

FOCUS ON Noise

Focus on learning key



Exercise

Analyse the information in your work group



Discuss

Go through questions in your workgroup

Date:	
Shift:	
Discussion led by:	

Attendees names:	

Introduction

Being exposed to excessive noise levels or prolonged exposure to certain levels of noise can result in Noise Induced Hearing Loss (NIHL). This hearing loss can become permanent and irreversible¹. This resource will aid further analysis of the noise sources in your workplace to better prevent the occurrence of NIHL using the risk management approach² to:

- Identify
- Assess
- Control
- Evaluate

¹ National Occupational Health and Safety Commission (2004) *Noise management and protection of hearing at work, National Code of Practice, 3rd Edition, Canberra.*

² Standards Australia (2001) AS4801 Occupational Health and Safety Management Systems.

Ideally noise measurements have been taken of operating equipment and documented. If this has not occurred yet, a table has been provided on the back of this resource, providing examples of noise levels of various mining equipment. It is recommended that noise measurements of operating equipment be conducted and these measurements documented. Measurements should include exposure (dB) and the amount of exposure (time)³.

1 NIHL impacts

Discussion points

- Difficulty in following instructions, being unable to hear the instructions very clearly.
- Can hear a faint ringing or buzzing noise when in quiet environments.
- It can be frustrating when someone always asks to have statements repeated.
- To avoid people becoming frustrated with being asked to repeat statements, some pretend that they have heard what has been said.
- Some people notice a gradual loss in their ability to hear clearly.

³ Australian Institute of Occupational Hygienists (2007) *Principles of occupational health and hygiene, C.Tillman, Allen & Unwin, Australia*

Noise



Trade & Investment
Mine Safety




Sound Level L _{Aeq, T} dB(A)								
	15 Mins	30 mins	1 hr	2 hr	4hr	8hr	10hr	12hr
<101	Red	Red	Red	Red	Red	Red	Red	Red
100	Yellow	Red	Red	Red	Red	Red	Red	Red
99	Yellow	Red	Red	Red	Red	Red	Red	Red
98	Yellow	Red	Red	Red	Red	Red	Red	Red
97	Yellow	Yellow	Red	Red	Red	Red	Red	Red
96	Yellow	Yellow	Red	Red	Red	Red	Red	Red
95	Yellow	Yellow	Red	Red	Red	Red	Red	Red
94	Green	Yellow	Yellow	Red	Red	Red	Red	Red
93	Green	Yellow	Yellow	Red	Red	Red	Red	Red
92	Green	Yellow	Yellow	Red	Red	Red	Red	Red
91	Green	Green	Yellow	Yellow	Red	Red	Red	Red
90	Green	Green	Yellow	Yellow	Red	Red	Red	Red
89	Green	Green	Yellow	Yellow	Red	Red	Red	Red
88	Green	Green	Green	Yellow	Yellow	Red	Red	Red
87	Green	Green	Green	Yellow	Yellow	Red	Red	Red
86	Green	Green	Green	Yellow	Yellow	Red	Red	Red
85	Green	Green	Green	Green	Yellow	Yellow	Red	Red
84	Green	Green	Green	Green	Yellow	Yellow	Yellow	Red
83	Green	Green	Green	Green	Yellow	Yellow	Yellow	Yellow
82	Green	Green	Green	Green	Green	Yellow	Yellow	Yellow
81	Green	Green	Green	Green	Green	Yellow	Yellow	Yellow
80	Green	Green	Green	Green	Green	Yellow	Yellow	Yellow
79	Green	Green	Green	Green	Green	Green	Yellow	Yellow
>78	Green	Green	Green	Green	Green	Green	Green	Green
Low Risk			Moderate Risk			High Risk		

Safe Work Australia (2011) Code of Practice – Managing noise and preventing hearing loss at work

2  How many people are/will be exposed to this noise source?

3  We reduce our risk by?

- Reducing the amount of noise
- Reducing the time that we are exposed
- Using protection where necessary

4  How would you rate the effectiveness of your controls?

- Very effective
- Somewhat effective
- Not effective at all

B  Identify a noise source that has been rated as high risk.

This exercise aims to stimulate ideas for controlling noise risk and differentiating between preventative and protective controls. This exercise also aims to reinforce preventative controls as the better option of control.

Give an example of how you might protect yourself from exposure to the identified noise source.

Example: Prevent people from entering vicinity of operating equipment if practicable.

Give an example of how you can prevent exposure to the identified noise source.

Example: Turning equipment off if practicable.

5  When was the last time you had your hearing protection fitted or received training on how to fit Hearing protection?


- Never
- Trained once but never fit tested.
- Trained more than once but never fit tested.
- Fit tested once but never trained.
- Fit tested more than once but never trained
- Trained and fit tested once.
- Trained and fit tested more than once

6  The classification of my hearing protection is?

- Class 1
- Class 2
- Class 3
- Class 4
- Class 5
- Various hearing protection
- Don't know

7  Do you use your hearing protection at the appropriate time?

- Always
- Most times
- Sometimes
- Never

8  If your response was any response other than 'always', what is the reason you don't use hearing protection at appropriate times?

The table below demonstrates the reduction in dB certain classes of hearing protection can achieve.

Hearing Protector Classification	
Class	Suited for environments that are;
1	Less than 90dB
2	90dB to less than 95dB
3	95dB to less than 100dB
4	100dB to less than 105dB
5	105dB to less than 110dB

Standards Australia, AS/NZS 1269 Occupational Noise Management Parts 0-4 Standards Australia, Sydney

The only way to determine effectiveness of hearing protection is to have the hearing protection fit tested and follow up by training in the correct fitting of the hearing protection. Fit testing and training should occur if there is change in the hearing protection being used and/or periodically

Future Actions	Date completed
<input type="checkbox"/> Evaluate current controls	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	

Additional resources and information regarding noise management:

- Industry & Investment NSW, *Health Management Plan Toolkit, NSW mining and extractives industry*
- Australian Standard AS/NZS 1269 *Series Occupational Noise Management, Sydney*
- National Occupational Health and Safety Commission (2009) *National Code of Practice for Noise Management and Protection of hearing at Work, 3rd edition, Canberra*
- www.nswminesafety.com.au

Examples of noise exposure for underground mining

Operation/Task	Sound Level dB (A)	Maximum unprotected exposure time
Longwall Mining		
Beside operating shearer and chain conveyor	94	1hr
Beside operating shearer	90	2.5hrs
Compressed air pick breaking up large rock fragments	98	24mins
Main gate operator, coal passing	88	4hrs
Shaft Sinking		
Beside operator, compressed air grab workings	115	29secs
3 Panther Atlas air guns in operation at shaft bottom	115	29secs
On stage, beside operator with grab working	106	4mins
On stage, only air hydraulic motor working	110	90secs
Underground Coal Transport		
At drivehead at the junction of conveyors, coal running	94	1hr
Shuttle car discharge coal onto belt (high rate)	93	80mins
Beside Hannsford Feeder with hydraulic drive	95	48mins
Hydrocar Unloading	90	2.5hrs
Roof Bolting		
Falcon, roof bolting in operation	112	58secs
Falcon, tightening roof bolts	110	90secs
Fletcher roof bolter installing bolt	88	4hrs
Borer, Joy single boom drill	96	38mins

Operation/Task	Sound Level dB (A)	Maximum unprotected exposure time
Continuous Miners		
Joy cm, miner filling, beside operator	94	1hr
Lee Norse 62H CM, cutting beside operator	92	100mins
Lee Norse CM, filling beside operator	98	24mins
Screens, Crushers, Picking Belts		
Beside screen , hand on picking belt	96	38mins
Crusher	99	19mins
First floor drift gantry	104	6mins
Underground Equipment		
Ventilation fans	90-100	15mins-2.5hrs
Jumbo drills	103-106	8-9mins
Chain conveyor	100-105	5-15mins
LHD's (Boggers)	95-100	15-48mins

Safe Work Australia (2011) Code of Practice – Managing noise and preventing hearing loss at work

Examples of noise exposure for above ground mining

Operation/Task	Sound Level dB (A)	Maximum unprotected exposure time
Coal Preparation Plant		
Beside crusher mill	102	10mins
Ground floor of screen building	92	100mins
Beside operator of vibrating screens	98	24mins
Processing Plant Equipment		
De-waters	90-100	15mins-2.5hrs
Jaw crushers	90-100	15mins-2.5hrs
Vacuum pumps	96-100	15-38mins
Autogenous grinders	90-100	15mins-2.5hrs
Classifying screens	90-102	10mins-2.5hrs
Car shakes outs	103-116	23secs-8mins
Fans and blowers	96-100	15-38mins
Chutes and hoppers	100-108	2-15mins

Safe Work Australia (2011) Code of Practice – Managing noise and preventing hearing loss at work

Operation/Task	Sound Level dB (A)	Maximum unprotected exposure time
Earthmoving Equipment		
Front end loader	104-108	2-6mins
D9 Bulldozer without muffler	100-106	4-15mins
Cabin of drilling machine	86-100	15mins-6.4hrs
Beside Euclid truck	80-96	38mins-16hrs
Dragline engine room	92-101	12-100mins
Surface Mining Equipment		
Crawler tractor	96-107	3-38mins
Rotary drills	95-106	4-48mins
Percussion drills	103-120	8mins-9secs
Electric shovels	75-90	0-2.5hrs
Diesel shovels	85-102	8hr – 10mins
Haul trucks	84-109	9hrs – 11secs
Scrapers	85-111	8hrs – 72secs
Graders	85-100	15mins-8hrs
Coal Augers	89-100	15mins-3.2hrs

Acknowledgement

This Focus On has been developed in consultation with various industry stakeholders from the NSW mining industry and endorsed by the NSW Mining and Extractives Industry Health Management Advisory Committee (HMAC). HMAC reports to the NSW Mine Safety Advisory Council and has membership from the NSW Minerals Council, Cement Concrete and Aggregates Australia; CFMEU, AWU, Coal Services, WorkCover NSW, NSW Trade & Investment and an independent health expert.

Disclaimer

The information contained in this publication is based on knowledge and understanding at the time of writing. However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of NSW Trade & Investment or the user's independent adviser.

11/12 OUT12/12698