

Factsheet 1

Human factors in mining

Human factors

This fact sheet describes a real life case study in the mining industry and has been designed as an educational tool for supervisors, safety specialists and managers. It aims to provide an understanding of the potential impacts of human and organisational factors in mining.

Human factors in mining

Human and organisational factors support critical controls within the safety management system. These factors can affect health and safety in the workplace in many ways. They include environmental, organisational and job factors, along with human and individual characteristics, that influence behaviour at work.

If an accident occurs, an investigation into the incident needs to identify the critical controls that have failed and any factors that had an impact on the situation.

Read the case study below and think about what human and organisational factors may have contributed to the incident. See page 2 for an explanation of each factor.

Case study: Fatal collision

A trainee plant operator suffered fatal injuries when her light vehicle collided with and was crushed by a haul truck.

The trainee plant operator, who worked as a contractor on the site, had earlier parked a haul truck she was operating at a stockpile to collect a light vehicle. The light vehicle was being used to collect other workers and take them for a crib (meal) break.

The light vehicle was travelling on a ramp and approached a T intersection. Under the rules, any vehicles on this ramp are required to give way to vehicles on the haul road. The light vehicle turned right onto the haul road and into the path of the dump truck. A collision occurred and the trainee

plant operator died immediately from multiple injuries.

The incident occurred at 11.50 pm on the trainee plant operator's second night-shift. At the time of the incident the trainee plant operator had worked a total 45 hours and was beginning her sixth shift that week.

The intersection where the incident occurred was covered in ponding water. The windrow height on the ramp varied considerably and for the final ten metres was higher than both the mine standard and best practice. This reduced the visibility of the light vehicle driver.

The intersection was controlled by a give way sign that was meant to manage the flow of vehicles. However, the location and size of the sign did not provide the best warning to drivers. The heavy vehicle was also covered with dirt and mud and the location of the lights on a nearby workshop made it difficult to distinguish between the moving truck and the workshop.



Similar vehicle to the one used in the incident

Download the report: [Fatal collision between haul dump truck and light vehicle](#)

Exercise

What human and organisational factors do you think may have contributed to the incident in the case study? Explain why.

Think of a task or incident in your workplace that is similar to the case study. Give a brief description of it below.

Identify the human and organisation factors in your task or incident. Outline how the factors relate.

Common human and organisational factors

- **Fatigue and shift work:** fatigue caused by poorly planned rostering of shift work
- **Human factors in design:** tasks, equipment and plant are not designed to suit the user
- **Human failure:** relying on people for safety-critical tasks increases the risk of errors, mistakes and violations
- **Maintenance, inspection and testing:** lack of structured processes
- **Organisational change:** the organisation is undertaking a change and it is not being effectively managed
- **Organisational culture:** the organisation does not have a strong safety-focused culture
- **Procedures:** lack of easy to read, user-friendly procedures
- **Safety-critical communication:** lack of structured processes for key information sharing, including shift and task handovers
- **Staffing and workload:** insufficient staffing numbers on a shift, task or job
- **Training and competence:** staff assigned to a task do not have the right combination of skills, experience and knowledge

More information

The legislation and rules that regulate mining provide more detailed information on human factors that you need to consider when updating your work health and safety procedures. Download the relevant legislation and rules below:

- [Work Health and Safety \(Mines and Petroleum Sites\) legislation](#)
- [Work Health and Safety legislation](#)
- [Austrroads guide to traffic management](#)
- [Code of practice: Managing the risks of plant in the workplace](#)

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