively young man at the time his hearing deteriorated. None of the experts suggest that age-related hearing loss is a significant factor in his hearing loss. Mr Barry was able to give a clear account of his noise exposure in both the military and other contexts (motorbikes, discos), which was not subject to significant challenge. There is no suggestion that, apart from military noise exposure, he has been exposed to levels of noise that could explain his hearing loss. Other cases will be less clear cut.

92. Sixth, there is an important difference between the exercise on which Professor Lutman and Professor Moore are engaged in terms of deriving diagnostic criteria, and the court's task of making findings as to causation and damage. Diagnostic criteria are a tool that can be used by expert witnesses to provide an expert opinion to the court. It is for expert witnesses in each individual case to select and deploy diagnostic criteria as they consider appropriate, alongside a holistic view of the clinical picture. The criteria are not intended to operate algorithmically without expert interpretation. The court's role is to establish, on all the evidence (including but not limited to the expert evidence) whether the claimant has established his case on causation and loss on the balance of probabilities.

93. Seventh, it is clear that there were some significant misunderstandings as between the expert witnesses, even after their joint statement. So, for example, Professor Lutman

had understood that Professor Moore's methodology had been designed so as to achieve as many positive results as possible in a sample of 58 cases where the individuals were bringing claims for military noise induced hearing loss. That understanding was misplaced – the methodology had been derived from different and larger samples, and the 58 cases had been used as a way of testing its efficacy. The scope for such misunderstandings is considerable: Professor Moore's methodology is new, has been significantly and recently modified, and has not yet (so far as I was shown) been the subject of further scrutiny in the academic literature (beyond the peer review process that was applied before his papers were published).

94. Eighth, the fundamental difference between the methodologies is based on Professor Moore's finding that military noise exposure has an impact in higher frequency ranges than other types of noise exposure. He may be right about that, but it is a contested issue. Professor Lutman says that Professor Moore's finding was based on his observations of a selection of particular audiograms of military veterans, but that a different finding might have been made if a different (or larger) sample had been used.

95. Nineth, there were a number of issues between Professor Lutman and Professor Moore as to the design of the various studies which underpinned a number of the published papers, including their own papers. Both experts were clearly seeking to assist the court with their best interpretation of the literature and with evidence that was not dependent in any way on the interests of those who instructed them. Both experts made appropriate concessions. I have no doubt as to their scientific integrity. Mr Steinberg submits that the inherent likelihood is that Professor Moore's scientific papers were published in good faith, that they represent his true views, that they bring all of his expertise and experience to bear on the subject matter at hand and that they are motivated by a sincere desire to contribute to the canon of scientific scholarship. I agree. The same can be said of Professor Lutman's work. It is helpful to have the two proponents of the competing methods give evidence – they are more familiar with the methodologies than anyone else; they are the original architects. This does, though, mean that in one sense they are not independent of the underlying issue (ie which of their two methodologies is to be preferred). If, in a future case, that does have to be resolved then it may be helpful to have the benefit of an opinion of a single, jointly instructed, epidemiologist on the issues that arose when comparing the methodologies, including the design of the different studies, the appropriate comparator cohort to test the null hypothesis, the appropriate population statistics to be used, and the calculation of the sensitivity and specificity scores and the positive predictive values for the different methods.

96. Tenth, many more claims of military noise induced hearing loss are currently before the courts. They are being case managed together. It is proposed that lead claims will be selected as vehicles for the resolution of generic issues. The present case is not part of that group, and it has not been selected as a lead claim for the resolution of more generic issues. The MoD say that Mr Barry's claim is not a suitable lead case. It is appropriate, in this context, to exercise caution and restraint before making findings that are not truly necessary for the resolution of the issues in this particular case.

97. I appreciate that the parties have applied significant resource in litigating this issue. Nevertheless, for the reasons given above, it is not right to make a finding.

Synaptopathy

98. It emerged in the course of the hearing that the real issue between the experts is not simply whether synaptopathy can occur in humans as a result of noise exposure: it is common ground that it can. The issue is whether there are cases of synaptopathy where no anomaly is detectable on the audiogram; in other words whether there are cases of hidden or primary synaptopathy. There are many people who have apparently normal audiograms but who struggle to hear a conversation in a noisy environment. Synaptopathy is posited as a possible explanation for some of these cases. The issue is controversial and is the subject of ongoing scientific study.

99. In the present case, Mr Barry does not have a normal audiogram. His audiogram shows demonstrable hearing loss across a range of frequencies, including those associated with the ability to understand speech. Mr Barry gives an account of having difficulties in detecting speech, particularly in a noisy environment. Professor Lutman accepts that where an audiogram shows measurable hearing loss, a degree of secondary synaptopathy is to be expected. Professor Moore also considers that it is more likely than not that Mr Barry has synaptopathy and that this contributes to his difficulty in deciphering speech in a noisy environment. Accordingly, on the facts of this case, there is no significant issue between the experts so far as synaptopathy is concerned.

100. It is therefore not necessary to address the controversial topic of whether primary synaptopathy can occur where there is no significant anomaly on the audiogram. It is not appropriate to do so, for similar reasons to those that apply to the debate as to diagnostic methodology.

Likely pattern of future hearing loss

101. Ordinarily, the burden is on the claimant to establish his case to the civil standard of proof. Here, the MoD has admitted liability. The only remaining issue (aside from contributory negligence) is the quantification of damage. Neither party suggests a periodic payment order is appropriate. Nor does either party suggest it is appropriate to consider a provisional award under section 32A of the Senior Courts Act 1981, contingent on the risk of future deterioration. It is therefore necessary to assess the single lump sum to compensate Mr Barry for his injury. In assessing that lump sum it is not necessary for Mr Barry to prove precisely how his hearing loss will develop in the future. Rather, the award that is made must take account of the various different potential contingencies. It is common ground that Mr Barry's condition will deteriorate with age (presbycusis). The precise pattern that presbycusis will take in Mr Barry's case is unknown, but predictions can be made by reference to population figures. Presbycusis is not a result of noise exposure but it will have a more significant impact at an earlier stage than would have been the case if Mr Barry had not already suffered noise induced hearing loss. That must be taken into account when assessing the value of the claim. The evidence of Mr Robertshaw is that advances in hearing aid technology tend to keep pace with presbycusis. It follows that if Mr Barry is likely to use hearing aids (as I find that he is) and if he is compensated for the cost of periodical replacements of hearing aids with the latest models, the impact of presbycusis on the value of the claim may be less than would otherwise be the case.

102. Professor Moore's evidence is that quite apart from presbycusis, the characteristics of military noise exposure are such that it may cause a continued deterioration in hearing

acuity even after the exposure to noise ceases. He addresses the issue in a paper published in the International Journal of Environmental Research and Public Health (2021) 18 2436: "The effect of exposure to noise during military service on the subsequent progression of hearing loss." In that paper he re-analyses earlier research that focusses on the effects of noise exposure during military service. He explains how these papers provide some support for the proposition that where military noise exposure has caused loss of hearing of up to around 50dB, subsequent (post-exposure) hearing loss at those frequencies can be accelerated. He acknowledges that each of the previous studies had limitations and accepts that further longitudinal studies are needed with a large sample size to provide a basis for secure epidemiological conclusions.

103. Professor Lutman does not positively suggest that military noise exposure cannot affect the subsequent (post-exposure) hearing deterioration. His evidence was that such a link had not yet been established.

104. Mr Ward submits that in the absence of a longitudinal study a link between military noise exposure and post-exposure deterioration has not been scientifically established and therefore the risk of such deterioration cannot be taken into account. I disagree. The court is entitled to take account of expert evidence (based on experience and observation and the scientific literature) as to how an individual claimant's condition might progress in the future, even if epidemiological research is yet to establish, at a population level, the precise relative risk of post-exposure hearing deterioration.

105. Thus, the conclusions that can be drawn are that it is inevitable that Mr Barry's hearing will deteriorate further, at least as a result of ageing, and possibly also due to the underlying noise exposure. Professor Lutman agrees that (irrespective of the debate as to underlying mechanisms) Mr Barry's hearing loss will spread to adjacent frequencies and that his problems will become "profound" as he loses hearing at lower frequencies. It is not possible to make more definitive findings than that, and it is not necessary to do so. The likelihood of deterioration is a factor to be taken into account when assessing general damages for pain, suffering and loss of amenity. It is also relevant to Mr Barry's future career prospects, and the extent to which the multiplier for future residual earning capacity should be adjusted.

Mr Barry's length of service in the Marines if he had not been medically discharged

106. Two principal variables determine the career that Mr Barry would have enjoyed in the Marines if he had not been discharged. The first is the length of time that he would have remained in the Marines. The second is the speed and extent to which he would have been promoted. The two variables are not independent. The extent of promotion is largely dependent on length of service. Conversely, length of service may be influenced by promotion (a Marine who does not achieve their promotion ambitions may be more likely to leave).

107. The principal variable is length of service. Allowing for the extension, Mr Barry enlisted for 20 years. At the time he enlisted he was relatively mature, and he had some awareness of service life from friends and relatives. He went to considerable lengths to secure enlistment and to pass the initial training. At the time of his discharge he had been in the Marines for 3½ years. Aside from the statement in the discharge papers (to which I attach no weight) there is no evidence that he at any stage intimated that he was

disillusioned with military life or that he wished to leave before he had completed 20 years.

108. At the time he enlisted, Mr Barry was in a relationship with Ms Atkinson. They remain together. Their twin daughters were born in 2017. Mr Ward submits that the birth of the twins will have made a stark difference to the family's priorities, and it is likely that Mr Barry would have left the Marines early so that he could spend more time supporting Ms Atkinson and his children. He points to the Armed Forces Continuous Attitudes Survey which suggests that one of the key factors that influences personnel to leave the military is the impact on family and personal life. He also points to statistics provided by the MoD in response to a request made under the Freedom of Information Act 2000. The statistics are based on data from 2011-2018. They indicate that only 10% of new entrants remain in the Marines after 20 years.

109. Mr Barry and Ms Atkinson each gave convincing evidence that he had entered the Marines with his eyes open as to the impact on family life. They were both accustomed to spending lengthy periods of time apart. They valued the long periods of leave where they could spend uninterrupted time together, and found that this more than compensated for the time they spent apart. The evidence that was put before me in relation to the attitudes survey is not sufficient to disturb the evidence of Mr Barry and Ms Atkinson, taken together with the fact that their relationship had endured for 3 years before he joined the Marines, and for the entirety of his service. I was not provided with the attitudes survey itself (only commentary from the employment experts as to the themes that it exposed). I was given no information as to the numbers of service personnel that leave because of the impact on family life (or, conversely, the proportion that stay in the military after starting a family).

110. The general statistics on length of service also need to be treated with some care. Of those who do not complete 20 years of service, a disproportionate number leave in the first 4 years: of those who start, only 50% are still in service after 4 years. Conversely, after the 10 year point the exit rate is only around 2% a year. The figures for those leaving include those who remain in the military but who transfer to a different service. They also include those who secure a commission. No raw figures are given, so it is impossible to know what proportion actually leave the military altogether.

111. For the 20 years of his enlisted service it was Mr Barry's choice as to whether he remained in the Marines. On the evidence, I consider that he would have done so. He enlisted when he was relatively mature and had already spent some years in civilian employment. He went to some lengths to enlist (removing a tattoo and waiting a year). After the set back of a fractured leg and 5 months rehabilitation, he regained his fitness and completed the arduous initial training. He found military service fulfilling and satisfying and, as was clear from his evidence, it was rightly a source of considerable pride. His intention was to remain in the Marines for as long as possible. In the light of his evidence, and that of Ms Atkinson, I am satisfied that he would not have left following the birth of the twins. There is no other tangible factor that is likely to have attracted Mr Barry to civilian life in the early years of his service. There is nothing in his annual reports to suggest that there was any barrier to promotion. Nor was there anything to suggest disillusionment or anything else that would have tended to push him away from the military.

112. Mr Ward submits that, in the light of the negative comments in the 2014-15 appraisal (and the underlying character traits that are revealed by those comments), Mr Barry is likely to have fallen behind his peers in terms of promotion. That, in turn is likely to have caused him to become disillusioned and to have terminated his service either at about the time of the medical discharge or, alternatively, at around the 9 year point.

113. For the reasons given below I do not consider that the negative comments in the 2014-15 appraisal will have had a significant adverse impact on Mr Barry's promotion prospects. It follows that I do not accept the argument that they (or any underlying character trait that they identify) are likely to have foreshortened his service.

114. Mr Barry denies that he would have left the Marines following the birth of his twins, or that he would have become disillusioned with military life. He does contend, as one of his alternative career projections, that he would have left after around 14 years to pursue lucrative civilian employment as an off-shore medic, possibly securing an arrangement outside the jurisdiction which would have enabled him to earn a salary tax free. That would have been in his narrow financial interest. It would enable him to maximise his earnings.

115. Having concluded that Mr Barry was committed to the military and would have stayed in post in the early years of his service, I do not consider that there is a sufficient evidential basis to award damages on the basis that he would then have left as soon as it became financially advantageous to do so. There is no evidence that Mr Barry ever articulated plans to do this (for example to Ms Atkinson). He gave convincing evidence about the pride and satisfaction he enjoyed as a serving Marine. He would have been able to support his family on his military income and there were generous additional allowances and entitlements which would be lost if he left the Marines. The pension entitlements would also be an incentive to remain. Mr White's evidence is that he would not have been able to match his service salary in civilian employment until he had completed at least one operational tour as a Sergeant. On the findings I make below, he would not have reached the rank of Sergeant at the 14 year point.

116. He would, on the career findings I make below, have achieved the rank of Corporal and would be on course to secure promotion to Sergeant. There is some evidence that he harboured ambitions to achieve that rank (he told Mr Cameron that he thought he had the potential to progress to Sergeant), and that would militate against leaving for civilian employment. He would also, on the findings I make below, have secured a position as a medic, and may have achieved an attachment to the Special Boat Service. Again, these factors are likely to have militated against him leaving within a small number of years. Further, he would have continued to gain experience in the military which would have a future commercial value in civilian employment. His evidence is that he would have wished to work as an off-shore medic for 3-5 years. He recognises that would not have been a long term proposition and says that he would not have wished to continue doing that in his late 40s and 50s. If he had continued to serve in the miliary to the end of his 20 year engagement then that would still leave him time to work as an off-shore medic for 5 years before reaching his 50s.

117. Once a Marine completes their engagement, it is no longer solely their choice whether they continue in service. Continued service after the 20 year point is dependent on selection to serve to "engagement stage 3". Such selection is made only on the basis of need, with specific numbers being identified for each specialisation and rank. Only a

relatively small number of senior non-commissioned officers continue to serve in the Royal Marines over the age of 50 (Mr White's evidence is that as at January 2019 there were only 95). The statistics indicate (subject to the caveats that I have identified) that less than 10% of new recruits serve for more than 20 years and less than 5% serve for more than 25 years. For those who reach the 4 year point, the proportions who serve for at least 20/25 years are 20% and 8% respectively. Even if Mr Barry had the option of continued service it is more likely that he would have moved to civilian employment at this point. It would, in effect, be his last chance to pursue work as an off-shore medic and to complete 3-5 years' work in that role by the time he reached his late 40s or 50s.

118. The counterfactual can never be known for certain, but in the light of all of the evidence, it is likely that Mr Barry would have remained in the Marines for his full 20 years of service, but not beyond. The different alternative possibilities tend to balance each other out. On the one hand there is a theoretical prospect (although it is very low) that Mr Barry would have chosen to leave at about the time he was medically discharged (such that his loss of earnings would be reduced or, the MoD would argue, extinguished). On the other hand, there is the prospect that he would have left at the time that he could secure lucrative civilian earnings, giving rise to a much larger loss of earnings claim. There is also the prospect (but again I consider it is very low) that he would have continued to Engagement Stage 3 with further promotion to Colour Sergeant and, possibly, Warrant Officer. I do not consider that there is any tangible basis on which to assign definitive odds to each of the various possibilities, and assess the losses accordingly. Rather, the central likely scenario that Mr Barry would have served for his full engagement (but not beyond) is a fair basis on which to determine the claim. That career model provides an appropriate baseline. It is one of a number of alternatives that give similar results. To the extent that some alternatives would result in a higher figure for loss of earnings, it is equally the case that others would result in a commensurably lower figure. Those alternatives which would make a really significant difference (for example that Mr Barry would have left the Marines in any event at about the time he was medically discharged, or that he would leave after 14 years to pursue a lucrative career with tax-free earnings) can be safely discounted. It is not therefore necessary or appropriate to model a number of different possibilities and apply percentage chances to each: *Herring v Ministry of Defence* [2003] EWCA 528 *per* Potter LJ at [26].

Mr Barry's likely career profile if he had not been medically discharged

119. The MoD relied strongly on some of the negative comments in Mr Barry's annual appraisals (and particularly his appraisal for the 2014-15 year) to suggest that he would not have been as successful as his peers in achieving promotion. Conversely, Mr White suggested that those comments should be seen as a positive indication of Mr Barry's aptitude to serve as a medic, because they showed a degree of independence, moral fibre, and regard for the well-being of other Marines. In particular, the comments suggesting a degree of insubordination were prompted by an occasion when Mr Barry had challenged the decision of a Lance Corporal that gave rise to potential health risks (instructing Marines to pack up tents earlier than necessary, exposing them to temperatures as low as -40^{o}C).

120. There is a considerable risk of reading too much, either way, into the comments in an individual appraisal. By the time that Mr Barry came to be considered for promotion (probably not before 2021) it is unlikely that his 2014-15 report would have been taken into account. His more recent reports would carry far more weight. In assessing Mr

Barry's prospects it is more important to consider the general theme of the reports overall, and their direction of travel, rather than individual comments in a single report. Viewed in that way, the reports indicate that, generally, Mr Barry was achieving the standard required in all respects and was regarded as an average Marine.

121. More important than the comments themselves is the extent to which they illuminate Mr Barry's underlying character. Mr Ward suggests that Mr Barry thought he was always right and would not sufficiently respect commands given by his chain of command. He points to the fact that in civilian employment he found it difficult to get on with his customers and colleagues, and preferred running his own business, suggesting he was not a team player. Again, I consider this reads too much into individual snippets of evidence relating to a small number of incidents over a period of many years. I accept that Mr Barry is confident in his own judgement, to the point that tensions sometimes emerge when his views conflict with others. But he is also someone who can take advice, respond to feed-back and take a long term view (demonstrated by the steps he took to join the marines, to regain his fitness to continue his basic training, and to respond to the negative comments in his annual appraisal). He would not have passed initial selection and basic training if he were unable to perform as a member of a team and to follow orders from his chain of command. His report for 2015-16 does not contain any hint of the concerns that were expressed in 2014-15. Even in 2014-15, the overall rating was still a B- (the grading system goes down to D) notwithstanding the negative comments, and he was considered to be developing towards promotion two ranks up. It is not surprising that he found it difficult to adapt to civilian employment, and it is noteworthy that, until very recently, he has remained in continuous employment throughout the period since his medical discharge.

122. Considering all the evidence in the round, Mr Barry's promotion prospects were aligned to those of an average Marine. That accords with the evidence of both employment experts, and also Major Jesson. The prospects of achieving promotion are largely dependent on length of service and specialisation. The expected length of service on promotion to Corporal, Sergeant, Colour Sergeant and Warrant Officer 1 is 10.9, 15.5, 19.2 and 22.6 years respectively. These figures are set out in the joint statement of Mr White and Mr Cameron. They derive from a response to a Freedom of Information Act request made in March 2022. That post-dates the experts' original reports, which were based on earlier figures (which tended to indicate slightly quicker rates of promotion).

123. Mr Barry had intimated a wish to become a medical assistant. That would have meant undergoing a 1-year course. There is a waiting list to get onto the course. Mr Barry thought that he had been entered onto the waiting list. There is now no independent evidence to verify that, because the waiting lists are not kept. Equally, there is no evidence to contradict the impression that Mr Barry had been given that he had been put onto the waiting list. The evidence shows that Mr Barry wanted to become a medical assistant, and that his reporting officers were supportive. No reason was given as to why he might not have been put on the waiting list. I therefore proceed that Mr Barry was put onto the waiting list in, or shortly after, September 2015 when he was recommended for the medical assistants course (and 5 months after he first intimated that he wished to train as a medic).

124. There was conflicting evidence as to the length of the waiting list. Major Jesson's evidence was that as at 5 October 2021 there were 43 people on the waiting list. Each year there are 2 or 3 courses, and each course only has space for 2 or 3 Marines. On

that basis, Major Jesson suggested that the waiting list might be 8-9 years. As against that, a MoD response to a Freedom of Information request indicates that the average length of service of a Marine when starting the course is 4 years and 9 months (meaning that the average waiting time must be substantially less than that, because a Marine would not go onto the waiting list until some point after basic training). Mr Barry had volunteered to go onto a scheme which would have accelerated his position in the waiting list (so he would be above all recruits who had not volunteered to go onto the scheme). The waiting list from October 2021 (which was disclosed) indicates that those at the top of the list had been placed on the waiting list in 2018 and 2019 and were due to start the course in 2021 and 2022, with waiting times of between 2 years and 1 month, and 3 years and 8 months (those were all Naval personnel rather than Marines, but it appears that Marines were also approaching the top of the list after a period of around 2-3 years).

125. Major Jesson's forecast of 8-9 years is based on sound internal logic, but (as he accepted) it does not reflect the actual experience of those who reached the top of the only waiting list that was disclosed in evidence. Major Jesson accepted that his estimate might be taken as a worst case scenario. The disclosed list is likely to be a more reliable indicator of practical reality. On that basis, it is likely that Mr Barry would have embarked on the course in around September 2018 (Mr White suggested January 2017; Mr Cameron September 2020). He would have completed the course a year later. He would not then have been promoted until he had completed at least two years as a medical assistant (so the earliest possible date of promotion would have been around September 2021).

126. Mr Barry's ambition was to secure an attachment as a medic with the Special Boat Service. Major Jesson considered that the prospects of Mr Barry securing selection into the Special Boat Service were extremely slim, but he accepted that Mr Barry had "pretty good prospects" of securing attachment to the Special Boat Service as a medic. Mr White's evidence was that as a Marine who had undergone the arduous initial training and subsequent exercises, Mr Barry would have been well placed to pass the two week course necessary to secure attachment as a medic to the Special Boat Service. He thought that his prospects of doing so were greater than 50:50. Mr Cameron disagreed, and considered that the chances were substantially less than 50%.

127. If Mr Barry had qualified as a medical assistant then I see no reason to reject the evidence of Major Jesson and Mr White as to the prospects of him then becoming attached to the Special Boat Service. They are each likely to have a more direct feel for the prospects than Mr Cameron who has not himself served in either the Royal Navy or the Royal Marines. Mr Cameron's evaluation may also understandably have been influenced by Major Jesson's assessment that the prospects of selection into the Special Boat Service were very slim (it was not clear, until he gave evidence, that Major Jesson was here dealing with the prospects of selection into the Special Boat Service rather than attachment as a medic to the Special Boat Service).

128. On the other hand, there are a series of contingencies in play, including that Mr Barry would have continued to serve in the Marines, that he had in fact been placed on the waiting list for the medics course, that the waiting time would have panned out as I have suggested, and that he would then have passed the course, and that he would then have passed the physically demanding black serpent course. In all the circumstances, it is reasonable to allow one half of the additional income that would accrue from

attachment to the Special Boat Service from September 2021 (that is, 2 years after completing the medical assistants course).

129. Both Mr Cameron and Mr White consider that Mr Barry would have first been promoted after about 9 years and 1 month service (so around March 2022). Mr White suggests Mr Barry would have been promoted to Corporal at that point. Mr Cameron suggests that Mr Barry would have first been promoted to Lance Corporal, and would then have achieved promotion to Corporal at 12 years' service (so around February 2025). The Lance Corporal rank is not used for the medical assistants branch, so Mr Barry's first promotion would have been to Corporal. To that extent, I accept Mr White's evidence. I do not, however, consider that his promotion was likely to have been as early as 9 years and 1 month service. On the most up to date figures, the average length of service on promotion to Corporal is 10 years and 9 months. Even if medical assistants would tend to be promoted more quickly, all agree that Mr Barry should be assessed as an "average" Marine. On that basis, Mr Barry will have been promoted to Corporal in around December 2023, achieving the rank of Sergeant after 15½ years of service in August 2028.

130. The same logic suggests Mr Barry would achieve the rank of Colour Sergeant in around April 2032. However, Mr Barry's engagement ran until February 2033. I have already concluded that Mr Barry was unlikely to be serve beyond that point. Mr Barry intimated to Mr Cameron that he considered that he had the ability to reach the rank of Sergeant (but I accept Mr Barry's evidence that this was not the necessary limit of his ambition). Mr Barry's focus at this point in his career is likely to have been on his future civilian employment. Although there is a small chance that Mr Barry would have been promoted to Colour Sergeant, that is balanced by the prospect that he would not have completed 20 years' service.

131. This overall career projection (serving for 20 years, and retiring in the rank of Sergeant) approximates to the third of five scenarios posited by Mr White, and the sixth of six scenarios posited by Mr Cameron. The rates of progression are slightly slower than suggested by the experts, but that is because their reports were based on earlier figures.

132. Mr Barry is likely to have served an operational tour, attracting an operational allowance. He would also have been entitled to longer separation allowance. If he had been attached to the Special Boat Service he would also have been entitled to a recruitment and retention payment.

133. Mr Barry would also have been entitled to a number of benefits, including in respect of rent in the sum of £7,200. Mr Ward accepts that he can, in principle, claim for these lost benefits for the period of time that he would have remained in the Marines. So far as the rent allowance is concerned, Mr Barry accepted that it is likely that he would have purchased a property, and that from that point onwards he would not have been entitled to that element. Mr Ward also submits that there should be some commutation of benefits payable in respect of commuting and car parking because Mr Barry's motoring expenses were paid for in full when he worked for the breakage / salvage business.

134. Taking all these factors into account, I award damages for this head of loss on the basis that a property would have been purchased by about now, so that the lost benefits are payable in full as part of the past loss of earnings claim and also (but with the omission

of the rent payments) the future loss of earnings claim. The assumption that a property would have been purchased as soon as now may be generous to the MoD, but, as against that, I make no reduction of the commuting and car parking benefits.

135. Mr Barry would have completed his 20 year engagement in February 2033 at the age of 44. Mr Barry's case is that he would have worked as an off-shore medic. Whether or not he had secured an attachment to the Special Boat Service, the evidence suggests that medics in the Royal Marines are sought after for a range of off-shore posts. In his witness statements he said that he would have wished to work in such a role for around 3-5 years.

136. In his oral evidence Mr Barry indicated that he might have relocated abroad so as to take advantage of the potential to enjoy a salary free of taxation. Ms Atkinson is a paralegal. She is not wedded to living in the United Kingdom. She is keen to explore the possibility of undertaking the New York Bar Exams. In any event, she said that she would have supported Mr Barry if he had wished to work outside the jurisdiction so as to maximise his potential earnings.

137. On the evidence, it is likely that Mr Barry would have worked as an off-shore medic (or some equivalent), but I do not think that he would have done so in a way that would have enabled him to avoid paying tax, or that he would have done so for longer than 5 years, or that he would have achieved the very high earnings commanded by combat medics. Mr Barry's twin daughters will, in 2033, be 16. They will be approaching their GCSE and A level examinations. He is committed to earning at least £40,000 a year which is the amount he considers necessary to support his family. He could amply exceed that level of earnings as an off-shore medic, without having to go to the lengths of changing his tax domicile with all the impact that would have on the family (because he would not be able to spend more than 90 days a year in the country).

138. I proceed on the basis that Mr Barry would have worked as an off-shore medic for 5 years, so at the top end of his 3-5 year estimate. This is partly because he would still have been under 50 at the end of 5 years, and also because of the significant additional earnings he is likely to have achieved after about 3 years – which would have been a strong incentive for him to remain for a further 2 years. On the evidence, there is not a real prospect that he would have been domiciled out of the jurisdiction so as to avoid taxation.

139. On the basis of the expert evidence, his gross annual earnings would have risen from £40,000 to £56,000. In the light of the evidence in his witness statement (the reference to 3-5 years) and the fact that he would be in a position to earn substantially more than the £40,000 per year that he considers necessary to maintain his family, and the fact that he would have a military pension, I do not consider that he would have continued to work as an off-shore medic in the long term. There is a limited evidential basis on which to assess his likely earnings at this point. Unsurprisingly, Mr Barry had given little thought to the issue. Leaving aside the claim to a tax free salary, Mr Barry's claim is, in part, based on a projection of earnings in the range £56,000 - £67,500 as an off-shore medic right up to the age of 68. For the reasons I have given, that is not realistic on the evidence. Conversely, Mr Cameron projects his likely earnings at this point as being in the range £32,000 - £45,800 (based on a number of different potential careers). This undervalues Mr Barry's likely pre-injury earning capacity as he reached retirement. Much of Mr Cameron's range is below Mr Barry's recent (post-injury)

actual earnings. It does not sufficiently account for the skills and experience that he would have gained after 20 years' service in the Marines and 5 years as an off-shore medic. I have adopted a figure of £50,000 for Mr Barry's likely gross annual earnings after working for 5 years as an off-shore medic. That is around 10% less than his peak earnings as an off-shore medic. It is around 20-25% more than his recent (post-injury) earnings. It lies between the ranges put forward by the respective experts. It fairly reflects Mr Barry's likely earning capacity at that point in his career.

Mr Barry's post-injury likely career

140. Until very recently, Mr Barry had been in work continuously since his discharge from the Marines. His most recent current gross annual earnings were around £41,600 (and they were as high as £45,800 before he stopped working night shifts). His evidence is that he will continue to earn at least £40,000 (which he regards as the minimum necessary to support his family) and will do whatever is necessary to achieve that level of earnings.

141. Mr White and Mr Cameron both point out that Mr Barry's most recent earnings are above the ASHE highest decile figure of £40,828 for a HGV driver, and that it is difficult to see how this level of earnings will be sustained in the long term. Nevertheless, Mr White considers that Mr Barry "has the tenacity and strong work ethic to ensure that he at least earns £40,000 per annum." Mr Cameron gives figures for potential further earnings which range from £22,964 (the starting salary for a road haulage or load planner) to £41,316 (the long-term potential earnings for a business manager).

142. Mr Barry's claim is based on an assumed residual gross annual earning capacity of £41,000. In the light of the evidence of Mr Barry himself, and Mr White, and taking account of the drive and determination that Mr Barry has shown both in military and civilian life, this is a fair assessment of Mr Barry's residual earning capacity. The recent developments do not change that – they are more appropriately taken into account when assessing the appropriate reduction factor for contingencies other than mortality.

Does Mr Barry have a disability?

143. This question is potentially relevant to the assessment of Mr Barry's likely future earnings. A person is classified as being disabled for these purposes if he has a disability which has lasted for more than a year, and the effects of the impairment limit the kind of paid work that he can do, and he satisfies the definition of disability in the Disability Discrimination Act 1995: Ogden Tables, eighth edition, at paragraph 68. It is common ground that Mr Barry's hearing loss has lasted for more than a year.

144. The MoD dispute that Mr Barry's hearing loss affects the kind of paid work that he can do now. I disagree. He cannot serve in the military (as his medical discharge demonstrates). It is common ground that he cannot be a police or fire officer. So, subject to satisfying the definition in the 1995 Act, he has a disability.

145. A person satisfies the definition of disability in the 1995 Act if he has a physical impairment which has a substantial and long-term adverse effect on his ability to carry out normal day-to-day activities: section 1(1) of the 1995 Act. An impairment has a long-term effect if it has lasted for more than a year: schedule 1, paragraph 2(1)(a) of

the 1995 Act. Normal day-to-day activities include hearing: schedule 1 paragraph 4(1)(f) of the 1995 Act. Statutory guidance address the matters to be taken into account in determining if a person has a disability: section 3 of the 1995 Act. A sensory impairment affecting hearing is a physical impairment for the purposes of the 1995 Act: paragraph A6 of the guidance. A substantial effect "is one that is greater than the effect which would be produced by the sort of physical… conditions experienced by many people which have only 'minor' or 'trivial' effects": paragraph B1 of the statutory guidance. It is important to focus on what the person cannot do, not on what they can do. Thus, account can be taken of day-to-day activities which the person avoids doing because of the impairment: paragraph B8 of the statutory guidance. Importantly for this case, the ameliorating effect of a hearing aid must be disregarded: schedule 1 paragraph 6 of the 1995 Act, and paragraph B13 of the statutory guidance.

146. When a person has hearing loss, account must be taken of the effects when the background noise is such that most people would be able to hear adequately: paragraph D25(ii) of the statutory guidance. The statutory guidance gives two examples where it would be reasonable to regard a person's hearing loss as having a substantial adverse effect:

(1) a person who has difficulty hearing someone talking at a sound level which is normal for everyday conversations, and in a moderately noisy environment,

(2) difficulty hearing and understanding another person speaking clearly over a voice telephone with good reception.

147. The MoD does not admit that Mr Barry is disabled, because it does not admit that his hearing loss has a substantial adverse effect. It relies on an occupational health report from 30 September 2015, which states that the claimant "falls within the acceptable level of hearing, in functional terms, for his role and, certainly as far as he is aware, he experienced no real difficulties in day-to-day activity." This snippet from a report more than 7 years ago is not a reliable indicator of whether Mr Barry's hearing impairment has a substantial adverse effect on his day-to-day activities. Mr Barry was medically discharged from the Royal Marines in February 2017, because his hearing loss was incompatible with continued service (in contradiction with the 2015 occupational health report). His evidence (which is supported by the findings of Mr Zeitoun and Professor Moore) is that his hearing loss does have a substantial adverse effect on his day-to-day activities. I accept that evidence.

148. The MoD further relies on the evidence that Mr Barry's hearing loss is ameliorated by the use of hearing aids. Such reliance is not permissible on the question of whether he has a disability, because that question must be assessed without reference to such aids (schedule 1 paragraph 6 of the 1995 Act).

The approach to assessment of future loss of earnings

149. In his written closing submissions Mr Ward presented a helpful forecast and comparison of Mr Barry's pre and post injury earning capacity. The point was to show that there is no significant difference, and that it should be concluded that Mr Barry's hearing loss does not impact on his earning capacity. If that is right, then it is appropriate to award damages for future loss of earnings on the basis of handicap on the labour market, as opposed to identifying the deficit between pre and post injury earning

capacity and applying a multiplier. In other words, damages for future loss of earnings should, on this approach, be based on an assessment of the additional risk that he may find himself looking for work more often, and that it may take him longer to find appropriate employment.

150. I have set out above my findings as to Mr Barry's likely pre and post injury earning capacity. On the basis of those findings there is a significant diminution on his future earning capacity as a result of his hearing loss. The conventional multiplier/multiplicand approach should be used. Otherwise, Mr Barry's future earning loss will not be fully compensated.

151. The multiplicands to be used follow from the findings set out above. It is unnecessary to set them out here. I provided the parties with the figures that I have used, in a spreadsheet format, when circulating this judgment in draft.

152. The appropriate multiplier for loss of earnings to pension age 68, before any adjustment for contingencies other than mortality, is 33.59.

153. The appropriate adjustment for contingencies other than mortality depends on whether or not the claimant is employed, whether or not he is disabled, and his level of educational attainment.

154. Mr Barry has, until very recently, been in continuous employment since his discharge from the Marines. It is appropriate to use the "employed" adjustment figures, even though he has recently lost his employment. It was not suggested otherwise. For the reasons given above, Mr Barry is disabled within the meaning of the Ogden tables.

155. The figures for educational attainment are based on a scale with 3 levels. The middle level, 2, is for someone who has GCSEs at grades A* to C (or equivalent qualifications, including a level 2 NVQ). Level 1 is for someone who has no GCSES or other equivalent qualifications, and level 3 is for someone who has a higher education qualification. Educational attainment is used in this context as a proxy for "human capital/skill level."

156. Mr Barry's schedule of loss is prepared on the basis that he is at level 1. This is not realistic. He secured 5 GCSEs at school, and thereafter a level 2 NVQ. He passed the rigorous training required to qualify as a Royal Marine. His training records show that he achieved numerous skills and competencies during his service in the Royal Marines. These include passing examinations in mathematics and English, and qualifications in first aid, navigation and the law of armed conflict. He has a "human capital/skill level" which is significantly in excess of level 1. I consider that he is well within the level 2 bracket, and in the upper part of that bracket. Subject to the further considerations below, it is therefore appropriate to apply the level 2 reduction figure.

157. The level 2 reduction figure for a 34½ year old man for loss of earnings to pension age 65 is 0.45 (if disabled) or 0.89 (if not disabled). The equivalent level 3 reduction figures are 0.56 and 0.89. The disabled figures are an average across all of those in employment who have a disability. In some cases, it is not realistic or appropriate to apply this average figure, and in such cases an adjustment may be made. An example is *Billett v Ministry of Defence* [2015] EWCA Civ 773; [2016] PIQR Q1. In that case the claimant suffered a non-freezing cold injury that affected his feet and which meant he was

disabled within the meaning of the Ogden tables. He worked as a lorry driver. The injury had less impact on his work as a lorry driver than on his leisure activities because he was able to keep warm in his cab. The Ogden table reduction figures were .92 for someone without a disability, reducing to .54 for a person with a disability. The judge adopted a reduction figure of .73 (half-way between the two figures). On appeal, the Court of Appeal considered that this was too generous to the claimant. He had secured employment within a week of leaving the army, he had strong qualifications for lorry driving and an excellent CV, and he was pursuing his chosen career as a lorry driver with virtually no hindrance from his disability. It was therefore necessary "to make a swingeing increase" to the reduction factor in order to apply "a sense of reality", requiring a reduction factor much closer to the figure for those without a disability: Jackson LJ at [96] and [102]. In the event, Jackson LJ considered that it was more appropriate to award general damages for loss of earning capacity, rather than to assess such damages using a multiplier and multiplicand. That was because the claimant's case was at the outer fringe of the spectrum covered by disability, his disability affected his chosen career much less than his activities outside work, and there was no rational basis for determining how the reduction factor should be adjusted: Jackson LJ at [98].

158. The factors that led the Court of Appeal in *Billet* not to apply the Ogden tables are not applicable here. Mr Barry's case is not at the outer fringe of the spectrum covered by disability – he falls squarely within one of the examples given in the guidance. He is not pursuing his chosen career. His disability affects the career choices that are open to him, and even with the ameliorating effects of a hearing aid it is likely to have an impact on his career. Further, his hearing will deteriorate further in the future. All of his career options since leaving the military have involved, to greater or lesser extent, the need to communicate by voice with others, and thus rely on his hearing.

159. On the other hand, using the mild/moderate/severe scale in the Ogden tables, Mr Barry's disability is currently in the range of mild to moderate (although it will deteriorate in the future). The impact of his disability is substantially ameliorated by the use of hearing aids. Until very recently, he had been in work continuously since his discharge from the military (a period of 6 years). He was earning in excess of his £41,000 target, and all of the evidence indicates that he has the drive and determination to recover from setbacks (such as his recent loss of employment). It is not therefore appropriate to apply an unadjusted factor of 0.45 which, in effect, assumes that he will spend more than half of his remaining working life out of work. It is necessary to adjust the factor: *Inglis v Ministry of Defence* [2019] EWHC 1153 at [206]-[218].

160. The adjustment to be applied can only be based on a broad evaluative judgement taking account all of the relevant circumstances of this individual case, and using as a guide the figures published in the tables (particularly the figures 0.45, 0.56 and 0.89). There is a natural temptation to adjust the factor within the range of 0.45 (the disabled figure) and 0.89 (the non-disabled figure) according to an assessment of the degree of Mr Barry's disability. There are dangers in such an approach. First, the disabled figure is not based on the earnings of all people who have a disability – it is based on the earnings of all people who have a disability and who are in employment. That means that the cohort is skewed in favour of those disabilities that are not at the most severe end of impairment and activity-limitation. The explanatory notes to the Ogden tables say (at paragraph 89) that "the norm" for severity is not severe and is at the mild end of the mild to moderate category. So, the fact that a claimant's impairment or activity-

limitation is mild or moderate does not, in itself, justify a departure from the published mean. Second, the explanatory notes to the Ogden tables say (at paragraph 84(ii)) that although the figures given represent a central estimate (there being a distribution of observations on either side), the observations cluster closely around the central estimate, so that most departures from the mean are modest. Third, where a departure is appropriate it will usually be modest (explanatory notes at paragraph 91). Fourth, an adjustment to the mid-point between the disabled and non-disabled figures is likely to be too great a departure (explanatory notes at paragraph 91). Professor Victoria Wass, a member of the working party and a co-author of the reduction factors, has published advice on making these types of adjustment: Ask the Expert – William Latimer-Sayer asks Victoria Wass some questions about the practical application of the Ogden Reduction Factors, Journal of Personal Injury Law (2013) 1 35-44, and Reduction Factor Adjustment in *Swift v Carpenter*, Journal of Personal Injury Law (2018) 4 279-283. Professor Wass reinforces the point that the distribution of disability within the population that underlies the figures is concentrated towards the mild end of the spectrum – within the disabled population, most people suffer from a relatively mild degree of impairment. She suggests that it may be appropriate to focus on the different "disabled" adjustment figures (according to levels of educational attainment) rather than on the spectrum between the disabled and non-disabled figures.

161. In the circumstances of the present case, the features which justify an adjustment to the reduction factor (principally, the effect of hearing aids and the fact that Mr Barry has been able to maintain employment throughout the period since his medical discharge, until very recently) are best reflected by using educational level 3 rather than education level 2. In other words, the ameliorating effect of a hearing-aid and Mr Barry's very high drive and determination can be modelled as being broadly equivalent to the advantage gained from a higher education qualification beyond A level. I therefore adopt a factor of 0.56 for contingencies other than mortality. The adjusted multiplier for future earnings is therefore 0.56 x 33.59 = 18.81.

General damages for pain, suffering and loss of amenity

162. The Judicial College's guidelines for the assessment of general damages in personal injury cases identify the factors that must be taken into account in claims for partial hearing loss. It is relevant that the injury occurred over a period of time, allowing an opportunity to adapt (as opposed to cases of immediate hearing loss). Mr Barry's hearing loss has no effect on his speech. He has, however, suffered hearing loss at a relatively young age and so will suffer the loss for a longer period compared to someone who sustains hearing loss in later life. This is a factor of particular relevance in cases of noise-induced hearing loss. It is also relevant that the hearing loss has resulted in the loss of Mr Barry's occupation in the armed services, and that his hearing loss will deteriorate.

163. The parties agree that Mr Barry's case falls within the bracket that covers cases of moderate tinnitus and noise induced hearing loss or moderate to severe tinnitus or noise induced hearing loss alone. Allowing for inflation since the guidelines were published, the bracket is £17,000 to £34,000. The claimant in *Inglis* suffered hearing loss as a result of service in the Royal Marines of 16dB and 17.7dB in his right and left ears respectively. He suffered hearing loss from around the age of 27. Peter Marquand (sitting as a deputy judge) made an award (adjusted for inflation) of £31,000 (at [227]).

164. Mr Steinberg argues for an award of £27,500, Mr Ward for an award of £20,000. Mr Steinberg's figure is a modest and conservative valuation. Mr Barry's hearing loss falls towards the upper end of the Judicial College guidelines (it is moderately severe, with tinnitus as well), its onset was at a young age, it caused him to lose his employment and it will deteriorate. His case is comparable to that of *Inglis*. I therefore adopt Mr Steinberg's figure of £27,500. The net award, allowing for the £6,000 payment, and agreed interest, is £22,567.

General damages for loss of congenial employment

165. There are obvious differences between service in the military and civilian employment. The former inculcates strong feelings of loyalty to unit, colleagues and country that are not readily replicated in other contexts. Mr White works for the Poppy Factory which supports veterans who struggle to find meaningful employment after military service. He explains how, in that context, he has come across many veterans whose lives spiralled into misery and destitution after leaving the military. He said that Mr Barry has strong reasons to be grateful to his step-father for offering him employment and helping him to manage the difficult transition from military to civilian life.

166. It is to the enormous credit of Mr Barry, and his step-father, that, until very recently, he has been in continuous employment since his military discharge and has thereby been able to continue to provide for and support his family. He gains little satisfaction from his employment. By contrast, he found military life exciting, fulfilling and rewarding.

167. Mr Steinberg argues for an award of £8,000, Mr Ward for an award of £5,000. Again, I consider Mr Steinberg's figure is modest and conservative. It is the same as the award made in *Inglis* (see at [229] – [231]), but the claimant in that case had served for 15 years, had applied for voluntary discharge and, anyway, had only 7 more years to serve (so had only lost, at most, 7 years of congenial employment). Mr Barry had only served for 4 years, had been compulsorily medically discharged, and had 16 years left to serve. I therefore again adopt Mr Steinberg's figure. Mr Ward did not dispute that interest falls to be added (and even if that is wrong, the resulting award remains a modest valuation), resulting in an award of £8,397.

Past financial loss

168. If Mr Barry had not been medically discharged on 13 February 2017, his earnings (inclusive of allowances and benefits, and allowing for half of the additional income that he would have earned if he had secured an attachment to the Special Boat Service) between then and now would have been £177,833. His actual earnings in that period are £144,993. His net loss of earnings is £32,840.

169. Mr Barry claims £150 for telephone, post and similar expenses, and £250 for travelling expenses. He has verified the claim with a statement of truth. His account that he has incurred this expenditure was not challenged. I award it in full.

170. Interest on past losses (at half the special account rate over the period since Mr Barry's discharge) accrues in the sum of £640.

Future loss of earnings

171. On the basis of the career projection set out above, Mr Barry's pre-injury future earnings (including benefits and allowances), as a capitalised lump sum, would have been £1,057,047.

172. Mr Barry's assumed net annual future earning capacity is £32,156. Using a multiplier of 18.81, his net residual earnings are £604,800. The net loss is £452,247.

Future loss of pension

173. The claim for loss of pension is agreed: £152,424.

Cost of hearing aids

174. Mr Barry claims for the cost of hearing aids and ancillary expenditure. He seeks £5,020.40 in respect of the initial capital costs, and £1,054.08 a year thereafter to cover replacement costs and associated expenditure. His claim is based on the cost of Widex hearing aids and accessories.

175. The MoD puts Mr Barry to proof on the question of whether he will use hearing aids and, if so, whether he will purchase them given that hearing aids are freely available from the NHS. It also suggests that less expensive models are available privately that would be suitable for Mr Barry's needs.

176. In July 2015 Mr Barry was offered a hearing aid for his left ear. He felt self-conscious when he wore it, and found it difficult and uncomfortable with limited benefits. He could not cope with it. He stopped using it. The uncontested expert evidence of Mr Robertshaw is that a unilateral hearing aid for bilateral hearing loss is doomed to fail. It is therefore not surprising that Mr Barry found it of limited utility and stopped using it.

177. When Mr Barry was offered a trial of two different types of hearing aid, he was keen to try them. He wore the aids for the full length of the trial (10 weeks). This is verified by a readout from the aids' logging software. Mr Barry's evidence is that they make a significant difference. He became accustomed to them quickly and it became second nature to wear them. They were discreet and comfortable. His family (including his mother and Ms Atkinson) noticed a significant improvement in his hearing. He felt more confident when wearing them and believes that they significantly improve his day-to-day life. This was the case in respect of both pairs of hearing aids that Mr Barry trialled, although he has a preference for the Widex model. This is borne out by the detailed scoring cards that he completed at the time, albeit the difference in the scores for the models he trialled is marginal.

178. Mr Barry's enthusiasm for the hearing aids is arguably contrary to his interests because of the impact on his loss of earnings claim. I see no reason not to accept his evidence at face value. He says that the hearing aids suit his lifestyle and that he wants to buy them as soon as he can. It was not suggested that hearing aids provided by the NHS would have the same level of functionality as those trialled by Mr Barry. The agreed evidence is that they are less discreet. I accept Mr Barry's evidence. He has discharged

the burden of proving that he will purchase and use hearing aids (rather than using NHS provision, or doing without altogether) if the funding is made available.

179. The next issue concerns the costs claimed for hearings aids, including the replacement schedule. The detailed reports that were made of the trials that Mr Barry undertook provide clear evidence that he found the Widex aids more helpful than an alternative model that was provided. The difference was, however, marginal. If the alternative model were substantially less expensive then I think it is likely that Mr Barry would probably choose that model on a simple cost/benefit basis. I was not, however, shown any evidence as to the cost of the alternative model.

180. Professor Lutman gave evidence that there is a wide variability in the cost of hearing aids in the private sector. Anecdotal evidence was given of internet advertisements indicating lower costs than those claimed by Mr Barry. Mr Robertshaw counselled caution about accepting such advertisements at face value, saying that he has experience of unrealistic advertisements being used to trigger a customer making contact, only for the customer to find that the price advertised is not practically available. More generally, I was not shown any definitive evidence that a model of hearing aid was available that was broadly equivalent in terms of functionality and discretion as the model that Mr Barry prefers. Further, the sum claimed by Mr Barry includes provision for consulting, fitting and adjustment costs, which were not clearly included in the anecdotal quotations to which I was referred. There was no challenge to the replacement schedule that had been modelled by Mr Robertshaw. Mr Barry has established his case. I award the sum claimed in respect of hearing aids.

Total award

181. The total award is therefore £713,716:

General damages for pain, suffering and loss of amenity	£27,500
Less Armed Forces Compensation Scheme payment	-£6,000
General damages for loss of congenial employment	£8,000
Interest on general damages	£1,464
Past loss of earnings:	£32,840
Miscellaneous past losses:	£400
Interest on past losses:	£640
Future loss of earnings:	£452,247
Future loss of pension:	£152,424
Cost of hearing aids:	£44,201

Outcome

182. The MoD admits that Mr Barry has suffered injury and loss as a result of exposure to excessive levels of noise and that this was due to the MoD's negligence and breach of statutory duty. It has not shown that Mr Barry was at fault. Mr Barry is entitled to compensation for his losses, without any reduction for contributory negligence. I assess quantum in the sum of £713,716.