



Australasian Faculty of Occupational and Environmental Medicine

Australasian Faculty of Occupational and Environmental Medicine Annual Training Meeting 2019 3 to 5 May, Auckland New Zealand

Worksite Scenarios

Group A

9.30am – 12pm	Auckland International Airport Rescue Fire Service
1.30pm – 4pm	Lion Brewery

Group B

9.30am – 12pm	Wiri Electric Train Depot
1.30pm – 4pm	Tegel

Group C

9.30am – 12pm	New Zealand Steel
1.30pm – 4pm	New Zealand Post International Mail Centre

WORKSITE SCENARIOS

Auckland International Airport Rescue Fire Service

Background

The Auckland International Airport Rescue Fire Service (AIA) Rescue Fire Service responds to aircraft, medical, general fire and hazardous substances emergencies in and around the airport environs. The service also provides marine rescue operations on the Manukau Harbour adjacent to the airport, not just for aviation emergencies, but for boaties in distress.

Firefighters work in dedicated team called a 'watch' who all follow the same shift pattern together. There are a number of watches to cover this 24/7 operation.

Scenario

You are an occupational physician assisting an AIA fire fighter (Dave) with return to work planning following knee surgery (meniscus repair). You have arranged to visit the worksite to better understand the task requirements, hazards and general work patterns.

1. Having reviewed the site, what hazards have you observed (or can be inferred)? Do not forget psychosocial hazards which can be significant in the rescue worker cohort.

2. What is involved in the fitness test that Dave will need to pass to be cleared back to operational duties?

3. Having viewed the worksite, can you identify any common activity/action that Dave is going to need to take care with in order to reduce the risk of re-injuring his knee?

4. Note the thick, heavy PPE that the firefighters are required to don for fire call outs. If assessing a pre-placement candidate, which medical conditions or types of medication might concern you in terms of increasing their risk of developing heat stress while fighting a fire?

5. Firefighters are expose to a number of carcinogens. Is there evidence of increased cancer incidence/mortality among firefighters? If so, which cancers in particular?

- Daniels RD, et al. Mortality and cancer incidence in a pooled cohort of US firefighters from San Francisco, Chicago and Philadelphia (1950-2009). Occup Environ Med 2014;71(6):388-397. Available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4499779/pdf/nihms-704197.pdf
- <u>https://www.safeworkaustralia.gov.au/system/files/documents/1902/guide_for_managing_t</u> <u>he risks of working in heat 1.pdf</u>

Lion Breweries

Background

Lion was formed by the amalgamation of some of Australian and New Zealand's well know food and beverage companies including the Albert Brewery, Hobson Breweries and the South Australian Brewing Company since 1840. Acquisition of these various companies included the production of some of Australia's iconic brands including 4X Gold Beer and Toohey's New Beer. By 2011, Lion had expanded their brewery business and entered into the dairy market. Their main operations are now divided into three areas, Lion Beer, Spirits and Wine Australia, Lion Beer, Spirits and Wine New Zealand; and Lion Dairy and Drinks. The Auckland Lion Breweries site is the largest brewery in New Zealand.

Scenario

An employee rep from the health and safety team has approached you to visit the site and provide an overview of the sites hazards and control measures. More specifically one of the employees has noticed a gradual decline in heading over the past few years and wonders if this could be due to noise exposure at work, and the representative has asked you to consider noise management in the plant I greater depth.

1. Create a list of hazards that you see. Try to be systematic so that no important hazards are missing.

2. The employer only has a limited annual budget for managing health and safety issues. How would you rank these hazards in terms of importance and which require management first?

3. Production line workers are often exposed to repetitive use of their upper limbs, what are some of the conditions you can think of that repetitive use might be associated with and what other factors aside from repetition might increase the risk of developing these conditions?

4. How would you go about assessing the noise hazard in the plant and what are some ways of managing noise?

5. The employee with the hearing loss works in one of the noisier areas of the plant. He has glasses and you determine that the glasses are preventing his ear muffs from forming an adequate seal around his ears. How do you manage this?

References and reading list

Reliable information on managing noise hazards at work can easily be found by searching noise on the following sites:

- Australia: <u>www.safeworkaustralia.gov.au</u>
- New Zealand: <u>https://worksafe.govt.nz/</u>

Useful studies on repetitive stress injuries:

- Work-related risk factors for specific shoulder disorders: a systematic review and metaanalysis; Henk F van der Molen, Chiara Foresti, Joost G Daams, Monique H F Frings-Dresen and P Paul F M Kuijer; Occup Environ Med; 74:745-755; July 2017
- Risk factors for work-related musculoskeletal disorders: A systematic review of recent longitudinal studies; Bruno da Costa et al; AJIM 2010; 53:285-323
- Carpal tunnel syndrome and its relation to occupation: a systematic literature review, Keith T. Palmer, E. Clare Harris and David Coggon, Occupational Medicine 2007;57:57–66
- National Institute for Occupational Safety and Health (NIOSH). Musculoskeletal Disorders and Workplace Factors; Second Printing, July 1997.
- AMA Guides to the Evaluation of Disease and Injury Causation Second Edition; J. Melhorn, James B. Talmage, William E Ackerman III and Mark H Hyman; The American Medical Association; 2014

Wiri Electric Train Depot

Background

The Wiri Electric Train Depot is an extensive maintenance and stabling facility for the electric trains located in Wiri, south of Auckland which was opened in July 2013. The purpose-built facility comprises a maintenance building, rail track sliding and stabling for 28 trains and a platform for cleaning.

There are also seven maintenance berths in the depot, some of them electrified and some are not. Overhead gantries (a bridge-like overhead structure with a platform) installed assist in the lifting of heavy equipment on and off the trains. In addition, jacking systems have been installed to lift the body of the trains for the purpose of wheel chassis removal and underfloor pits to enable easy access to the trains.

In addition to maintenance activities the Wiri Electric Train Depot houses facilities which enable virtual driver training and to run various driver training scenarios.

The facility also houses a control room with an overall plan of the Auckland rail network with live positioning of the trains.

The Wiri Electric Train Depot contains several distinct worksite areas as noted above. You should get to view all of these areas during your visit.

Scenario

You are a member of a team of health and safety experts invited to do a Health and Safety Audit of the Wiri Electric Train Depot due to the nature of the heavy and complex machinery and systems in operation.

The list of questions below will serve as a check list for your audit.

1. When visiting the maintenance area consider what hazards and what control measures you can see. Try to do this in a systematic manner so that no important hazards are missed.

2. When visiting the driver training facility consider how modern automated trains make train travel safer for commuters than older trains.

3. How would you go about assessing a train driver with cardiac or sleep apnoea issues for work fitness?

4. Does a high level of automation create any additional hazards that you can think of?

5. When visiting the control room think about how well or how poorly the risks of human error have been mitigated.

6. How this room could be used in the event of a major emergency on the Auckland rail network?

- Australian national rail standard <u>https://www.ntc.gov.au/Media/Reports/(7B079897-1863-CA93-474F-AD96AD9C6C3F).pdf</u>
- Other Australian rail medical forms <u>https://www.ntc.gov.au/rail/safety/national-standard-for-health-assessment-of-rail-safety-workers/national-standard-health-assessment-forms/</u>
- NZ specific rail standard information <u>www.kiwirail.co.nz/working-for-us/national-</u> <u>standards.html</u>

Tegel

Background

Tegel has been operating since 1961 and has been offering a huge range of products to meet New Zealand's demand for chicken. While predominantly meeting their domestic demands, Tegel also exports to international markets including Australia and other emerging markets in Africa and Asia, excluding China. The company employs over 1500 workers across its three plants and offices.

Tegel has three slaughterhouse or meat processing plants in New Zealand, with the most recent line opening at the end of 2012 in Henderson, located west of Auckland. The Henderson plant produces over 350 tonnes of chicken per week.

Scenario

You provide occupational medical services for Tegel on a regular basis. Recently there has been an increased number of workers with various respiratory complaints. They all believe that their symptoms are caused by the work they do.

1. How do you go about investigating these complaints?

- 2. You decide to visit the workplace.
 - a. What are the potential problems that an occupational physician my face in conducting workplace visit? How do you deal with these issues?

b. How do you conduct the visit – the "walk-through survey"?

3. What occupational and environmental hazards can you identify in this site?

4. What control measures did you observe?

5. How do you advise the management about the workers' complaints?

- 1. Agius, R. and Seaton, A. (2012). Practical Occupational Medicine. 2nd ed. pp.47-77.
- 2. 2016 AFOEM Annual Training Meeting, Adelaide, South Australia.
- 3. Snashall, D. and Patel, D. (2012). *ABC of Occupational and Environmental Medicine*. 3rd ed. p.12.
- 4. https://www.ccohs.ca/oshanswers/hsprograms/hazard_risk.html
- 5. https://www.cdc.gov/niosh/topics/hierarchy/default.html

New Zealand Steel

Background

New Zealand Steel is a leading manufacturer of quality steel. They supply to all major markets including constructions, manufacturing, infrastructure, packaging and agriculture. It is the owner of Glenbrook Steel Mill, located 40 kilometres south of Auckland. The Mill was constructed in 1968 and began producing steel by the following year. Over 90% of steel is produced at Glenbrook while the remaining volume is produced by Pacific Steel, located in Otahutu, Auckland.

The Mill employs over 1000 full staff and over 150 contractors, and approximately, 1.2 million tonnes of irons and ore are delivered to the Mill annually.

Scenario

You provide occupational medical services for New Zealand Steel on a regular basis. Recently there has been an increased number of workers with various musculoskeletal complaints. They all believe that their symptoms are caused by the work they do.

1. How do you go about investigating these complaints?

- 2. You decide to visit the workplace.
 - a. What are the potential problems that an occupational physician my face in conducting workplace visit? How do you deal with these issues?

b. How do you conduct the visit – the "walk-through survey"?

3. What occupational and environmental hazards can you identify in this site?

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- 5. https://www.cdc.gov/niosh/topics/hierarchy/default.html

New Zealand Post International Mail Centre

Background

New Zealand Post has been part of the New Zealand's national landscape for nearly 180 years. It entered the 20th century as a government department with over 1700 branches. By the middle of the century, it was a complex and financially successful organisation fulfilling political, social and economic needs.

In the 1960s and 1970s, the installation of New Zealand's first mechanical mail sorting machine and the introduction of postal codes helped to simply and manage the ever-increasing volumes of national and international mail. However, by the 1980s increasing tensions between political and commercial pressure meant the business model was not operating efficiently. Before 1987 NZ Post office ran all postal services, plus the telephone system and a bank. In April 1987, the New Zealand Post was corporatised and its core business separated into three companies – Telcom, Post Bank and New Zealand Post.

In 1998, New Zealand postal market was deregulated and opened it to more competition.

In the digital era, New Zealand Post has evolved with time and has incorporated the use of automation to increase efficiencies in areas of mail sorting and mail processing. These machines include the Culler Facer Canceller which 'sees' stamps and cancels the stamps with an ink postmark; Optical Character Reader that can read all addresses printed or typed and sorts the mail as per the destination and the all in one Integrated mail processor (IMP) that can sort all the letters into different destination slots. Use of technology helps in speeding up the process of mail sorting and up to 35,000 letters can be processed per hour.

However, machines cannot do all the mail processing and sorting in particular for envelopes, packets and parcel or for mail going overseas and these activities still require some degree of human involvement.

New Zealand Post International Mail Centre, Auckland is the hub for handling overseas mail. The centre is open seven days a week and works from 1am to 8pm most days. Mail is received from international flights every day. All inbound mail passes are carefully checked in accordance with the New Zealand Customs Service or the Ministry for Primary Industries requirements to ensure illegal goods and/ food are not sent through mail into New Zealand. In addition to machine and human involvement in mail processing, help is taken from trained sniffer dogs to sniff out illegal goods such as drugs.

Scenario

Auckland International Mail Centre (IMC) is planning to do a health and safety review at its premises. The Health and Safety Manager of IMC has approached you to join their team of Health and Safety representatives to conduct a walkthrough survey of work site and to assist in the development of a Health and Safety risk assessment and risk mitigation plan.

1. As you are walking through the worksite, systematically identify the various hazards that you see.

2. The Health and Safety team want your input with the risk assessment and risk mitigation plan that they plan to have in place over the next six months. Identify the top two main hazards in terms of their importance of the hazards that you have identified.

3. Briefly outline the hierarchy of hazard control. Discuss the Risk Assessment and Management plan for the identified hazards at IMC.

4. What might be the concerns related to use of automated mail processing equipment in the IMC?

5. The Human Resources Manager has asked for your input to develop a preemployment medical assessment for potential employees. What would be the key components of a pre-employment medical assessment? 6. An employee has had a lumbar disc prolapse that required surgical intervention. He presents to you for a fitness for work assessment with a request from the Occupational Therapist (OT) to enable a graduated return to work. What are your considerations and how will you implement this?

References and reading list

- <u>https://www.nzpost.co.nz/about-us</u>
- <u>https://www.britannica.com/topic/postal-system/Postal-services-in-the-developing-</u> <u>countries#ref367153</u>
- Australia: <u>www.safeworkaustralia.gov.au</u>
- New Zealand: <u>https://worksafe.govt.nz/</u>

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