



Industry &  
Investment

# MINE SAFETY

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# INVESTIGATION UNIT

Injury resulting in death from a  
mobile bolter at underground coal mine  
24 July 2008

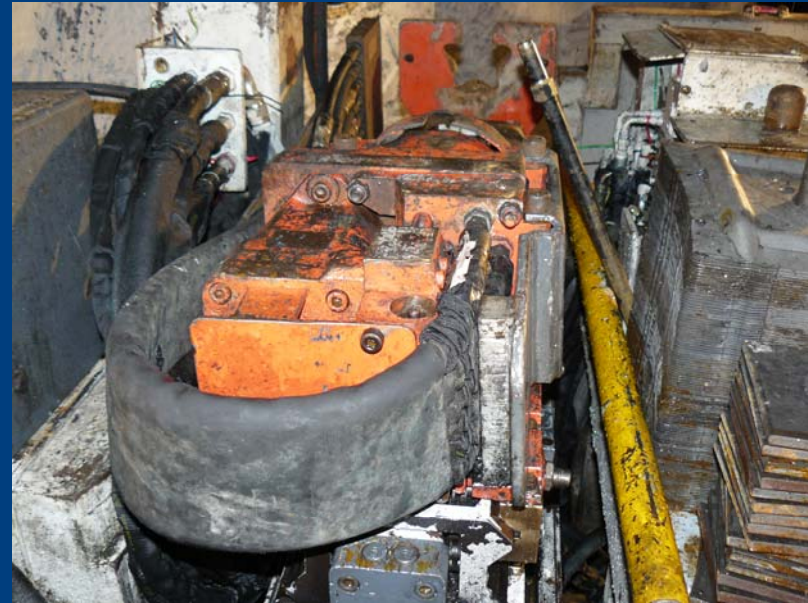
# Struck by drill steel

- 24 July 2008
- Incident underground of a coal mine in Lake Macquarie
- Operating rib bolting rig of a mobile bolter
- Fall of object onto unguarded moving parts



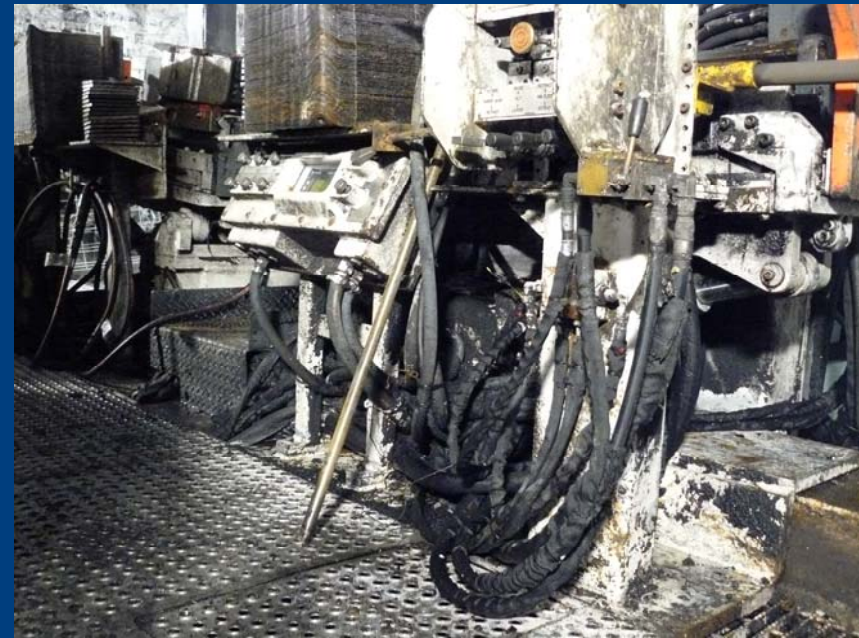
# The incident

- Operating rib bolter rig of mobile bolter
- Completed drilling and stood drill steel near rib bolter controls whilst pushing a bolt into the rib
- Drill steel has fallen between control panel and butterfly plates onto drill head carriageway



# The incident

- Drill steel bit caught in floor plate
- Drill head retracted and catches top of drill steel causing it to bend
- Drill steel in tension
- Drill bit lets go and strikes operator on outside left foot



# The injuries and treatment

- Drill bit cut through safety gum boot to lacerate left foot
- Fracture to the fifth metatarsal
- First aid at mine followed by hospital
- Foot immobilised with below the knee plaster cast
- On going orthopedic care and rehabilitation
- Six weeks later mineworker suffers heart attack caused by complications from the injuries and died

# Causal factors

- Lack of storage within operator's workstation for rib bolter tools, equipment and consumables
- No physical guard to prevent:
  - objects falling onto moving or rotating parts
  - ejection of broken drill steels or bolts
  - persons becoming entangled or contact
- Inadequate safe work procedures

# Best practice

- Identify and eliminate risk during design, manufacture and use of mobile bolting machines by; incorporating ergonomics principles, and human interaction and error, such as unintended behaviour and reasonably foreseeable misuse, to prevent harm
- Physical guarding of all moving and rotating parts as well as other protective devices
- Written instructions and safe work procedures that include all steps and tasks of the storage of drill steels and other equipment during the drilling and bolting.

# Related published resources

- I&I NSW mine safety publications

*MDG 35.1 Guideline for Bolting and Drilling Plant in Mines, Part 1: Bolting plant for strata support in underground coal mines*

<http://www.dpi.nsw.gov.au/minerals/safety/publications/mdg>

- Australia standards

*AS4024 Safety of Machinery series*