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[www.dmp.wa.gov.au/ResourcesSafety](http://www.dmp.wa.gov.au/ResourcesSafety)

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This publication is available on request in other formats for people with special needs.

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### For publication orders

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**The advice provided in this pamphlet is basic safety and health information. Ensure you are familiar with your site procedures and, if uncertain, discuss this information with your supervisor and safety and health representative.**

## Mine safety matters

# Drill rig operation



## THE HAZARDS

Drill rigs are large, heavy and generally slow moving units. They are complex machines and their operation requires high levels of knowledge and skill. The safe use of a rig is heavily dependent on competent operators and a high standard of maintenance.

Some hazards associated with drill rigs are:

- noise
- rig stability
- rotating and moving machinery
- manual handling of drill rods, bits and other heavy equipment
- stored energy (high pressure air and fluids)
- falling objects
- exposure to dust, mud, aerosols and gases
- working at height
- intersecting a drillhole containing an unexploded charge

- exposure to extreme weather conditions.

## WHAT CAN HAPPEN

- Permanent hearing loss can result from inadequate noise management
- Moving a rig with a raised mast may cause crushing injuries or death if:
  - the rig topples on an uneven or unstable surface
  - the rig contacts an overhead obstruction, such as a bridge, tree branch or powerline, and topples
- Contact with powerlines can result in electrocution and the destruction of the rig by fire
- Loose clothing or uncovered long hair can become caught in rotating or moving machinery, resulting in serious injuries
- Manual handling of heavy equipment can cause musculoskeletal disorders or result in crushing injuries

- Air and hydraulic hoses damaged by misuse or poor maintenance may fail, causing uncontrolled movements of heavy components

- Dust and aerosols generated by the drilling process can have long-term health effects if excessive levels are inhaled or the material is hazardous (e.g. fibrous minerals)

- Working platforms and walkways on drill rigs are usually elevated, and sometimes slippery, and falling or jumping from them can cause injury

- Mounting and dismounting a rig onto rough ground underfoot can result in serious leg and ankle injuries.

- Drilling into a previous hole containing an unexploded charge may result in serious damage and possibly death

- If a drill intersects a pocket of gas or other contaminants, it may become dangerous to keep operating

- Restricted visibility from the cab increases the possibility of collisions with other equipment

- A drill rig can become stranded if poor planning, control or supervision result in it being located behind charged holes or other obstacles, making recovery a hazardous operation

## SAFE WORK PRACTICES

- Only authorised and competent operators should operate and move drill rigs

- Specify maximum noise levels allowable when purchasing any equipment

- Display noise warning signage and wear hearing protection in designated areas

- Before moving a rig, make sure that you will not endanger other people by doing so

- Be aware of overhead hazards, especially powerlines

- Never move a rig with the mast raised, except when moving between drilling positions on level, competent ground

- Carry out thorough pre-start checks to identify potential component failures

- All rotating and moving components must be guarded to Australian Standards

- Ensure people working near rotating machinery do not wear loose clothing and do not have loose sweat cloths or cleaning rags on them

- Long hair should be tied back or netted when working near rotating machinery

- Always use the correct rod handling equipment

- Ensure safety hand rails and harnesses are adequate for the operation

- Ensure the dangers of hole pressurisation and blockage issues are understood and controlled

- Provide detection equipment and safety procedures if it is possible that gas may be encountered

- Always wear a respirator or mask in areas where exposure to dust or hazardous substances is high

- Never jump on or off any part of a drill rig. A safe means of access should be provided

- Establish a procedure for the safe removal and fitting of the drill string

- Use purpose-built tools, not modified Stilson-type wrenches, to break out the thread of drill rod components.

For further advice, refer to Resources Safety's Mines Safety Bulletin Numbers 21, 31 and 71, and various Significant Incident Reports available at [www.dmp.wa.gov.au/ResourcesSafety](http://www.dmp.wa.gov.au/ResourcesSafety)

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