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FD:
DT:D
DN: 55/87
STY:
PANEL: Newman; Klym; Apsey
DDATE: 091188
ACT: none
KEYW: Hearing loss; Medical opinion (hearing loss); Investigation
by Tribunal; Steelworker.
SUM: Steelworker entitled to benefits for bilateral sensorineural
hearing loss.

No precise reliable data on noise exposure, but Panel found that between 1964 to 1976, worker was exposed to noise levels between 70 and 117 decibels, that the exposure to hazardous levels of noise was continuous and that exposure to levels significantly above 90 decibels was intermitent. In 1976, worker was removed from noisy environment but hearing continued to deteriorate.

Panel requested medical opinion and accepted medical opinion that noise-induced hearing loss is sensorineural, although there are other causes of sensorineural hearing loss; that asymmetrical hearing loss could be noise-induced but, in any event, this worker's audiograms were, on average, consistent and within 5 decibels of each other and therefore would be considered symmetric; that original hearing loss was due to noise and that hearing loss between 1976 and 1986 was slight and due to a mixture of aging and further noise exposure.

PDCON:
TYPE:A
DIST:
DECON: 55/87L
BDG:Claims Services Division Manual,
s.122, p. 270, Directive 19
IDATE:
HDATE:031287
TCO:D. Munro
KEYPER:D. Timms
XREF:
COMMENTS:
TEXT:

WORKERS' COMPENSATION APPEALS TRIBUNAL

DECISION NO. 55/87

This appeal was heard on December 3, 1987, by:

E. Newman : Panel Chairman,
R.H. Apsey: Tribunal Member representative of employers,
P. Klym : Tribunal Member representative of workers.

Post-hearing requirements were satisfied on September 12, 1988.

THE APPEAL PROCEEDINGS

The worker brings this appeal from the decision of the Workers' Compensation Appeal Board dated July 25, 1983. Leave to appeal was granted in Decision No. 055/87L.

The Appeal Board denied entitlement to compensation benefits for hearing loss, because in its view, the Board's criteria for entitlement to benefits had not been met. The evidence did not establish, to the satisfaction of the Appeal Board, that the worker had sufficient exposure to noise to aggravate his hearing condition after 1976.

The worker attended and was represented by D. Timms of the U.S.W.A., Local 1005. The employer was represented by C. Kay-Aggio, a lawyer with Hicks, Morley. The Panel benefitted from the assistance of D. Munro of the Tribunal Counsel Office.

THE EVIDENCE

The Panel considered the Case Description and testimony from the worker. Submissions were made by the representatives and by Mr. Munro.

Following the adjournment of the hearing, the Panel caused questions to be put to the Medical Liaison Officer of the Appeals Tribunal, which questions were distributed to the representatives. Material received in response to those questions was also distributed, and the parties were given an opportunity to make submissions.

Subsequently, specific questions were put to Dr. P.W. Alberti, and answered in the report which was marked as Exhibit #6. Exhibits are the following:

Exhibit #1: Case Description;
Exhibit #2: Letter dated January 28, 1988, and five excerpts from medical literature regarding hearing loss.
Exhibit #3: Letter from employer's representative dated February 23, 1988;
Exhibit #4: Letter from worker's representative dated February 23, 1988;

Exhibit #5: Questions put to Dr. Alberti in letter of June 27, 1988;
Exhibit #6: Response of Dr. Alberti dated August 12, 1988.

THE NATURE OF THE CASE

Since 1964 this worker was employed as a general labourer, in a number of different capacities, in a steel mill. In 1976, a hearing examination was conducted by the employer and hearing loss was identified.

By 1982 the hearing loss deteriorated to a level which the Board considered significant enough to be compensable. However, the question of the cause of the hearing loss remained in dispute.

On January 25, 1983, the Appeals Adjudicator granted entitlement to benefits for the hearing loss. He concluded that it was caused by hazardous levels of noise to which this worker was exposed in the course of his employment. The Appeal Board, on July 25, 1983, reversed that finding and denied entitlement. Leave to appeal was granted in Appeals Tribunal Decision No. 055/87L.

The issue on this appeal is whether or not this worker's hearing loss is one which, more probably than not, was caused by exposure to hazardous levels of noise in the course of employment.

THE PANEL'S REASONS

The noise level to which this worker was exposed does not come within the guideline set by the Board in Directive 19, which was in place at the time of the hearing. That guideline required that, as a minimum, the worker must be exposed for a period of five or more years to hazardous noise of 90 decibels, for eight hours per day.

This is a case which falls to be determined on the criteria set out in section 2.2 of Directive 19. That section provides:

2.2: Since individual susceptibility to noise varies, claims which do not need the criteria set out in 2.1 are individually judged on their own merit having regard to the nature of the occupation, the extent of exposure, and any other factors peculiar to the individual case. The benefit of doubt applies.

Ms. Kay-Aggio argued that in cases where the Appeals Tribunal has granted entitlement to benefits for hearing loss, but where the evidence did not fall within the guideline established by Directive 19, the facts were unusual and extreme. In those cases she argues that exposure was to high levels of noise, in the 85 to 90 decibel range, for periods ranging between 25 and 30 years.

Mr. Timms argued that this is a bilateral sensorineural hearing loss, and as the medical evidence indicates, is consistent with that kind of hearing loss which is noise induced. There is no other explanation for the worker's

loss of hearing, and it is argued that the Panel should conclude that it was more probably than not, caused by exposure to noise in the work place.

The Panel was concerned, following the adjournment of the hearing, that the parties were basing their submissions on certain assumptions about the nature and development of bilateral, sensorineural hearing loss. For example, one submission was that this sort of hearing loss could only be caused by exposure to noise. Another was that the history of the development of symptoms in this case was inconsistent with the development of hearing loss which is caused by exposure to noise.

Because of the Panel's uncertainty about the validity of the assumptions that were made regarding the nature of the disability in question, it sought further evidence in the form of medical literature. Subsequently, because it remained uncertain of the medical significance of certain particulars of this worker's history of disability, the Panel sought answers to certain questions from Dr. P.W. Alberti.

(i) Exposure

As is common in cases of a claim for benefits for an industrial disease, the Panel had some difficulty with the evidence regarding the degree of exposure to hazardous noise which this worker suffered during his lifetime.

We have a concern about the reliability of the data on the noise levels in the work place. We note, for example, that when testing was performed by this employer in March of 1977 (page 29 of the Case Description) there is evidence that the employer performed two tests to determine noise levels. The two different tests produced very different results, varying in the measurement by as much as 15 decibels.

Another example is provided in a document dated April 18, 1983, in which the employer sought to correct information previously provided to the Workers' Compensation Board, about the worker's employment history and exposure during that history. In this document the employer corrected the title under which the worker was employed, from "hot bed labourer" to "soaking pit labourer". The latter, in 1983, is described as having a continuous noise level based on a typical 40 hour work week at 85 decibels. There is no indication however, of when this measurement was taken; 1977, 1983, or on some date in between. In any event, it appears that the worker performed this job between 1964 and 1971.

The Panel is satisfied that during his employment, from 1964 until 1976, the worker was exposed to varying levels of hazardous noise. The levels ranged from approximately 70 decibels to approximately 117 decibels. We are satisfied that during these years, the worker's exposure to hazardous levels of noise was continuous, and that his exposure to levels of noise which were significantly above 90 decibels was intermittent. The nature of the evidence available does not permit the Panel to make any more of a precise finding regarding the extent or duration of exposure to hazardous levels of noise.

(ii) The nature of the disability

In addition to its concern about the quality of the evidence available regarding the level of noise to which this worker was exposed, the Panel had a serious concern about the nature of the disability. Given specific idiosyncratic characteristics of the history of this worker's disability, the Panel had cause to question whether or not the disability was, in this case, consistent with that sort of hearing loss generally understood, in the medical community, to be caused by exposure to noise.

The questions put to Dr. Alberti are set out in Exhibit #5, and are annexed to this decision as Appendix 1.

The evidence revealed that, in this case, the hearing loss developed at a different rate in the left ear than the right. Following 1976, the worker was removed from a hazardous environment, insofar as he was then required to wear hearing protection. However, the evidence revealed that after that point in time and notwithstanding a hearing conservation program, the hearing loss continued to deteriorate.

The Panel specifically questioned Dr. Alberti on the question of whether or not such factors were consistent with noise-induced hearing loss.

As is revealed in the response of Dr. Alberti, Exhibit #6 to the proceedings, and annexed to this decision as Appendix 2, Dr. Alberti provided his explanation of these characteristics of the worker's disability. As that document reveals, Dr. Alberti shared with the Panel his opinion that these characteristics do not remove this worker's disability from the sort of hearing loss which is consistent with exposure to hazardous levels of noise over an extended period of time.

Once in receipt of Dr. Alberti's report, the parties were provided with an opportunity to reconvene this hearing, for the purpose of questioning or cross-questioning Dr. Alberti on his opinion. The parties declined to do so.

(iii) The Panel's conclusions

In the view of this Panel, the evidence leads to the conclusion that the worker's hearing loss was, more probably than not, caused by his exposure to hazardous levels of noise while in the course of his employment.

In a case such as this, the Panel must consider the evidence of exposure very carefully. Even in the absence of precise reliable data regarding the levels of noise, extent of the worker's exposure to that noise, the Panel must formulate an impression regarding the degree and duration of exposure. In this case, as has been pointed out, the Panel is unable to reach a precise finding of fact regarding the specific extent and duration of exposure. However, the Panel is able to formulate an impression of that exposure, and our impression is that the exposure was considerable.

We are satisfied, based upon Dr. Alberti's evidence, that the worker's bilateral sensorineural hearing loss has not developed in a manner inconsistent with that caused by exposure to hazardous levels of noise. In

the absence of any evidence regarding alternate cause of the hearing loss, and

given the Panel's impression of the degree and extent of exposure to noise in the work place, we must conclude that the disability was, more probably than not, work related.

THE DECISION

Entitlement is granted for bilateral sensorineural hearing loss. The Workers' Compensation Board must determine the nature and extent of entitlement.

DATED at Toronto, this 9th day of November, 1988.

SIGNED: E. Newman, R.H. Apsey, P. Klym.

APPENDIX 1 TO DECISION NO. 55/87

June 27th, 1988

Dr. P.W. Alberti
Mount Sinai Hospital
Suite 405
600 University Avenue
Toronto, Ontario
M5G 1X5

Dear Dr. Alberti:

Following the hearing of this appeal, the panel has determined that further medical opinion would be of assistance prior to reaching their decision. I am respectfully requesting that you review the enclosed documentation and prepare a report to the Tribunal which would include your responses to the following questions:

1. It is understood that noise induced hearing loss is bilateral and sensory neural in nature. Is it also true that all bilateral, sensory neural hearing loss is noise induced?
2. If this type of hearing loss is not always noise induced, what other possible causes are there in an individual with no obvious contributory medical history?
3. With respect to the worker's hearing loss, if it is concluded that a bilateral sensory neural hearing loss does exist, what is the significance, if any, of the evidence which reveals that the hearing loss developed at a different rate in the left ear than in the right? Does this contribute to the determination of the etiology of that hearing loss? If hazardous noise is suspected as the cause of this type of hearing loss, why would it develop at a different rate in the left ear than in the right?
4. What is the significance, if any, of evidence that reveals that after the worker began to wear hearing protection and was exposed to lower levels of noise, his hearing loss continued to deteriorate? Does this suggest an alternative hypothesis for the worker's hearing loss? If so, what?

Normally, in the course of your practice, reports are sent to colleagues or to the WCB where medical consultants have a similar level of understanding of disease processes, the significance of physical findings, etc. The Tribunal, in determining an appeal seeks access to

the informed opinion of experts yet requires this information in a format which not only explains medical conditions in lay terms, but includes the rationale for the expert's opinion. We hope that you will keep this in mind when preparing your report.

WCAT fees for physicians' services use as their base the OMA Schedule of Fees. Please see the attached guidelines 'Categories of Consultations' and adjust your fee according to the complexity of the consultation request.

The Tribunal has a procedural policy whereby all evidence which is to be presented to the hearing panel must be in the Counsel Office at least three weeks prior to the hearing. Therefore, it will be necessary to have a brief outline of the major points which you intend to discuss in your testimony by one month prior to the hearing in order to comply with this policy. I will leave it to the Scheduling Department and your office to coordinate the hearing date, but ask that you keep in mind that your report must be to the undersigned one month prior to that date.

If you have any questions regarding the above, please do not hesitate to contact the undersigned. Thank you in advance for your anticipated cooperation. I look forward to hearing from you.

Yours very truly,

APPENDIX 2 TO DECISION NO. 55/87

(LETTER PRINTED ON MOUNT SINAI HOSPITAL LETTER HEAD PAPER)

August 12, 1988.

Ms. Marie Makinson,
Medical Liaison Officer,
Workers' Compensation Appeals Tribunal,
505 University Avenue, 7th Floor,
Toronto, Ontario
M5G 1X4

Dear Ms. Makinson:

Thank you for your letter and the information concerning this man. I apologize for the delay in replying but I believe you were advised that I would not be able to respond to this letter until August.

I will attempt to answer the questions which you put in order.

1. "It is understood that noise induced hearing loss is bilateral and sensorineural in nature. Is it also true that all bilateral, sensorineural hearing loss is noise induced?"

The noise induced hearing loss is sensorineural. It is usually but not always bilateral and is usually but not always symmetrical. The converse is not true. There are many other causes of sensorineural hearing loss than noise exposure including Meniere's disease, an acoustic neuroma, aging, congenital hearing loss of various types, genetic weaknesses, ototoxic drug, exposure, viral infections and many others beside.

I noted however that the audiograms submitted in support of this claim are not only sensorineural but classical for a noise induced etiology because they show normal or near normal low frequency hearing and a typical hearing loss in the range 2 to 4 kHz with in the earlier audiograms a recovery in the higher frequencies producing the typical noise notch. This is a description of an audiogram which shows the maximum hearing loss at 3,4, or 6 kHz with better low frequency hearing and a recovery in the higher frequencies. This type of hearing loss is rarely caused by other disease.

2. "If this type of hearing loss is not always noise induced, what other possible causes are there in an individual with no obvious contributory medical history?"

Medical history is an inexact tool. People have indifferent memories beyond ten years and I have repeatedly found that even in those whom I have seen ten or 15 years earlier and obtained a good history in someone whom I might have seen in 1976 and obtained a history of some disease or episode occurring in the late 1960's, when I saw the patient again in the late 1980's, they had only a vague memory of having seen me in the mid 70's and no recollection whatsoever of the event in the 60's.

In short, medical history is no more accurate than human memory in a wide range of other affairs. Secondly, people are frequently unaware of medical history. Here I think specifically of items such as ototoxic drugs. Who knows whether at the time of an appendectomy, an ototoxic drug was sprinkled into the abdominal cavity, as used to be the practice in the 1950's with Streptomycin or whether an ototoxic drug was given by injection for an infection in the early 60's!

A common cause of a sensorineural hearing loss occurring in middle aged adults in genetically predisposed hearing loss and in order to substantiate this, a very detailed genetic history must be obtained and this is simply not available with most people. Thus, sensorineural hearing losses may occur and frequently do for which no cause can be directly found. I quite commonly see patients in my practice with sensorineural hearing losses where there was no medical history to account for it and no history of noise exposure.

3. "With respect to [this worker's] hearing loss, if it is concluded that a bilateral sensorineural hearing loss does exist, what is the significance, if any, of the evidence which reveals that the hearing loss developed at a different rate in the left ear than in the right? Does this contribute to the determination of the etiology of that hearing loss? If hazardous noise is suspected as the cause of this type of hearing loss, why would it develop at a different rate in the left ear than in the right?"

I think there is little doubt that a bilateral sensorineural hearing loss does exist with [this worker]. In broad guidelines

his hearing loss is bilateral and symmetrical.

It should be understood that the testing of hearing is an exact science requiring considerable skill. There is a margin of error in the best of hearing testing of plus/minus 5 db. at each frequency. I think the hearing test results in this instance are remarkably consistent. Yes, the right ear is deteriorating slightly more quickly than the left, most markedly at 1500 Hz, and also somewhat at 2000 Hz. I believe these differences are real but insignificant. The two ears do not always respond absolutely identically to the same noise and may deteriorate at slightly different rates. In this way they are similar to eyes where a prescription for spectacles is similar but not necessarily identical for the two eyes of a patient. On average, his audiograms are consistent and within 5 db. of each other and I would consider them as symmetric.

Asymmetrical hearing losses greater than this should be investigated for other lesions. I have seen several workers in whom a bilateral asymmetric hearing loss is caused by a mixture of noise and another disease, sometimes a tumour on the nerve of hearing. Therefore, I take pains to investigate all workers with asymmetric hearing losses for other causes of ear disease in addition or instead of noise as the cause of the hearing loss. Some time ago we published an article about asymmetric hearing loss based on findings of a large consecutive series of Workers' Compensation claims. We found that although there is a significant proportion of other ear disease present, there is a good number of patients with hearing loss in both ears, with hearing slightly worse on one side than other where no other cause but asymmetric noise exposure or an asymmetric sensibility to noise was found for the cause of the asymmetry. For example, people who shoot guns from the right shoulder without adequate hearing protection develop a hearing loss in the ear nearest the muzzle, i.e. the left ear. It is well known that World War II transport pilots who flew with the window open beside the left ear and with a headset protecting the right ear, developed left-sided sensorineural hearing losses. It is well known that in the mining industry in Ontario, with certain types of jackleg drill, the left ear is more exposed to noise than the right and there is an asymmetric hearing loss.

In this case, I think the question really does not arise because I would treat this loss as symmetric. If the panel still wishes further investigation of this particular point, they must be furnished with evidence about the relative exposure of each ear in the various jobs that [the worker] undertook at [the company]. In my opinion this further investigation is, however, unnecessary.

4. "What is the significance, if any, of evidence that reveals that after the worker began to wear hearing protection and was exposed to lower levels of noise, his hearing loss continued to deteriorate? Does this suggest an alternative hypothesis for the worker's hearing loss? If so, what?"

I think the change in hearing between 1976 and 1986, in this case is slight. This, in fact, is quite a good indication of the effectiveness of the hearing conservation programme at [the company]. It does, however, cross a very critical line between non compensable and compensable.

The question of whether hearing loss which continues after removal from noise is due to noise exposure is an interesting one and one for which it is very difficult to gather evidence. It has generally been held that a loss does not progress from a noise alone after removal from noise. It does, however, gradually worsen with age. I agree with the worker's representative that [this worker's] original hearing loss was due to noise and that he would certainly not be as hard of hearing as he is, had he not been damaged by noise earlier. I believe that the slight change between 1976 and 1986 is due to a mixture of aging and further noise exposure.

I personally in reviewing the audiogram and in reviewing the story, would not hesitate in accepting the hearing loss as due to noise. I have seen enough workers and reviewed enough literature to recognize that there is an individual susceptibility to noise and, indeed, this was recognized in the old, now withdrawn, international standard, ISO 1999, which is also the basis for the current Ontario rules. The old standard included tables of probability from which it could be concluded that with a noise exposure of 90 db., in an eight-hour working day, five days a week, for ten years, 85 percent of the population had no significant hearing loss produced by the noise. Conversely, 15

percent had "tender" ears and did develop a hearing loss. That is why there is an international move afoot, so far resisted by Ontario, to lower the threshold of safe noise levels. Even with an 85 db. exposure for a 40-hour work week for ten years, six percent of the population suffer some damage. One has to get down to a level of probably 78 db. or below, to be entirely free of risk of damage from noise in a total population, i.e. in the more susceptible individuals. In addition, I am never totally comfortable with the noise level measurements produced because they omit the single, loud, bang experienced by a worker when not wearing a protector; they may omit the malfunctioning machinery present for two or three months in some plants and so forth.

I hope that this information is of help and I would be happy to amplify it further, if requested.

With kind regards.

Yours sincerely,

P.W. Alberti

PWA/gp

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