

# HEARING CONSERVATION IN BRITISH COLUMBIA

by

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## ABSTRACT

This is the third of three articles on acoustical activities of the Workers' Compensation Board of British Columbia. Dr. Pat Gannon describes the work of the Hearing Branch on hearing conservation.

## SOMMAIRE

Cet article est le dernier dans une série de trois articles sur les activités réalisées par la Commission de Compensation des Travailleurs en Colombie Britannique. Dr. Pat Gannon décrit le travail de la Branche de l'Audition sur la préservation de l'audition.

In the early 1970's an impending change in the Workers' Compensation Act led to a dramatic increase in the involvement of the Workers' Compensation Board (WCB) in hearing conservation. In the Province of British Columbia the WCB is charged not only with the responsibility for the compensation of workers with existing occupational hearing loss but also with the prevention of this, the most widespread of all industrial diseases.

Accordingly, to meet the demands of this impending change, a graduate audiologist from the Speech and Hearing Division at the University of British Columbia was hired to work in the Industrial Hygiene Department. At the same time, plans were laid for a centre operated by the WCB to deal solely with compensation for and the prevention of occupational hearing loss. This later became known as the Hearing Branch of the Workers' Compensation Board and it was opened in September 1975.

From the outset, Industrial Audiometry was seen as a keystone to a conservation program. Only in this way could the magnitude and seriousness of the problem be evaluated and subsequent remedial efforts monitored. Accordingly, a program for the training of industrial audiometric technicians was evolved and classes started. At the outset it was decided that all industrial audiometric technicians trained in the program would be employees of industry and not of the Workers' Compensation Board. Industry was invited to nominate participants in these courses to be trained to do industrial audiometry at their place of work. Since September 1975, almost twelve hundred technicians have been trained, although only about six hundred are actively engaged in audiometric testing at this time.

The training course is a very intensive two and a half day course. Emphasis is placed on the practical techniques of hearing testing, counselling and the accurate recording of results. The Industrial Audiometric Program is based on obtaining reliable thresholds down to 0 dBHL at 500, 1000, 2000, 3000, 4000, 6000 and 8000 Hz, although with the advent of a number of audiometers on the market which do not have the 8000 Hz frequency, thresholds at this frequency are not always obtainable.

The vital importance of counselling the worker about the results of his hearing test and the importance of wearing hearing protection regularly where it is required are also very strongly stressed, with the result that there has been a very widespread acceptance of the wearing of personal hearing protection by workers in industry in B.C.

While the wearing of personal hearing protection ought not to be and is not regarded by the WCB as a permanent solution to the prevention of occupational hearing loss, there can be no doubt that at the present time it is the first and may be the only line of defence against hazardous noise. Noise control is the ideal solution and much effort is being expended by the Prevention Services Department of the Board in providing industry with the necessary information to apply this solution. However, personal hearing protection will be with us for a long time as it provides immediate protection to the worker. An important point to be realized is that occupational hearing loss ceases as soon as excessive noise is prevented from reaching the ear. Properly selected and faithfully worn hearing protection will provide adequate protection in almost any situation in any industry. Meanwhile, noise control efforts can continue, knowing that the worker is not suffering any further hearing loss.

From the outset of the Industrial Audiometric Program, it was envisaged that the Hearing Branch would function as a data centre and clearing house for industrial audiometric information. To fill this requirement and bearing in mind that there may be as many as 250,000 workers exposed to hazardous noise in the Province being tested annually, it was decided, with the co-operation of the Data Processing Department of the WCB, to embark upon a program of computer storage of industrial audiometric data.

In view of the large amount of data to be collected annually, a pilot study to test the feasibility of optical scan entry of data into the computer was carried out. This was completed successfully using a prototype optically readable industrial audiometric form which also retained a strong similarity to the customary graphic representation of the audiogram. It was thought to be important for the technicians to be able to counsel their workers with regards to the results of their tests in a graphic presentation which at the same time would be compatible with the optical scanner. The ultimate aim being to avoid the transfer of information from one document to another either by technicians or by keypunch operators. The evolution of this form is now completed and, besides the graphic representation of the audiogram, it also includes medical history questions, noise exposure questions, and hearing protection information. All of the information on the form can be read by an optical scanner and entered into the computer data bank. Periodic summaries of this information are sent out to industry for them to monitor the effectiveness of their hearing conservation programs, but no personal medical history information is ever divulged to a worker's employer.

Education of workers and employers to the hazards of noise is an essential ingredient of any hearing conservation program. As previously indicated, while we regard the counselling of the worker about his audiometric results as being the most potent and effective tool in alerting the worker to the deleterious effect of noise on his hearing and to the need for the wearing of personal protection, nevertheless a good deal of time and effort has also been put into the education of the worker and his employer through formal presentations.

It began with a seminar sponsored jointly by the Workers' Compensation Board and the British Columbia Medical Association under the title "Noise Abatement in the 70's" held in September 1971. This two day seminar dealt with problems arising from industrial noise exposure. Since that time there have been several series of smaller seminars for industry, unions and other organizations requiring information on this

problem. A follow-up to the initial seminar was held in November 1980 under the title "Challenge of the 80's". Among other things, this summarized the present status of occupational hearing loss in the Province and dealt in detail with noise control.

The staff of the Hearing Branch consists of two physicians, seven audiologists, a research associate, two noise assessors, two claims adjudicators, and last but by no means least, technical and clerical staff necessary to assist in the activities of the Hearing Branch. Altogether, thirty five people deal with all of the problems related to hearing conservation and claims for occupational hearing loss for the whole of the Province. The centre is located at 10551 Shellbridge Way, Richmond, B.C., V6X 2X1, telephone number 273-3878. A series of publications are also available including a booklet "Hear Today, Hear Tomorrow" which contains information on hearing protection, written in a non-technical style. A new listing of all the types of hearing protection available in the Province together with attenuation data, CSA rating, and a listing of suppliers and the lines they carry has just been published. Two brochures dealing specifically with industrial audiometry are "Industrial Audiometry How and Why" and "Requirements for Industrial Audiometry". The former is an explanation to the worker of the reasons for having his hearing tested as part of the Industrial Audiometric Program. It also explains the questions asked in relation to the medical history. The latter publication cites technical information required for setting up an industrial audiometric facility. These publications are supported by a series of slide/tape presentations and brochures which are always available to any interested party.

Little has been said about the activities of the Hearing Branch in relation to claims for occupational hearing loss. While the rehabilitation and compensation of the worker with a hearing loss caused by noise at work is a very important function of the Hearing Branch, it is hoped that in the long-term the Board's Hearing Conservation Program will result in a steady diminution in the amount of effort required to help these individuals. Since the Hearing Branch opened in 1975, over 7,600 claims have been received and dealt with. Over 5,300 of these workers have been fitted with hearing aids and a lesser number have received financial compensation for loss of hearing. The extent of the effort required to assess, adjudicate and rehabilitate these claimants and the importance of the work is in no way related to the space devoted to it in this article. However, it is regarded by all concerned as a subsidiary but very necessary effort in relation to our hearing conservation activities. It is interesting to note that, despite the increase in the workforce in British Columbia and despite the increasing number of workers who are being tested annually at work, the number of claims received continues to decrease slowly but surely. In the first month of operations, September 1975, sixty five claims were received. By March of 1977, it rose to one hundred and eighty six in that month. In June 1981 ninety four new claims were received. An analysis of the last three years data indicates a consistent decline in the number of new claims over that period. We dare to hope that this is an indication of a genuine decline in the incidence of occupational hearing loss!

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