



---

# Noise Induced Hearing Loss

Audiometric Officer Testing Manual

August 2011

## **Acknowledgements**

WorkCover WA thanks those involved in the Noise Induced Hearing Loss Approved Procedures Working Party in the development of this publication.

## **Suggested Citation**

WorkCover WA (2006) Noise Induced Hearing Loss. Audiometric Officer Testing Manual, Perth, Western Australia: Western Australian Government.

Any queries or comments on this publication should be directed to:

Title:            Manager  
Branch         Scheme Information Services  
Division        Noise Induced Hearing Loss  
Email:         postmaster@workcover.wa.gov.au  
Phone:         08 9388 5555  
Fax:            08 9388 5550

There is no objection to this publication being copied in whole or part, provided there is due acknowledgement of any material quoted from the publication.

Published by the Western Australian Government

**April 2007**

# Contents

<b>1. Introduction</b>	<b>1</b>
<b>2. The legislation – What you need to know</b>	<b>2</b>
2.1 Who needs to be tested?	2
2.2 When do they need to be tested?	2
2.2.1 Baseline tests	2
2.2.2 Subsequent tests	2
2.2.3 Retirement	2
2.3 Who pays the cost of having a test?	3
2.4 When is compensation paid?	3
2.4.1 Calculation of hearing loss	3
2.4.2 Retirement	3
2.5 Arranging the test	4
2.5.1 Notifying the worker	4
2.5.2 Sixteen hours of quiet	4
2.5.3 Worker with blocked ears before the test	4
2.6 What happens to the results?	4
2.7 What happens if the worker is found to have a hearing loss?	4
2.7.1 Waugh and Macrae criteria	5
2.7.2 Baseline tests	5
2.7.3 Subsequent tests	5
2.8 Can the results of the test be disputed?	5
<b>3. Testers</b>	<b>6</b>
3.1 How do I become an approved tester?	6
3.1.1 Air conduction testing approval	6
3.1.2 Full Audiological testers	6
3.2 How do I apply for approval?	7
3.3 Once I'm approved as a tester, will I always be approved?	7
<b>4. Equipment</b>	<b>9</b>
4.1 Audiometers	9
4.1.1 Will any audiometer be accepted for testing?	9
4.1.2 How do I get my audiometer approved?	10
4.1.3 I will be conducting full audiological assessments.	10
4.2 Testing booths/environments	11
4.2.1 Do I need to use a soundproof booth to do the tests?	11
4.2.2 How do I know if my testing booth/environment will comply with the standard?	11
4.2.3 Once my testing booth/environment has been approved, will it always be approved?	11
4.2.4 What happens in the case of a mobile booth?	12
4.2.5 I'm confused about the earphone/cushion enclosure combination.	12
<b>5. Testing procedures</b>	<b>13</b>

5.1	What is required?	13
5.1.1	Check the audiometer	13
5.1.2	Check the background noise levels	13
5.1.3	Examine the worker's ears	13
5.1.4	Requirement that the worker has 16 hours of quiet	14
5.2	Air conduction audiograms	14
5.2.1	Test procedure using manual audiometer only	14
5.2.2	Check for Waugh and Macrae criteria	15
5.2.3	Calculation of the percentage loss of hearing	16
5.2.4	Employer WorkCover WA Number	16
5.2.5	Communication of results to worker	16
5.2.6	Communication of results to WorkCover WA	16
5.2.7	Worker with a disability	17
5.2.8	Subsequent tests	17
5.2.9	Pre-Employment hearing tests	17
5.2.10	Mines Workers Health Surveillance (MWH) hearing tests	17
5.2.11	Release of the test results	17
<b>6.</b>	<b>Directory of standard forms</b>	<b>18</b>
6.1	How do I obtain more forms if I need them	18
<b>7.</b>	<b>Frequently asked questions</b>	<b>19</b>
7.1	Are there any fines if the tests are not completed?	19
7.2	As an air conduction tester, what are my responsibilities to workers who meet Waugh and Macrae criteria 1, 2 or 3 on the Baseline test?	19
7.3	Will WorkCover WA be inspecting testing facilities and equipment?	19
7.4	Can a worker keep working with hearing protection being worn and still meet the requirement of having had 16 hours of quiet?	19
7.5	Can you fully explain what is meant by a prescribed workplace?	19
7.6	What makes up the 'Baseline' test and who pays for it?	21
7.7	If a worker meets Waugh and Macrae criteria # 4, who pays for the doctor's fees?	21
7.8	Can I get my approval numbers over the telephone?	21
7.9	Can a pre-employment audiometric test be performed at the same time as a Workers' Compensation assessment?	21
7.10	Can a hearing test be performed on a worker while he is wearing his hearing aids?	21
7.11	Who can conduct a Mine Workers Health Surveillance (MWHS) hearing test?	21
<b>8.</b>	<b>Code of conduct</b>	<b>23</b>
8.1	Air conduction testers	23
8.1.1	Communication of results	23
8.1.2	Storage of test results	23
8.1.3	Information to workers about hearing aids	23
8.1.4	Advice to workers about medical conditions	24

# 1. Introduction

This manual has been prepared to assist you in conducting audiometric tests under the provisions of Schedule 7 of the Workers' Compensation and Injury Management Act, 1981 and the Workers' Compensation and Injury Management Regulations 1982. The manual is divided into six main sections dealing with:

- The Legislation
- Testers
- Equipment
- Testing Procedures
- General Information
- Code of Conduct

## 2. The legislation – What you need to know

### 2.1 Who needs to be tested?

All workers employed in a 'prescribed workplace' must undergo 'Baseline' audiometric testing within twelve months of commencing work at the prescribed workplace.

A 'prescribed workplace' is a workplace where a worker receives a representative daily noise dose (8hr day) of 90dB(A) or its equivalent, or a peak noise exposure of 140dB (lin) at any time. (See section 7.5 for further information.)

### 2.2 When do they need to be tested?

#### 2.2.1 Baseline tests

All workers who have never had a 'Baseline' test who begin working for the first time in a 'prescribed workplace' must have a 'Baseline' test within twelve months of starting the job.

#### 2.2.2 Subsequent tests

All workers continuing employment in a 'prescribed workplace' may request a hearing test every year, which the employer is required to pay for. The request should be in writing and the employer must arrange the test within one month of the request.

When a worker leaves a job they are not required to have an exit test, but it is recommended that the employer arrange this.

If a worker has undergone a test within 3 months of starting a new job, that test may be taken as occurring at the time the worker started the new job and the worker would not need to be re-tested. This is providing the test was conducted in accordance with WorkCover WA testing procedures.

#### 2.2.3 Retirement

Workers who are or retiring should have a hearing test at the time they leave their job, unless they have had a test within 3 months of leaving the job.

If a retired worker returns to work in a 'prescribed workplace', they must have a hearing test within three months of starting the job.

## 2.3 Who pays the cost of having a test?

The employer is required to initiate and pay for the cost of all 'Baseline' tests (which includes the baseline air conduction test and full audiological assessment if required) as well as one subsequent test each year. (This may include a full audiological assessment and an Otorhinolaryngological consultation if a potential Noise Induced Hearing Loss claim is identified).

The employer is also required to meet all reasonable travel costs and expenses required in getting to the test facility.

A worker can request a test more frequently than every 12 months but he/she would be required to meet the cost of these tests.

## 2.4 When is compensation paid?

When a worker is found to have a 10% or greater hearing loss over the amount of hearing loss present at the 'Baseline' test, WorkCover WA arranges for further investigations to determine compensation eligibility.

*For example*

*The worker shows 5% loss at the time of the 'Baseline' test.*

*The worker has a hearing test every year and after 15 years it was found that the worker has a 15% loss. Providing an Audiologist confirms the loss, an appointment is made with an Otorhinolaryngologist.*

*The Otorhinolaryngologist determines the amount of hearing loss due to occupational noise exposure and if 10% or greater, the worker is able to claim compensation for his/her **noise induced hearing loss**.*

*Compensation is then paid for every confirmed additional 5% occupational noise induced hearing loss of hearing beyond the initial 10% loss.*

### 2.4.1 Calculation of hearing loss

The method of determining percentage loss of hearing occurring during the interval between two audiometric tests shall be by subtraction.

### 2.4.2 Retirement

Compensation is paid up to 65 years of age or upon retirement, whichever comes first.

If a worker at retirement has had a successful claim for occupational noise induced hearing loss, then that worker is entitled to compensation for whatever occupational noise induced hearing loss is present, over the initial 10% loss at the time of retirement, even if it is less than 5%.

## 2.5 Arranging the test

The employer must arrange a test within one month of the worker requesting it.

### 2.5.1 Notifying the worker

The employer must give written notice to the worker on the prescribed **Form 18** of the date, place and time of the test and pre-test requirements. It is the tester's responsibility to provide employers with these forms.

### 2.5.2 Sixteen hours of quiet

All workers are required to have 16 hours of quiet before their hearing test. This is defined as not being exposed to more than 80dB(A).

It is the employer's responsibility to ensure that the worker receives 16 hours of quiet and it is the worker's responsibility to not knowingly expose him/herself to noise above 80dB(A). (See section 7.4 for further information.)

### 2.5.3 Worker with blocked ears before the test

#### Waugh and Macrae criteria number 4

The tester must check the ears to make sure that the worker does not have wax or other temporary ear problems which will invalidate the test. This is known as meeting Waugh and Macrae criteria number 4 and will be explained further in later sections.

If the worker meets Waugh and Macrae criteria number 4 the tester must refer them to a doctor for treatment. The **worker** is responsible for any costs involved in this treatment. The tester must recheck the ears and the test may be conducted only when the ear problem has been resolved.

## 2.6 What happens to the results?

The tester must notify the worker of their results within one month of the test being conducted. (*Form 411 has been provided for this purpose.*)

The tester must enter the results in the WorkCover WA online application within one month of the test being completed.

The results are stored until the day after the worker's 70th birthday.

All results are to be kept **strictly confidential**.

If the results are needed for hearing conservation purposes, or requested by their employer written permission must be obtained from the worker before results can be released for this purpose. (*Form 406 has been provided for this purpose.*)

## 2.7 What happens if the worker is found to have a hearing loss?

While it is the tester's responsibility to explain the test results to the worker, statements regarding compensation eligibility should not be made. It is WorkCover's responsibility to identify and advise the worker of a potential noise induced hearing loss claim.

### 2.7.1 *Waugh and Macrae criteria*

The worker must meet Waugh and Macrae criteria number 1, 2, or 3 (at the 'Baseline' test only) before they are considered to require further assessment. These criteria are explained in section 5.2.2.

### 2.7.2 *Baseline tests*

If the worker meets any of these criteria, it is the **tester's** responsibility to make sure the worker is referred on for further testing by an approved Audiologist. To ensure that this occurs the tester must notify the employer that further testing is required and supply the employer with a list of audiologists approved to do these tests. (*Form 409, Form 410 and the WorkCover WA Directory of Service Providers is provided for this purpose, a copy of the Form 18 should also be provided*). The tester must enter the results into the WorkCover WA online application within one month of the test being conducted.

### 2.7.3 *Subsequent tests*

The tester only needs to enter Subsequent test results into the WorkCover WA online application.

## **2.8 Can the results of the test be disputed?**

Both the worker and the employer can dispute the test results on either audiological or medical grounds within three months of being informed of the results. A worker or employer who disputes the results of an audiometric test shall give WorkCover WA notice in the form of a Form 21.

## 3. Testers

### 3.1 How do I become an approved tester?

#### 3.1.1 Air conduction testing approval

For persons to be approved by the Chief Executive Officer to conduct Air Conduction tests, they must satisfy the following requirements: -

- a) Have successfully completed an audiometric officer course offered by an approved course provider
- b) Have successfully completed an audiometric officer's online training course and
- c) Received a WorkCover WA Service Provider approval number.

Only on completion of the above will the appropriate security access be provided.

- d) Be registered with the Medical Board of Western Australia in the specialty of Otorhinolaryngology; or
- e) Be eligible for Full/Provisional Membership of the Audiological Society of Australia

Persons whose approval has been cancelled and has lapsed by more than two years must undergo the full audiometric officer course offered by an approved course provider.

#### 3.1.2 Full Audiological testers

For persons to be approved by the Chief Executive Officer to conduct Full Audiological assessments, they must satisfy the following requirements:

1. Be eligible for Full Membership of the Audiological Society of Australia or an approved equivalent. An approved equivalent would be as follows: -

Satisfactory completion of a Degree or Post Graduate Diploma in Audiology, (the contents of the Degree or Post Graduate Diploma must satisfy the requirements of the Audiological Society of Australia AND the Degree or Post Graduate Diploma must have required the person to complete 200 hours of undergraduate clinical practicum.

**Plus**, the person must have completed one full year of Post Graduate supervised clinical practicum; or

2. Be a Medical Practitioner registered with the Medical Board of Western Australia in the specialty of Otorhinolaryngology.
3. Have successfully completed the one-day training session covering Noise Induced Hearing Loss legislation and the online application.

### 3.2 How do I apply for approval?

Air conduction testers must meet the requirements listed at the beginning of this section. Audiologists and Otorhinolaryngologists may contact the Noise Induced Hearing Loss Section at WorkCover WA on (08) 9388 5555 to request an application form.

If you meet the necessary criteria you will be sent a Certificate of Approval. **Until you receive your Certificate of Approval, tests conducted for WorkCover WA legislation purposes will not be accepted.**

### 3.3 Once I'm approved as a tester, will I always be approved?

Cancellation of approval **may** occur for the following reasons and apply to **all** approved persons unless otherwise stated:

- Conducting less than 12 twelve WorkCover WA tests per year (Air conduction testers only). Non-WorkCover WA tests are not acceptable.
- Conducting 50 or more tests in a day and cannot adequately explain how this was achieved.
- Failure to otoscopically examine the worker's ears prior to the test.
- Failure to notify the employer of the requirement for baseline full audiological testing following identification of when Waugh and Macrae criteria #1, 2, 3 have been met.
- Creating an unacceptable number of workers duplicated in the database. This being 15% or greater than the total number of tests conducted within any given period.
- Submitting an unacceptable number of test results outside the required one-month time frame. This being 15% or greater than the total number of tests conducted within any given period.
- Producing test results, which are unreliable or unsatisfactory in the opinion of the Chief Executive Officer.
- Submitting a pre-employment audiometric test related to a person who is not subsequently employed.
- Upon substantiation of a formal complaint against a tester.
- Conducting him/herself in an unacceptable manner.
- Any other reason given by the Chief Executive Officer.

**Audiologists only**

Submitting an unacceptable number of inadequate or unsatisfactory full audiological reports. This being 15% or greater than the total number of tests conducted within any given period.

Submitting an unacceptable number of incomplete Forms 19A/B.

Conducting tests with equipment or in an environment that is not approved.

**In addition to the monitoring of testers for the above, WorkCover WA will undertake random visits to air conduction testers in order to observe testing techniques and audit paperwork to ensure that testing is being conducted in accordance with the Noise Induced Hearing Loss Approved Procedures.**

Note: Persons who have their approval cancelled will be eligible to have their approval reinstated after a one-year period, by written application to the Chief Executive Officer. Air conduction testers must also successfully undertake a written and practical examination set by the Chief Executive Officer. Three (3) cancellations will result in permanent exclusion from application.

## 4. Equipment

### 4.1 Audiometers

All audiometers must be approved by the Chief Executive Officer and then issued with a Certificate of Approval before WorkCover WA can accept the results obtained from them.

#### 4.1.1 Will any audiometer be accepted for testing?

An approved audiometer shall meet or exceed the requirements of the relevant clauses of Australian Standard 2586-1983, Audiometers and the minimum WorkCover WA requirements listed below. The Chief Executive Officer must approve all audiometers in writing. The relevant clauses/sub clauses are:

6	7.2	7.3	7.4
7.5	8.1.1	8.1.3	8.1.4
8.2	8.3	9.1	9.2
9.4.1	9.4.3	9.5	9.6
11	12		

Only earphone/cushion earphone/enclosure combinations listed in Appendix C of the Australian Standard AS/NZS 1269.4:1998 will be approved. ER – 3A insert earphones and any earphone/enclosure combination that requires correction figures to be applied must not be used by Air Conduction testers for WorkCover WA audiometric testing.

Minimum WorkCover WA requirements:

- a) Air-conduction screening only:
  - Two earphones
  - Air Conduction Test frequencies: - 500, 1000, 2000, 3000, 4000, 6000, 8000Hz
  - Output: - 95dB at frequencies of 500, 1000, 2000, 3000, 4000, 6000Hz and 80dB at 8000Hz.
  - Tone presentation
  - Subject's response system (e.g. indicator button)
  
- b) Full audiological assessments:
  - Two earphones – noise excluding headsets must not be used for full audiological assessments.
  - Air Conduction Test frequencies: - 500, 1000, 1500, 2000, 3000, 4000, 6000, 8000Hz
  - Output: - 100 dB at frequencies 500, 1000, 1500, 2000, 3000, 4000, 6000Hz and 90dB at 8000Hz
  - Bone Conduction Test frequencies: - 500, 1000, 1500, 2000, 3000, 4000Hz
  - Output: - 60dB at all frequencies
  - Narrow-band masking noise; Input for external signals, e.g., speech: Tone presentation; Subject's response system;

Routing of masking: - Contralateral earphone

- c) Recommended additional features for full audiological assessments:  
 Insert earphone for masking bone conduction signals; Electrical signal output;  
 Signal indicator/ audible monitoring of signal; Speech communication: - Subject  
 to operator; Operator to subject.

#### 4.1.2 How do I get my audiometer approved?

An approved Calibration Laboratory must calibrate audiometers annually and Form 407 must be completed in full. The Form 407 is to be forwarded to WorkCover WA by the audiometer owner or the approved tester before the Chief Executive Officer can give approval.

WorkCover WA will notify the audiometer owner that the audiometer is due for annual calibration two months before the calibration expires.

WorkCover WA will provide you with a list of approved calibration laboratories.

#### 4.1.3 I will be conducting full audiological assessments.

Is there anything special I need to know in relation to my testing equipment?

The approved person must ensure that any Audiometers used for other audiological tests (masking, bone conduction, speech, etc) perform to the standard of the relevant clauses of Australian Standard 2586-1983.

The relevant clauses are:

- a) For masking:

8.3;	9.5
------	-----

- b) For Bone Conduction Audiometry:

8.1.4;	9.2;	11.2.3.
--------	------	---------

- c) For speech audiometry:

8.2
-----

Sub clause 9.3 in conjunction with calibration information as supplied by the equipment manufacturer.

You must also ensure that all other equipment used to perform a full audiological assessment must be calibrated annually by an approved Calibration Laboratory using the manufacturers recommended procedures.

## 4.2 Testing booths/environments

### 4.2.1 Do I need to use a soundproof booth to do the tests?

You may not need a sound-proof booth but you will need to ensure that background noise levels in the room where tests are to be conducted **do not** exceed those values listed in table Appendix C of Australian Standard AS/NZS 1269.4:1998 for the type of earphone/cushion enclosure combination connected to the audiometer used for the testing.

Because of this requirement you may find that you will need to use a sound proof booth.

### 4.2.2 How do I know if my testing booth/environment will comply with the standard?

All testing booths/environments must be issued with a Certificate of Approval from WorkCover WA which must indicate the earphone/cushion combination which is acceptable or the results obtained from tests conducted in these testing booths/environment will not be accepted by WorkCover WA for the purposes of the legislation.

To be eligible for approval, a testing booth/environment must be evaluated by an approved Department of Consumer and Employment Protection (DOCEP), Resources Safety Division Noise Officer, or persons who are eligible for full membership of the Australian Acoustical Society. The testing booth/environment must comply with the Australian Standard AS/NZS 1269.4:1998 for the type of earphone/cushion enclosure attached to the audiometer.

A list of approved noise officers is available from DOCEP. The noise officer must provide the booth owner with a completed Form **408**. This form must then be submitted it to WorkCover WA before an approval certificate will be issued.

For full audiological assessments at either the baseline or subsequent levels, the requirement for bone conduction assessment will almost certainly mean that the testing environment has to meet the greatest level of attenuation required in the above standards.

### 4.2.3 Once my testing booth/environment has been approved, will it always be approved?

Audiometric Booths are subject to deterioration over time in that the effectiveness of door seals is reduced and noise levels of fans can increase due to mechanical wear. For this reason all fixed booths are to be tested every three years. However, if the booth is relocated, or the environment surrounding it is altered in such a way that it may affect the background noise levels, then it must be issued with a new Certificate of Approval following assessment by an approved noise officer (as described in clause 4.2.2).

Cancellation of approval may occur if, for any reason, the testing booth/environment fails to continue to meet the standards by which it was approved.

Cancellation of approval may occur for any other reason given by the Chief Executive Officer.

#### 4.2.4 *What happens in the case of a mobile booth?*

Mobile Audiometric Booths are likely to deteriorate far more rapidly than fixed booths and therefore should be re-evaluated every two years. WorkCover WA will issue a Certificate of Approval once the booth has been assessed in the approved manner. The tester must ensure that the booth continues to comply with the values shown in Appendix C of the above Australian Standards for the earphone/cushion combination attached to the audiometer each time the booth is moved to a new location. For the purposes of the legislation, this must be done using a sound level meter with an Octave Band Filter set to test at the required frequencies.

#### 4.2.5 *I'm confused about the earphone/cushion enclosure combination.*

Does it mean that once my testing booth/environment is approved I can use any type of headphones on my audiometer?

No. You will only be able to use the earphone/cushion combination(s) specified on your testing booth/environment's approval certificate, which is issued by WorkCover. The audiometer must only be used with the earphone/cushion/enclosure combination with which it was calibrated.

Only earphone/cushion earphone/enclosure combinations listed in Appendix C of the Standard AS/NZS 1269.4:1998 will be approved.

If you use the wrong type of earphone, WorkCover WA will not accept the results of the tests.

If you are unsure, contact the Noise Induced Hearing Loss Section at WorkCover WA for help.

Note: Certificates for booths and audiometers should be clearly displayed on or near the testing environment.

## 5. Testing procedures

### 5.1 What is required?

An approved person shall carry out an audiometric test:

- Using an audiometer which meets the standards specified in writing by the Chief Executive Officer
- In an approved hearing booth or other approved testing environment.

#### 5.1.1 Check the audiometer

An approved person shall:

Check the audiometer on each day of use, both before and after the series of measurements is carried out and after any relocation of the audiometer to ensure that the audiometer is in satisfactory working order; and

Ensure that the audiometer has been calibrated at an approved calibration laboratory within 12 months preceding each day of use and that the audiometric officer has received a copy of the report prepared on that calibration.

#### 5.1.2 Check the background noise levels

An approved person shall:

Ensure that the background noise levels during the testing of the hearing of a worker do not exceed those values listed in Appendix C of Australian Standard 1269.4:1998 for the type of earphone/cushion or earphone enclosure combination connected to the audiometer used for the testing.

#### 5.1.3 Examine the worker's ears

An approved person must examine the ears of a worker prior to conducting the hearing test. This examination must include an otoscopic examination of the ear canal and eardrum (if it is visible) as well as a visual inspection of the ear (pinna).

If there is any discharge from the ear, occlusion of the ear canal by wax, a foreign body in the ear canal, or any other reason which may cause a temporary hearing loss, the hearing test must not proceed. The worker must be referred to a Medical Practitioner for treatment to resolve the problem. Once the worker's Medical Practitioner is satisfied that the condition no longer exists, the worker may proceed with the hearing test. The approved person must, however, examine the ears of a worker before each test is conducted.

#### 5.1.4 Requirement that the worker has 16 hours of quiet

An approved person must ensure that the worker has not been exposed to noise levels above 80dB(A) for 16 hours prior to the test taking place. If in the opinion of the tester, this has not occurred then the test must not proceed and another test must be arranged.

## 5.2 Air conduction audiograms

If you are conducting a 'Baseline' test, use *Form 19A* (blue form) to record your results. If you are conducting a 'Subsequent' test, use *Form 19B* to record your results. As of 01 July 1999 air conduction test results will no longer be accepted in the hard copy format of the Forms 19A/B. All air conduction test results must be entered in the WorkCover WA NIHL online application.

### **Workers require only one baseline test in their lifetime.**

Testers must search the WorkCover WA online application to check whether a worker has already had a baseline test.

#### 5.2.1 Test procedure using manual audiometer only

Air conduction or screening audiometry shall be carried out as follows:

- a) Tell the person to be tested that he or she is going to hear a series of music like tones through the earphone (right or left). Instruct the subject to listen carefully and signal by either raising a finger or pressing a button each time the subject hears one of these sounds, no matter how faint it is.
- b) Place the earphone firmly over the ears with the red phone over the right ear and the blue phone over the left ear. Make sure that the earphones are level with the entrance to the ear canal and ensure that the headset stays firmly in place.
- c) Where one ear is known to be significantly better than the other, commence by testing that ear. If there is no difference between ears, begin with the right ear and commence testing at 1,000Hz.
- d) With the hearing level dial set at 0dB, hold the interrupter switch in the on position and turn the hearing level dial at a moderate speed so that the level of sound is gradually increased, or proceed in the steps of 10dB increments. As soon as the subject responds, release the interrupter switch.
- e) Turn the hearing level dial down 10dB and present a short (approximately 1 second) burst of tone.
- f) If the subject responds reduce the tone level a further 10dB and present another tone. Repeat this procedure until the subject fails to respond.
- g) When the subject fails to respond, increase the level of the tone 5dB and test again presenting a total of three tone bursts. If the subject responds to only one of these three tone bursts, turn the hearing level dial up another 5dB and present another three bursts.
- h) If the subject responds to two of the tone bursts, decrease the level of the tone by 5dB and again present three tone bursts. The lowest level at which two out of three bursts are heard is taken as the subject's threshold hearing level.

- i) Test for frequencies above 1,000Hz in the same way then retest at 1,000Hz. On retest, the levels at 1,000Hz should agree, if not, the test should be repeated until agreement is obtained (within  $\pm 5$ dB).
- j) Finally, test for the frequency of 500Hz.
- k) Remove the headphones from the subject's head.

Note: If the test is conducted in accordance with the above procedure and the audiometer does not possess a 1,500Hz tone, the hearing threshold for that frequency shall be calculated by drawing a straight line on an audiogram connecting the points of threshold for 1,000Hz and 2,000Hz. The point of intersection with the 1,500Hz line is then adjusted to the nearest 5dB increment above.

If the worker fails to respond to the maximum dB level of the audiometer, the affected frequencies should be entered as the maximum output of the audiometer and verification should be entered in the comment field, (e.g. "Did not respond to maximum level at 3K and 4K frequencies in left ear").

### 5.2.2 Check for Waugh and Macrae criteria

#### a) **Waugh and Macrae criteria # 1, 2 and 3**

An approved person shall examine the results of a hearing test to determine if the worker has met one of the following three criteria

#### b) **Waugh and Macrae criteria # 1**

Hearing level at 500Hz or 1,000Hz greater than or equal to 25dB.

#### c) **Waugh and Macrae criteria # 2**

Hearing level at 2,000Hz greater than or equal to 30dB at less than or equal to 40 years of age.

Greater than or equal to 35dB at 41-45 years of age

Greater than or equal to 40dB at 46-50 years of age

Greater than or equal to 45dB at 51-60 years of age

Greater than or equal to 50dB at greater than 60 years of age

#### d) **Waugh and Macrae criteria # 3**

Difference in hearing level between ears at 500, 1,000 or 2,000Hz greater than or equal to 25dB; or

Difference in hearing level between ears at 3,000, 4,000 or 6,000Hz greater than or equal to 35dB.

If the worker has met any of these criteria, then the tester must:

**In the case of a 'baseline' test** notify the employer (*Form 409*) and the worker that a full audiological assessment will need to occur to complete the Baseline test. The results must be entered into the WorkCover WA online application within one month.

**In the case of a 'subsequent' test** the results must be entered into the WorkCover WA online application within one month.

### 5.2.3 Calculation of the percentage loss of hearing

This is automatically calculated by the WorkCover WA online system using the hearing loss tables RB and EB published in Appendices 3 and 7 of Report No. 118 of the National Acoustic Laboratories.

**You do not need to calculate the PLH.**

### 5.2.4 Employer WorkCover WA Number

In January 1995 WorkCover WA introduced the WorkCover WA number for employers. It relates to the 'employer' covered by the workers' compensation policy, and may therefore involve more than one legal entity (e.g., a partnership of individuals or companies) if they are covered by the one policy. Tests cannot be entered online without this number.

### 5.2.5 Communication of results to worker

The tester must notify the worker of their results within one month of the test taking place. (*Form 411* is provided for this purpose and can be printed from the online application after the test is entered).

### 5.2.6 Communication of results to WorkCover WA

As of 01 July 1999 the approved person must enter all air conduction test results via the Internet through the Noise Induced Hearing Loss on-line application. (A separate user manual is available through this application).

Some important points to remember:

- The employer's WorkCover WA number must be obtained directly from the employer before test results may be entered.
- A thorough search of the database is to be made for each worker to determine whether the test is a 'Baseline' or 'Subsequent'. If the worker has changed his/her name since the last test, either by getting married or for other reasons, the original surname should be highlighted and changed to the new name. (Please refer to the search procedure in the online manual).
- Please be careful in recording the predominant industry of the employer when adding a new location e.g., a gold mining company should be recorded as "Gold Mining", not just "mining".
- In the case of an employer who is involved in more than one industry, record the major activity in which the worker is employed.
- Please use caution when recording the worker's occupation. You should record their usual or main occupation (e.g., a worker may be working as a cleaner at the time of the test but is usually employed as a carpenter. You should record carpenter as their occupation).

- The tester must enter the results into the WorkCover WA NIHL application within **one** month of the test being conducted.

**All test results must be entered even if the worker has met any Waugh and Macrae criteria and, in the case of a 'Baseline' test, is being sent for further testing.**

### 5.2.7 Worker with a disability

If a tester is unable to obtain a test result using the audiometric test procedure referred to in section 5.2, due to either a mental or physical disability, then the worker must be referred to a person who is approved to conduct full audiological assessments. The approved person must also have had at least five years post graduate experience and have the necessary testing facilities to be able to adequately assess the worker.

A list of Approved Audiologists can be found in the WorkCover WA Noise Induced Hearing Loss Directory of Service Providers.

### 5.2.8 Subsequent tests

- 1 The results of all 'Subsequent' tests must be entered into the WorkCover WA online application.
- 2 WorkCover WA will refer for further testing all those workers who:
  - a) Have suffered a further 10% loss of hearing (calculated from the Percentage Loss of Hearing) from the 'Baseline' test;
  - b) Have suffered a further 5% loss of hearing (calculated from the Percentage Loss of Hearing) following a successful election under Section 31E;
  - c) Are either retiring or turning 65 and who have already had a successful election under Section 31E.

### 5.2.9 Pre-Employment hearing tests

A hearing test conducted as part of a pre-employment medical assessment can be submitted as a WorkCover WA hearing test provided notification is received from the employer that the worker has been employed and the hearing test has been completed within three months of the date the worker started work. Also pre-employment hearing tests must be submitted to WorkCover WA within one month of the date of test.

### 5.2.10 Mines Workers Health Surveillance (MWH) hearing tests

As of 1 May 2006 all hearing tests conducted as part of a Mine Workers Health Surveillance programme must be conducted as either a baseline or subsequent audiometric test in accordance with WorkCover WA approved procedures.

### 5.2.11 Release of the test results

An employer may have access to a worker's test results only if the worker has given the tester written permission.

Form 406 has been provided for this purpose.

## 6. Directory of standard forms

- Form 407** Audiometer calibration form to be completed by an approved calibration laboratory and sent to WorkCover.
- Form 408** Testing booth/environment form to be completed by an approved noise officer and sent to WorkCover.
- Form 18** Authorisation from employer to worker informing them of the date, time and place of the test, as well as pre-test requirements for either air conduction or full audiological testing.
- Form 19A** Record of a worker's 'Baseline' test results (currently blue). (As of 01 July 1999, used only for full audiological assessments).
- Form 19B** Record of a worker's 'Subsequent' test results. (As of 01 July 1999, used only for full-audiological assessments).

Note: Forms 19A/B are no longer accepted in hard copy format for AIR CONDUCTION TESTS. Full audiological test results must be forwarded to WorkCover WA within one month of the test being conducted.

The following forms are available to download from the online application. Testers are required to use these forms as a guide and may reproduce them with their own letterheads and wording. The contents on each form however, especially Form 411 should not be altered.

- Form 406** Consent form from worker to tester releasing the test results for the purposes of hearing conservation.
- Form 409** Letter from air conduction tester to employer informing them that a worker requires a full audiological assessment.
- Form 410** Referral from an employer to an approved audiologist requesting a full audiological assessment of a worker's hearing. (Tester to provide this form to the employer when Form 409 is sent).
- Form 411** Record of a worker's hearing test results, which are given to the worker by the tester within **one** month of the test being conducted.

### 6.1 How do I obtain more forms if I need them

Forms 18, 19A, 19B, 406, 409, 410 & 411 may be downloaded from the online application and photocopied. The blue form 19A and form 19B will be supplied to Audiologists only when necessary.

## **7. Frequently asked questions**

### **7.1 Are there any fines if the tests are not completed?**

In the case of an employer who fails to Baseline test the hearing of workers who work in a prescribed workplace, the employer is in breach of the Act and as such faces a maximum fine of \$2,000 for each offence.

All breaches of the Act and Regulations should be reported to WorkCover WA in writing, as it is WorkCover's responsibility to impose these fines.

In the case of an approved tester, failure to submit the results to WorkCover WA within one month is in contravention of the Act and subject to a maximum fine of \$2,000 for each offence.

A person shall ensure that the results of any test are not communicated to any other person without written consent of the worker. The penalty is \$1,000 for each offence.

### **7.2 As an air conduction tester, what are my responsibilities to workers who meet Waugh and Macrae criteria 1, 2 or 3 on the Baseline test?**

You should inform the worker that the test results indicate the need for further testing and that the worker's employer will be arranging this.

You must then notify the employer (using Form 409) that a full audiological assessment is required. You must further ensure that the employer has a copy of the Directory of Service Providers or knows where these may be obtained and is also provided a copy of the Form 410. Copies are available from the WorkCover WA online application.

### **7.3 Will WorkCover WA be inspecting testing facilities and equipment?**

WorkCover WA does conduct inspections of all aspects of the testing program to ensure that a high standard of testing is maintained.

### **7.4 Can a worker keep working with hearing protection being worn and still meet the requirement of having had 16 hours of quiet?**

A worker may achieve the requirement of having 16 hours of quiet by wearing hearing protector devices.

However, this practice is only allowed where the worker is working in an environment that does not exceed 90dB(A) and the worker is wearing maximum performance hearing protectors.

If an employer chooses to comply with the requirement of providing 16 hours of quiet by using this method, then the onus of proof that the worker is not being exposed to greater than 80dB(A) is on the employer.

### **7.5 Can you fully explain what is meant by a prescribed workplace?**

For the purposes of compensation, WorkCover WA needs to adopt a definition which will require the testing of all workers who are likely to suffer a 10% or greater hearing loss during their working lives as a result of carrying out their work related duties.

The definition of a prescribed workplace in our regulations 19I refer to an “action level” of:

- a) an  $L_{peak}$  of 140dB(Lin)
- b) a representative  $L_{Aeq,8h}$  of 90dB(A).

“**representative  $L_{Aeq,8h}$** ” means an 8 hour equivalent continuous ‘A’ weighted sound pressure level, determined from the assessment of worker exposures that is typical of the operation, work pattern or process being assessed, as described in AS/NZS 1269.1:1989 Clause 1(a).

AS/NZS 1269.1:1998 Clause 3.7 states “**Representative working day**” - a working day during which noise exposure is representative of employees’ long-term noise exposure.

Note: The representative working day should be made up of segments proportioned in accordance with the employees’ long-term noise exposure. Where the exposure differs markedly from day to day, the assessment takes such variability into account.

This Regulation is understood to refer to a worker’s personal noise dose. Part (a) of the definition indicates that if a worker is likely to be exposed to a peak noise level of 140 decibels or more, for however short a period of time on however few occasions in the course of his current employment, he is working in a prescribed workplace and should be tested.

Part (b) of the definition indicates that a worker is employed in a prescribed workplace if, on a representative working day, taking into consideration his long term noise exposure, he is exposed to a certain level of sound for a given number of hours; this period of time decreases as the volume of sound rises.

The higher the intensity of the noise, the greater the risk of hearing damage occurring. If a worker is exposed to a daily noise dose of 90dB(A) once a year, then testing would not be required. On the other hand, if a worker is likely to be exposed to 140dB peak noise once a year, then testing would be required.

Please note that although a machine may be producing noise over the specified level, the legislation only refers to personal noise dose. For example, if a worker is rotated to another area and hence does not meet the action level (90dB(A) per 8hr day) then there is no requirement to test these workers.

## 7.6 What makes up the 'Baseline' test and who pays for it?

A 'Baseline' test consists of the following:

An air conduction test and a full audiological assessment if Waugh and Macrae criteria 1, 2 or 3 have been met.

These two tests make up the 'Baseline' test, if required. If an employer arranges for a worker to have the air conduction test, it is his/her responsibility to arrange and pay for the other test, if required. This applies even if the worker leaves his employ before both tests have been conducted.

## 7.7 If a worker meets Waugh and Macrae criteria # 4, who pays for the doctor's fees?

If a worker meets Waugh and Macrae criteria # 4 and is referred to their own doctor for treatment, the worker must meet the cost of this treatment.

## 7.8 Can I get my approval numbers over the telephone?

We get many requests for approval numbers to be given over the telephone. Unfortunately, we have no way of verifying the caller's identity. We are therefore unable, in the interests of security, to provide these numbers over the telephone. All approvals will be sent to the approved persons or owners of approved equipment directly.

## 7.9 Can a pre-employment audiometric test be performed at the same time as a Workers' Compensation assessment?

As of 26<sup>th</sup> April 1999 where tests are conducted as part of a pre-employment assessment, only those tests that relate to workers who are subsequently employed are admissible. Any tester who submits a pre-employment audiometric test related to a person who is not subsequently employed may have their WorkCover WA approval withdrawn.

*Further it should be noted that it is the tester's responsibility to ensure a Form 18 is completed for each worker prior to their undergoing a WorkCover WA audiometric test.*

## 7.10 Can a hearing test be performed on a worker while he is wearing his hearing aids?

All workers who present at a test wearing hearing aids must be tested **without** their hearing aids. It is, however, important that you explain the testing procedure and worker's results to the worker while he/she is wearing their hearing aids.

## 7.11 Who can conduct a Mine Workers Health Surveillance (MWHS) hearing test?

A MWHS hearing test must be conducted in accordance with WorkCover WA procedures for audiometric testing. Only an approved Audiometric Officer, Audiologist or Medical Practitioner can conduct a MWHS hearing test.



## 8. Code of conduct

**For persons approved to provide services for the noise induced hearing loss legislation.**

### 8.1 Air conduction testers

#### 8.1.1 Communication of results

The information obtained from conducting an air conduction test for the purposes of the legislation must be communicated to the worker and WorkCover WA within one month of the test being conducted. Information relating to the test cannot be communicated to any other person without the written consent of the worker. Persons who communicate the information obtained from these tests to another person commit an offence and are liable to prosecution.

If the results of a test are communicated to another person with the written consent of the worker, the tester must ensure that they retain the written consent form.

#### 8.1.2 Storage of test results

WorkCover WA shall store the results of air conduction tests in the form of *Form 19A/B* in a safe and confidential manner.

**Testers maintaining a copy** - Testers may maintain a copy of the results, however, the results must be stored personally by the tester and must be stored in a manner which is secure so that no other person may have access to these results without the worker's written consent.

**Any information derived from these results may not be used for any other purpose without the worker's written consent.**

Testers who are employed by a company which conducts such tests for commercial gain cannot store copies of worker's test results in a situation where other persons (such as other company employees) not specified by the worker may have access to the worker's results. If the tester leaves the employ of the company, they must take all copies of worker's results with them, destroy them or forward them to WorkCover WA for storage.

Testers who are employed by the worker's employer may keep a copy of the test result as long as it is stored in such a way that no person may have access to it without the worker's written consent. If the worker has given written consent for a copy of the results to be stored by the employer, these results must be stored in a safe and confidential manner and a copy of the consent form kept with the results.

**A tester must ensure that a worker, when signing a consent form, has read the form completely and fully understands the contents of the form.** Testers who use duress to obtain a written consent from the worker to gain access to their test results will have their testing approval immediately cancelled upon receipt of a substantiated complaint from a worker.

#### 8.1.3 Information to workers about hearing aids

The information obtained from an air conduction audiogram is not considered sufficient to make any statements to a worker about their need for a hearing aid. Workers who do not require a referral for a Full Audiological assessment should be

advised that they will need to undergo a comprehensive hearing assessment before a discussion regarding hearing aid fitting may be made. Air conduction testers who feel workers may benefit from further testing may provide the worker with a list of agencies who supply hearing aids. The worker should be advised that any further testing would not be considered part of the workers' compensation process and the worker will be solely responsible for any costs incurred.

All testers who use a WorkCover WA assessment for commercial gain in regard to selling a hearing aid will have their testing approval cancelled immediately upon receipt of a substantiated complaint from a worker.

#### *8.1.4 Advice to workers about medical conditions*

As a result of conducting an air conduction test, a tester may discover some condition which requires medical examination. If the tester is a General Practitioner, advice about the condition should be given and treatment implemented **with the patient's consent**, as a separate consultation not related to the WorkCover WA hearing assessment. If the tester is other than a General Practitioner the worker should be advised to consult with his or her own General Practitioner.