Identifying injury risks associated with underground coal mining equipment

Robin Burgess-Limerick

Burgess-Limerick & Associates

Project Objectives

- Identify injury risks associated with equipment
- Identify existing controls
- Identify potential controls for uncontrolled risks
- Facilitate communication between manufacturers and mines

Progress

- Analysis equipment related injury narratives from NSW
- Visits to 14 NSW and Qld sites to document hazards and controls
- Visits to manufacturers
### Equipment related injuries

<table>
<thead>
<tr>
<th>Equipment</th>
<th>NSW(03-05)</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>N=4169</td>
</tr>
<tr>
<td>Continuous Miner</td>
<td>447 (11%)</td>
</tr>
<tr>
<td>Scoop/LHD</td>
<td>232 (6%)</td>
</tr>
<tr>
<td>Shuttle Car</td>
<td>140 (3%)</td>
</tr>
<tr>
<td>Transport</td>
<td>140 (3%)</td>
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</tbody>
</table>

### Analysis examples

**While getting box of chemicals he slipped off step at the rear of ABM work platform jarring his lower & upper back when he hit the ground**
- **Continuous miner : Handling : Slipped off**

**While he was a passenger in the transporter on the travel road the vehicle hit a large pot hole straining his neck shoulders & back**
- **Transport : Traveling : Hit hole/rough road**

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**NSW Injuries 2002/03 - 2004/05**

- Continuous Miner (447)
- Access Egress (27)
- Bolting (153)
- Handling (192)
- Maintenance (51)
- Other (24)
- Caught between (172)
- Struck by (99)
- Strained (219)
- Other (9)
NSW Priorities

Continuous miner
- Slipping off
- Bolting: incorrect control operation
- Bolting: strain
- Handling continuous miner cable

LHD/Shuttle car/Transport
- Driving - collisions
- Driving/Travelling - rough road

Slipping off CM platform
- single level platform
- ladder access
- hand rails
- improved platform lighting

Bolting: inadvertent or incorrect control operation
- guarding controls and pinch points
- shape & location coding
- standardize layout
- direction stereotypes
Bolting: strain

- redesign bolting controls to improve access to drill pots
- mast mounted controls and rotated drill pots

Handling continuous miner cable

- hydraulic cable reeler
- monorail

Driving - collisions

- proximity detection systems
- height adjustable LHD cab
- shuttle car steering incompatibility
Driving/Travelling - rough road

- roadway maintenance
- weight adjustable suspension seats
- shuttle car suspension
- forward facing transport seating

Project Outcomes

- Seminar (feedback form)
- Equipment ergonomics risk assessment tool (draft in folder, comment requested)