

# Miner struck by rockfall at development face

## Mines safety bulletin no. 173

### What happened?

During charging of a perimeter hole on a development heading at an underground metalliferous mine, about 11 tonnes of rock fell from the middle and upper portions of the face, trapping an operator in a Normet Charmec basket, (see photo).

Fortunately, only minor injuries were sustained as the operator avoided the majority of the fall, leaning out of the basket to charge a perimeter hole away from the fall when it occurred. This rockfall could easily have resulted in a fatality.

Following the fall, some of the rocks were hanging off the face from Nonel tubes (which had the potential to snap and shoot).

### Further detail

- The rock type was sheared and brecciated thinly bedded quartzite with pods of soft hematite alteration, which resulted in poor ground conditions.
- It was the first full cut after a turn out off a decline.
- In the days prior there had been a fall of ground from the backs of the turnout intersection.
- The face was large, approximately 6m wide x 8.2m high.
- The last row of bolts in the backs were between 0.25m and up to 1.6m back from the face.
- Geotechnical engineers had recommended the face be supported. That information was not effectively communicated, and as a result, not acted upon.
- The site had a system requiring operators to assess faces and determine the need for support.
- The jumbo operator had spent additional time to thoroughly mechanically scale the face, but did not consider it necessary to support it.
- The charge crew inspected the face and did not consider it needed hand scaling.

### Comments

This incident highlights how hazard controls that exclude routine face support and rely instead on visual assessment, interpretation, mechanical and hand scaling and discretionary action by individuals may not be effective for this type of activity or situation. They may not ensure that the risk is within acceptable limits and as low as reasonably achievable.

The legislation requires that a person with an obligation to manage risk in relation to ground control at a mine during the mine's operation must ensure appropriate measures are taken to prevent or control local and area failures in ground integrity (see section 44, Mining and Quarrying Safety and Health Regulation 2017).

### Other incidents and information

In addition to this incident, there have been six other incidents in Queensland mines since 2015, where individuals have been seriously injured by rocks that have fallen from the face. [Safety bulletin 159](#) and [Safety alert 330](#) issued by the Mines Inspectorate provide further detail on these.

In addition, a fatal accident involved a rock fall from an unsupported face in an Australian mine in 2015. Following the investigation, the company involved mandated face support for all development headings at all their sites.

In subsequent prosecution proceedings, the defense accepted that the risk of rock fall in the circumstances of the incident was a foreseeable and very substantial risk. While the defendant had addressed the safety of its employees at the development cycle through various instructions, training



and techniques, it was conceded that such measures were insufficient and it had not done all that was reasonably practicable to protect the deceased against the risk of rock fall at development faces into which no ground support was installed.

Face support has already been implemented in 8 out of 16 underground metal mines in Queensland.

### Recommendations:

Site senior executives have a continuing obligation to review risk assessments and hazard controls, to ensure that the risk to persons is within acceptable limits and as low as reasonably achievable.

Rock falls from the face are a real and foreseeable risk and many operations utilise routine face support.

It is considered that routine face support is one of the most effective methods of managing the risk of rockfall at the face.

The mines inspectorate recommends all underground mines seriously consider adoption of routine face support in addressing this hazard.

