Noteworthy Decision Summary

Decision: WCAT-2011-00280 **Panel:** D. Sigurdson **Decision Date:** January 31, 2011

Loss of hearing – Section 7 of the Workers Compensation Act – Non-traumatic loss of hearing arising out of and in the course of employment – Policy items #31.00 and #31.20 of the Rehabilitation Services and Claims Manual, Volume II – Evidence of causation

In 2009, the worker claimed compensation for hearing loss due to exposure to occupational noise 25 years earlier. The worker's claim had been denied by the Workers' Compensation Board (Board) and the Review Division on the basis that the worker, a paramedic, did not prove a causal connection between his exposure to loud siren noises in the early 1980s and his hearing loss diagnosed in 2009. WCAT allowed the appeal, having found there was both contemporaneous and forensic evidence of sufficient occupational exposure to hazardous noise levels to satisfy the requirement in policy item #31.20 of the *Rehabilitation Services and Claims Manual, Volume II*.

Section 7(1) of the *Workers Compensation Act* provides that where a worker suffers greater than a prescribed level of non-traumatic loss of hearing arising out of and in the course of employment, the worker is entitled to compensation.

The worker was employed with the ambulance service since the late 1970s. The Board accepted evidence that, because of the way most ambulances were constructed, the worker was regularly exposed to hazardous noise levels from sirens until 1984. In fact, the Board had previously accepted a claim the worker made in 1980 for tinnitus (a noise in the ears). The evidence from that claim demonstrated that in addition to tinnitus, the worker was experiencing early hearing loss. At the time, the Board determined that the hearing loss did not warrant compensation and accepted the claim for tinnitus only.

In denying the worker's present claim, the Board relied on its audiologist's opinion that there was no causal connection between the worker's occupational noise exposure and his hearing loss diagnosed 25 years later. In support of her opinion, the Board audiologist noted that the worker's 1980 audiogram, which was contemporaneous with the hazardous exposure, showed the worker's hearing was essentially normal. The Review Division agreed with the Board and noted the worker's hearing loss was consistent with age-related changes.

On appeal, the worker argued that the Board audiologist had misinterpreted the evidence from his 1980 claim as showing essentially normal hearing. In support of his appeal, the worker tendered the opinion of a forensic audiologist who opined that the 1980 audiogram was evidence of early damage that clearly had progressed. He said current audiograms revealed significant hearing loss that was consistent with excessive noise exposure that could not be accounted for from a non-occupational source. WCAT agreed with the worker and preferred his expert's opinion over that of the Board audiologist. In coming to its conclusion, WCAT also accepted the worker's evidence that he experienced gradual hearing loss to which he became accustomed and adapted; all of which is consistent with the medical evidence that noise-induced hearing loss is progressive, painless, and eventually permanent.

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Panel: Debbie Sigurdson, Vice Chair

Introduction

[1] On December 18, 2009 the Workers' Compensation Board, operating as WorkSafeBC (Board), disallowed the worker's claim for occupational noise-induced hearing loss. The worker requested a review of that decision. In *Review Reference #R0113077* dated June 3, 2010 a review officer at the Review Division of the Board confirmed the decision to disallow the worker's claim. The worker has appealed that decision. He seeks acceptance of his claim for occupational noise-induced hearing loss.

Issue(s)

[2] Is the worker's hearing loss due to exposure to occupational noise?

Jurisdiction

[3] Section 239(1) of the *Workers Compensation Act* (Act) provides that a decision made by a review officer under section 96.2 may be appealed to the Workers' Compensation Appeal Tribunal (WCAT). Section 250(1) and section 254 of the Act allow WCAT to consider all questions of law and fact arising in an appeal, subject to section 250(2), which requires that WCAT apply the relevant Board policy, and make its decision based on the merits and justice of the case.

[4] This is a rehearing by WCAT. WCAT reviews the record from previous proceedings and can hear new evidence. WCAT has inquiry power and the discretion to seek further evidence, although it is not obliged to do so. WCAT exercises an independent adjudicative function and has full substitutional authority. WCAT may confirm, vary, or cancel the appealed decision or order.

[5] The standard of proof in compensation matters is the balance of probabilities, subject to the provisions of section 250(4) of the Act. Section 250(4) of the Act provides that when the evidence on an issue is evenly weighted, the matter is resolved in favour of the worker.

[6] The worker did not request an oral hearing. The WCAT *Manual of Rules of Practice and Procedure* (MRPP) Rule #7.5 states that WCAT will normally conduct an appeal by written submissions where the issues are largely medical, legal, or policy based and credibility is not at issue. The issues in this appeal require consideration of the medical evidence and largely undisputed factual background, and the application of the relevant law and policy to that evidence. I find I am able to decide this appeal without an oral hearing.

[7] The employer was provided with notice of the appeal and indicated its intention to participate. The worker is represented and provided submissions in writing through his representative. The employer was provided the opportunity to make submissions in writing; however, none were received.

Background and Evidence

[8] The employer operates an ambulance service. This now 54-year-old worker has been employed as a paramedic since June 1978.

[9] On February 20, 2009 Dr. Wilson, the worker's attending physician, submitted a physician's report of injury to the Board, indicating that the worker was developing hearing loss. He noted the worker had developed tinnitus in 1980 as a result of exposure to noise. In 1981 the Board accepted the worker's claim for occupationally induced tinnitus. The worker was progressively losing his hearing and was referred for formal testing.

[10] On July 14, 2009 the worker submitted an application for hearing loss resulting from exposure to long-term occupational noise. On his application form, the worker indicated he first became aware of problems with his hearing in May 1981. He attributed his hearing loss to daily exposure at work to siren noise for greater than 20 years, and particularly during the period 1978 to 1982, when he indicated the siren noise was extremely loud.

[11] The worker completed a hearing loss employment questionnaire, and on that form he reported that he commenced wearing bilateral hearing aids between May and July 2009. He has experienced a decreased ability to hear that has evolved and progressed since 1981. The worker acknowledged he had been exposed to firearm noise outside of his employment when he engaged in hunting on a very occasional basis over a three to four-year period. He has used power tools on a sporadic and very infrequent basis, and has seldom used a chainsaw over the years. The worker rode a motorcycle for a four-year period. His father had been diagnosed with hearing loss at age 70. The worker indicated that for a 14-year period when he worked as an advanced life support (ALS) paramedic, he was exposed to sirens on a very frequent basis. For a seven-year period he worked as a basic life support paramedic and was exposed to sirens on a frequent basis. When employed as a "QI" coordinator for six years, the worker was occasionally exposed to sirens.

[12] On November 16, 2009 a Board audiologist reviewed the worker's claim and provided an opinion that the worker, as an ambulance driver, would have had hazardous noise exposure between 1978 and 1984, but not likely after that date. She noted the worker's overall daily noise exposure as a paramedic after 1984 did not exceed 85 dBA Lex on a regular basis. The Board audiologist stated as follows:

> The primary source of hazardous noise exposure for ambulance / paramedic personnel is the siren. The location of the siren on the vehicle is a critical factor in whether ambulance/paramedic personnel are exposed to hazardous amounts of noise sufficient to result in hearing loss. In the past, there was limited noise measurement information indicated that vehicles with roof-mounted sirens generated high noise levels inside the cabs of the vehicles. When the sirens are mounted on the hood or bumper of vehicles the noise levels inside the cabs are significantly reduced...
>
> ...The results of this new evidence indicated:
>
> - By approximately 1984 sirens were either hood or bumper mounted on [the employer's] vehicles;
> - Daily duration of exposure to the critical siren noise did not result in doses that would be hazardous to hearing;
> - Noise exposures for ambulance/paramedic personnel were consistently below 80 dBA Lex and posed no risk for hearing loss;
> - USA studies indicated typical, daily noise exposures below hazardous levels (even with windows down) and hearing acuity similar to an age-equivalent, non-noise exposed population.

[13] The Board audiologist noted it is well-established that occupational noise-induced hearing loss does not progress following cessation of occupational noise exposure. In the absence of any non-occupational etiology, any subsequent hearing changes follow the same degree and rate as age-related changes in the general population. She noted that the hearing tests the worker underwent in 1980 were closest in time to his period of exposure to occupational noise (roof mounted sirens), but the test results indicated the worker's hearing was essentially normal at that time. While the test results in 2009 indicated the worker had bilateral hearing loss, the test results were taken more than 25 years after the worker would have had significant occupational noise exposure (to roof mounted sirens). The Board audiologist provided an opinion that a cause-and-effect relationship could not be established between the worker's occupational exposure to noise and his subsequent hearing loss.

[14] Of note, the worker had commenced a claim on October 17, 1980 in relation to discomfort he was experiencing to both ears, particularly when driving an ambulance with the siren on. At that time, the worker noted the sirens were mounted on the roof of the ambulance over the driver's head. He described the noise as very loud, even when wearing hearing protection. Dr. Hicks, otolaryngologist, examined the worker on December 10, 1980 and performed an audiogram. He reported the worker was experiencing early hearing loss in acuity at 4,000 Hz. Dr. Hicks provided an opinion the worker had a high tone neurosensory hearing loss. In a memorandum to the worker's 1980 claim file, a Board medical advisor noted that the worker had high frequency hearing loss, but further noted the worker's hearing loss did not warrant the provision of

a hearing aid and was not sufficient for consideration of a permanent partial disability award. Accordingly, the Board determined that the worker's hearing loss was not an issue in relation to his 1980 claim. The Board accepted the worker's claim for bilateral tinnitus as being due to his employment as a paramedic.

[15] In the decision dated December 18, 2009 the Board officer relied on the Board audiologist's opinion to disallow the worker's claim.

[16] In submissions to the Review Division dated March 11, 2010, the worker noted that the call volume in the region he has worked has required that most of his 10-hour day shifts and 14-hour night shifts were spent responding to calls. It was not until late 1990 that the worker was made aware of siren risks or advised to wear hearing protection devices. The worker indicated that between 1978 and 1986 he worked in various areas of the region he resides, and worked in different styles of ambulances, with sirens mounted on the roof, to the hood, and to the bumper. Between 1986 and 1997 the worker worked as an ALS paramedic and also worked out of a variety of styles of ambulances having varied siren placement and dBA levels. The worker noted that ALS ambulances were typically older style with older design features such as siren placement. The acceptable dBA levels were not necessarily in place. The worker submitted his non-occupational activities did not place him at risk of developing hearing loss. The worker submitted he was exposed to hazardous noise levels at work between 1978 and 2002. While the worker did not undergo hearing tests between 1980 and 2009, he was exposed to hazardous occupational noise during the intervening years.

[17] In the June 3, 2010 decision, the review officer concluded it was significant that the worker had been exposed to hazardous levels of noise between 1978 and 1984, but his 1980 hearing test did not reveal any evidence of a hearing loss bilaterally. The worker was not diagnosed with a hearing loss until 2009, which is 25 years after his last exposure to hazardous noise. The review officer relied on the evidence and opinion from the Board audiologist to confirm there was insufficient evidence of work causation of the worker's hearing loss. He noted the Board audiologist had considered the worker's occupation and the nature of his exposure to hazardous noises in arriving at her opinion. The review officer noted that the noise levels of sirens on ambulances were below 80 dBA Lex after 1984 when the sirens were either mounted on the hood or bumper, which significantly reduced the daily duration of noise exposure. When the worker had been exposed to hazardous noise levels in 1980, he did not develop a hearing loss. The review officer concluded the worker is at risk of developing non-occupational hearing loss based on his age, and his degree of hearing loss was consistent with such a diagnosis. The review officer noted the worker's pattern and configuration of hearing loss was not consistent with the usual characteristics associated with occupational noise-induced hearing loss, such that an employment connection was only speculative.

[18] On September 7, 2010 the worker submitted to WCAT that his hearing loss is related to his occupational exposure to hazardous noise, such that he is entitled to the provision of health care benefits (hearing aids). The worker noted there is no dispute that he was exposed to hazardous noise through his occupation as a paramedic for 6.5 years at levels above 90 dBA. He noted that it was not clear whether the Board audiologist had actually reviewed the results from his 1980 hearing test, as only some of the Board memorandums related to that test were copied to his current claim (Dr. Hick's medical report and audiogram were not copied to the 2009 claim). The worker asked the panel to consider evidence on his 1980 claim, which had suggested at that time his claim ought to have been accepted for a hearing loss, but that he did not require hearing aids and was not entitled to a permanent partial disability award in relation to the level of his hearing loss at that time. Based on the fact that no benefit entitlement would flow from the hearing loss in 1980, the Board officer did not consider a hearing loss claim. Further, the worker requested the panel consider the evidence from Dr. Hicks in 1980, which indicated he had early hearing loss at 4000 Hz and high tone sensory hearing loss.

[19] The worker submitted that in the course of his employment, he would drive with the left window open in order to hear the sirens from other emergency vehicles, particularly at intersections. The ambulances did not have power windows, such that the windows would be left down a majority of the time, which the worker submits increased the hazardous noise levels, particularly on the driver's left side. The worker noted the research the Board audiologist had referenced in her opinion also stated that occupational noise-induced hearing loss develops rapidly in the early years of exposure and reaches an asymptote after eight to twelve years. The worker submitted that if that factor is taken into account, his recognized hearing loss in 2009 would closely represent his hearing loss in 1984 when he was last exposed to occupational noise.

[20] The worker noted that while his father, now 82 years, has hearing loss, his father's hearing loss is due to occupational noise exposure, such that the Board has provided him with hearing aids for greater than 20 years. The worker's exposure to gunshots occurred prior to 1980 when he was growing up on a farm. His use of power tools and chain saws has been very sporadic and similar to that experienced by most homeowners. The worker had ridden a motorcycle in 1973 and 1980, which included riding a small cubic inch Japanese street model while wearing a full helmet. The worker submitted the audiology reports from 1980, 2009 and 2010 show similarities in the notching at 4,000 Hz and higher hearing loss in his left ear. This would be consistent with the worker's left side being exposed to louder noises when driving the ambulance with the windows down. The worker asked the panel to rely on the evidence and opinion from Dr. Ribera, forensic audiologist, over that provided by the Board audiologist.

[21] The worker provided new evidence, including an expert opinion from Dr. Ribera, forensic audiologist. Dr. Ribera reviewed the worker's claim file and provided an opinion that the 1980 audiogram was not "normal", as hearing at 25 dB is at the high

end of normal, which indicates minimal hearing loss. He described this loss as similar to a person putting fingers in both ears and listening. With regard to the worker's 1980 audiogram, Dr. Ribera noted three findings of significance, as follows:

1. The left ear shows a mild loss of 30dBHL at 4000 Hz;
2. There is a decreased response in both ears at 4000 Hz compared to the adjacent test frequencies (2000 and 8000). This is known as a notch and when it occurs is often associated with and indicative of noise-induced hearing loss. Usually the notch will occur at 3000, 4000, or 6000 Hz. My interpretation of these findings is that the 1980 audiogram was revealing early signs of a noise-induced hearing loss.
3. The frequencies of 3000 and 6000 Hz were not tested. Those are critical frequencies that are to be tested in hearing conversation programs.

[reproduced as written]

[22] Dr. Ribera noted that noise-induced hearing loss is progressive, painless, and with enough exposure, permanent. It does not progress once the hazardous noise source has been removed or reduced to acceptable limits. Dr. Ribera noted that in the worker's case there was no (audiological) evidence to prove or disprove progressive hearing loss between 1980 and 1984. He provided an opinion that the 2009 and 2010 audiograms, which had revealed bilateral high frequency sensorineural hearing loss, were consistent with an etiology of excessive noise exposure. Dr. Ribera indicated that sometime after 1980 the worker incurred a permanent high frequency sensorineural hearing loss. Dr. Ribera could not account for the degree of the worker's hearing loss and audiometric configuration from a non-occupational source. Dr. Ribera provided an opinion that given the worker's exposure to occupational noise, and the absence of evidence of non-occupational causes for permanent hearing loss, the worker's hearing loss evidenced between 1980 and 2009 is due to occupational noise exposure.

[23] The worker provided documents from a co-worker's (PS) claim for occupational noise-induced hearing loss. PS has been employed as a paramedic in a career that has paralleled the worker's career as a paramedic. PS had an audiogram taken in September 1990 which had demonstrated moderate bilateral high frequency hearing loss. PS had his claim for occupational noise-induced hearing loss accepted by the Board in 2009.

[24] In a written statement dated September 12, 2010 the worker indicated he has described his hearing loss as gradual, because he could not provide an exact date as to when it had changed from 1980. He noted he has suffered from job-related tinnitus that affects his hearing and his ability to distinguish changes in his hearing. The worker stated his hearing loss started slowly and progressed between 1978 and 1984. By 1985 his hearing loss had become a way of life that he accepted as normal. In particular, the worker noted that on July 12, 1989 Dr. Sigismund, his attending physician at the time, had provided his employer with a letter recommending that he not participate in air-

ambulance service because he had mild high tone nerve deafness, which had been attributed to his noise exposure at work. The worker reported that in 1989 he was very much aware he was having difficulty hearing things, and this had become a part of his life.

[25] In support of his appeal, the worker provided a copy of the letter dated July 12, 1989 from Dr. Sigismund. In that note, Dr. Sigismund noted the worker had a history of tinnitus and mild high tone nerve deafness. The worker was advised to wear hearing protection and to avoid loud noise; the worker should avoid air-ambulance service because of the noise exposure in the aircraft.

[26] The worker provided a copy of an audiogram taken July 20, 2010, which revealed that his hearing was within normal limits up to 2000 Hz, and then sloped to a moderately-severe sensorineural hearing loss bilaterally. The audiologist recommended the worker wear bilateral hearing amplification. She noted the worker's present hearing loss may be in part due to his history of noise exposure.

Reasons and Findings

[27] Section 7(1) of the Act provides that where a worker suffers loss of hearing of non-traumatic origin, but arising out of and in the course of employment that is a greater loss than the minimum set out in Schedule D, the worker is entitled to compensation. Schedule B of the *Rehabilitation Services and Claims Manual* lists neurosensory hearing loss as an occupational disease. As noted in *Volume II,* (RSCM II) item #31.00, a worker is entitled to compensation for occupationally-induced neurosensory hearing loss that is non-traumatic in origin that arises out of and in the course of employment.

[28] RSCM II item #31.20 clarifies that a claim for occupational noise-induced hearing loss is acceptable where, at a minimum, there is evidence of continuous work exposure in British Columbia for two years or more at eight hours per day at 85 dBA or more, and when other evidence does not disclose a cause of hearing loss not related to work. The fact a worker has worn individual hearing protection does not create a bar to compensation. This policy item recognizes that after ten years of exposure, further loss is negligible, such that the first ten years of exposure to occupationally induced noise has a significant effect at higher frequencies.

[29] There is no dispute that the worker was exposed to occupational noise in the course of his employment as a paramedic for 6.5 years between 1978 and 1984. At issue in this appeal is whether the worker's measured high frequency hearing loss in 2009 can be attributed to his occupational exposure to noise 25 years or more prior.

[30] I agree with the worker that the Board audiologist did not appear to fully appreciate the evidence from Dr. Hicks with regard to his audiogram and measured high frequency hearing loss in 1980. From my review of the evidence in relation to the worker's 1980 claim, it is apparent the worker did suffer from a minor level of high frequency hearing

loss at that time; however, the level of his hearing loss was not sufficient to warrant the provision of hearing aids or to be considered for pension entitlement. In those circumstances, the Board declined to adjudicate the measured hearing loss in 1980 and proceeded to consider only the worker's bilateral tinnitus.

[31] I rely on the evidence and opinion from Dr. Hicks to find that the worker was experiencing the beginning of high frequency hearing loss in1980. In addition, I rely on the evidence and opinion from Dr. Ribera to find that the worker's audiogram in 1980 was not "normal", but rather demonstrated mild hearing loss that is consistent with early signs of noise-induced hearing loss. Accordingly. I find the Board audiologist's statement that the worker's hearing was "essentially normal" in 1980 to be inaccurate. I note that the evidence from Dr. Sigismund in 1989 adds support to a finding that the worker had experienced mild high tone hearing loss prior to 2009.

[32] I accept the worker's evidence that he has experienced a gradual hearing loss that became a way of life for him by 1985, and that he has learned to live with his hearing difficulties. I have found the worker's evidence on this point to be consistent with the level of hearing loss he has experienced. The degree of the worker's hearing loss as evident from the 2009 and 2010 audiograms is not of significance to warrant consideration of a permanent partial disability award. The worker has provided evidence that he commenced his claim for occupational noise-induced hearing loss after speaking with a work colleague who has had a claim accepted by the Board.

[33] While the worker's father has hearing loss and wears a hearing aid, I accept the worker's evidence that this is due to exposure to occupational noise, and that the Board provides his father with hearing aids. Accordingly, there is insufficient evidence of a family history of hearing loss.

[34] I accept the worker's evidence that his use of power tools and chainsaws has been very sporadic. I note that the worker's exposure to noise from the use of firearms and the use of a motorcycle noise occurred prior to 1980. The worker's permanent high frequency sensorineural hearing loss progressed after 1980, during which time he was not exposed to noise from the use of firearms or the use of a motorcycle, such that I am unable to attribute the worker's permanent high frequency hearing loss to non-occupational noise exposure.

[35] As noted above, I have found the worker's hearing was not "essentially normal" in 1980, and for that reason I prefer the medical opinion of Dr. Ribera over the opinion of the Board audiologist. I note that Dr. Ribera has provided an opinion that the worker's 2009 and 2010 audiograms were consistent with excessive noise exposure as causative of his bilateral high frequency sensorineural hearing loss. I rely on the evidence from Dr. Ribera to find that the worker's occupational exposure to hazardous noise between 1978 and 1984 was of causative significance to his high frequency hearing loss as evident in 2009.

Conclusion

[36] I allow the worker's appeal and vary the Review Division decision. I find the worker's hearing loss is due to exposure to occupational noise.

[37] The worker has requested reimbursement of the expense of obtaining Dr. Ribera's audiological expert opinion in the amount of $1,750.00. The MRPP at item #16.1.3 provides that WCAT will generally order reimbursement of expenses for obtaining written evidence, regardless of the result in the appeal, where the evidence was useful or helpful to the consideration of the appeal, or it was reasonable for the party to have sought the evidence. I have found the medical evidence and opinion of Dr. Ribera to be helpful in deciding this appeal.

[38] The MRPP at item #16.1.3.1 provides that WCAT will usually order reimbursement of expert opinions at the rate established by the Board for similar expenses, and that the balance is the responsibility of the party who obtained the report. WCAT retains the discretion to award reimbursement of the expense of an expert opinion in an amount greater than the fee schedule in limited circumstances. The MRPP provides that such limited circumstances may include difficult cases that require significant time and effort, consideration of the length of the report, and whether the detail and analysis of the report is uncommon. I note that the British Columbia Medical Association's fee schedule does not provide a distinct fee for an audiologist's report, or provide guidance on the appropriate fee for evidence from a forensic audiologist (as opposed to a medical practitioner). The current fee for a medical-legal opinion is $1,275.00.

[39] In the specific circumstances of this appeal I find that it is appropriate to order the Board to reimburse the worker the full expense of obtaining the expert opinion from Dr. Ribera. I note that Dr. Ribera has reviewed literature regarding hearing loss for paramedics, and interviewed the worker in preparing his report. Dr. Ribera has provided a detailed opinion following his review of the evidence in relation to this specific worker. I order the Board to reimburse the worker $1,750.00 for the expense of obtaining the expert evidence from Dr. Ribera.

Debbie Sigurdson
Vice Chair

DS/jd