



GOLD FIELDS

3 Shaft - Slack Rope Incident 12 July 2006

Beatrix Gold Mine - North Section
Man Winder Slack Rope

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The complete Gold company

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Introduction



- What is culture?

The accumulated habits, attitudes, and beliefs of a group of people that define them their general behaviour.

The common beliefs and practices of a group of people.

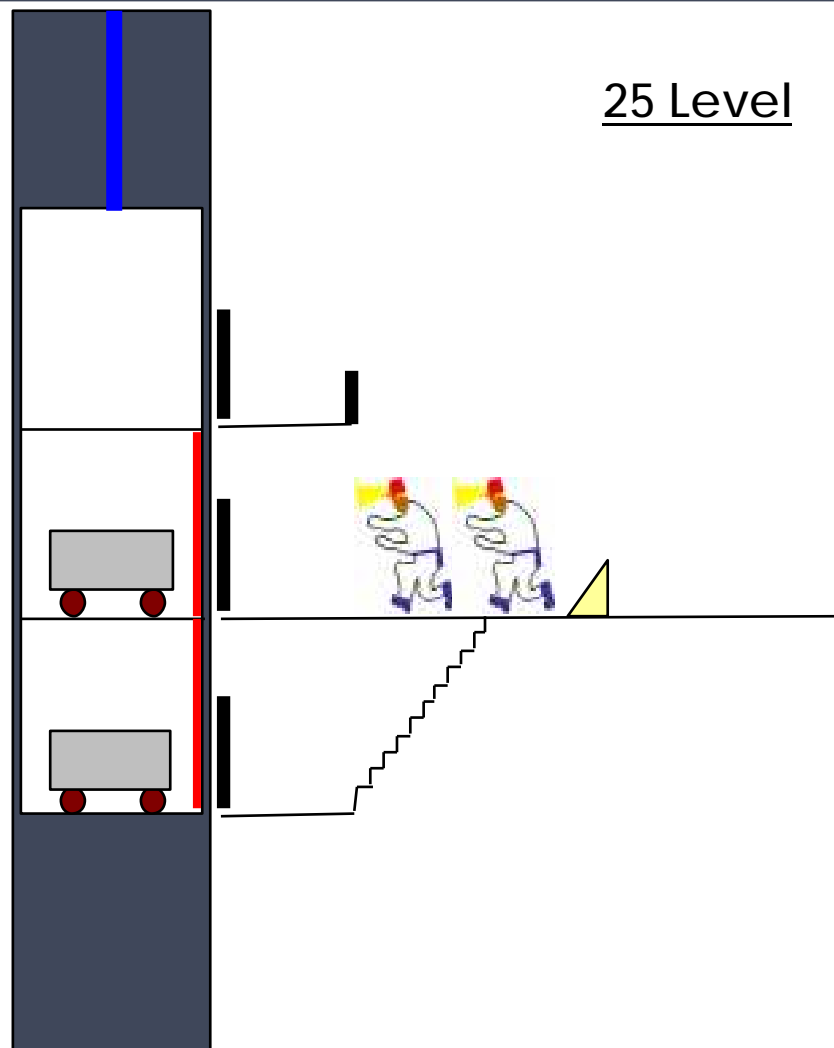
“I never had a problem before, what could go wrong!!”



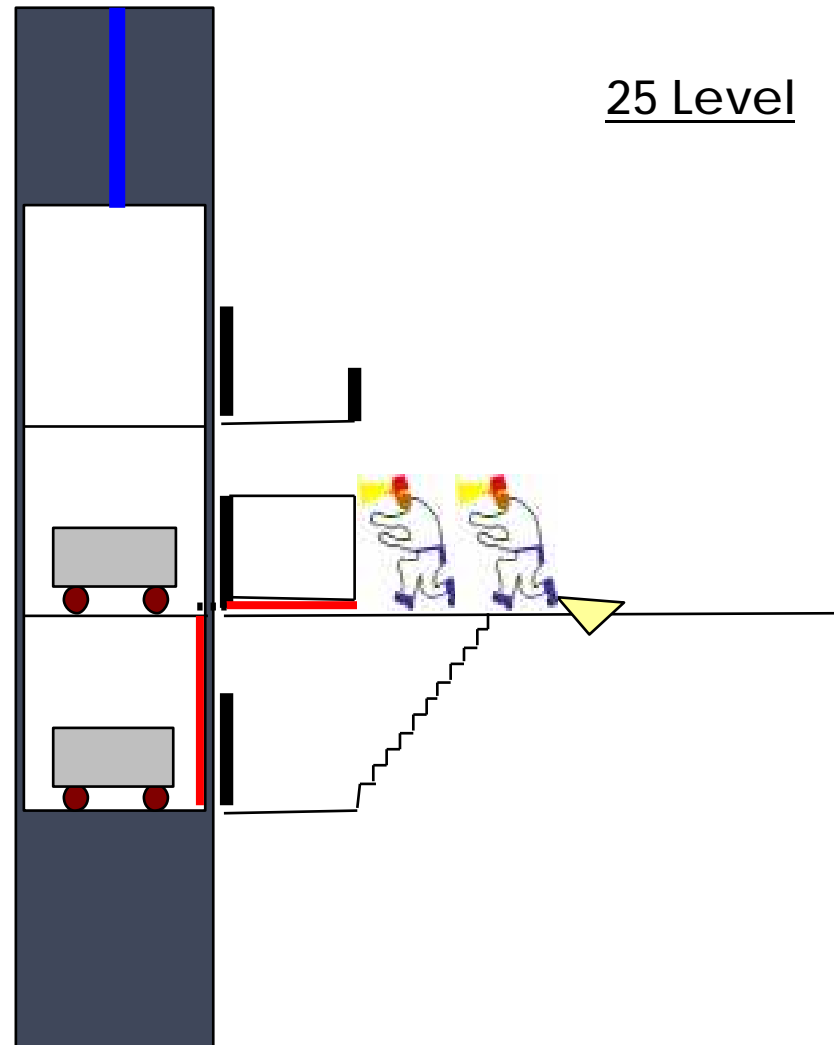
Description of the Incident

- On the afternoon shift of the 12 July 2006, shaft members were busy with lowering hoppers to various levels.
 - After removing a hopper on 25 Level, the pipe sprag was not replaced back inside of the conveyance as per standard.
 - The team, after the onsetter giving the necessary signals, proceeded down to 26 Level. On pull away from 25 Level Station the winder tripped on slack-rope. The driver suspected a nuisance trip (pulled away from the station too quickly) and reset the winder continuing down to 26 Level and stopped on 26 Level assuming the conveyance reached its destination.
 - The conveyance in the mean time was stuck on 25 Level held up with the pipe sprag causing the winder rope to be paid out on top of the conveyance.
 - Subsequent to this, a box controller who was on 25 level came past the station and noticed the slack rope. He phoned the driver, and notified him about the condition and also informed the people in the cage . People in the cage were evacuated
 - All winding operations was stopped, and the necessary people were called out and the conveyance was successfully recovered.
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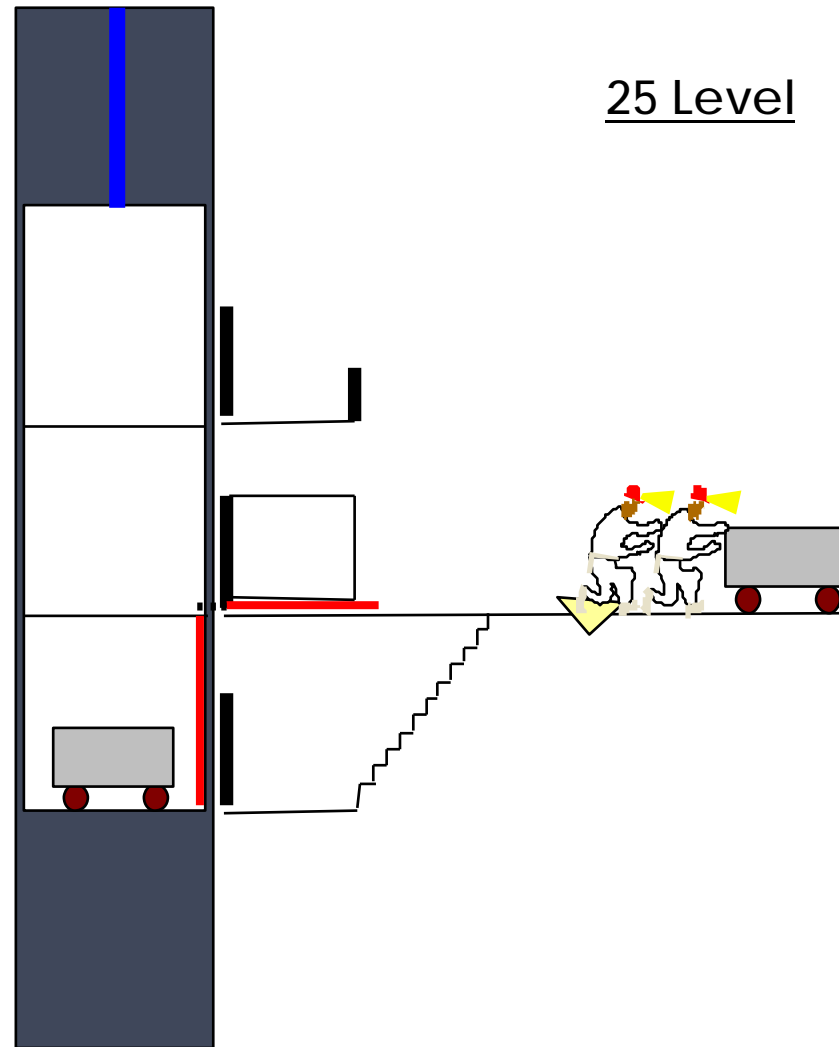
Sequence of events



Sequence of events



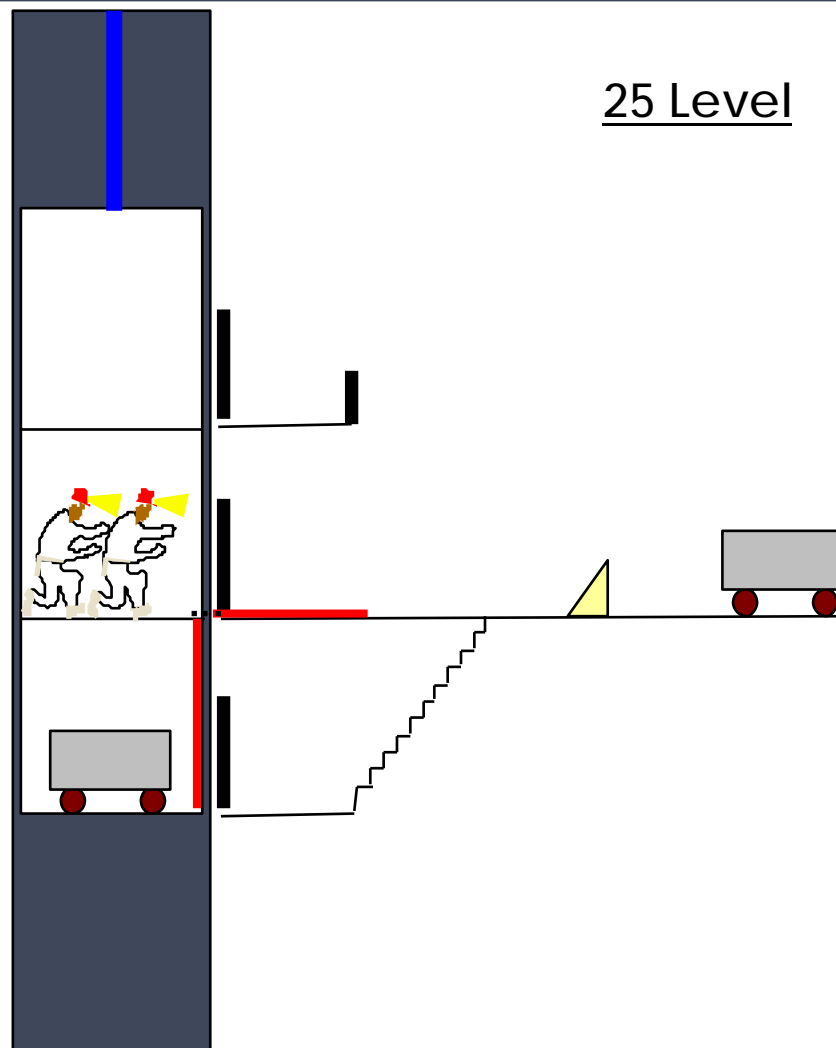
Sequence of events



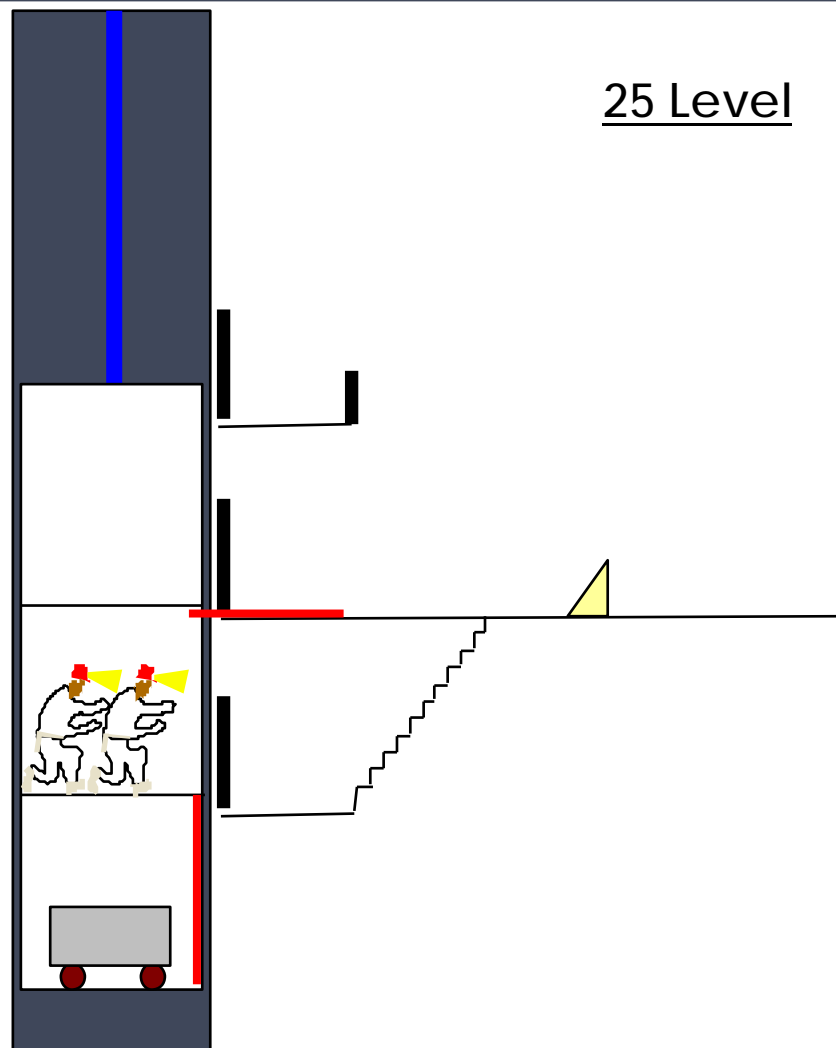
Sequence of events



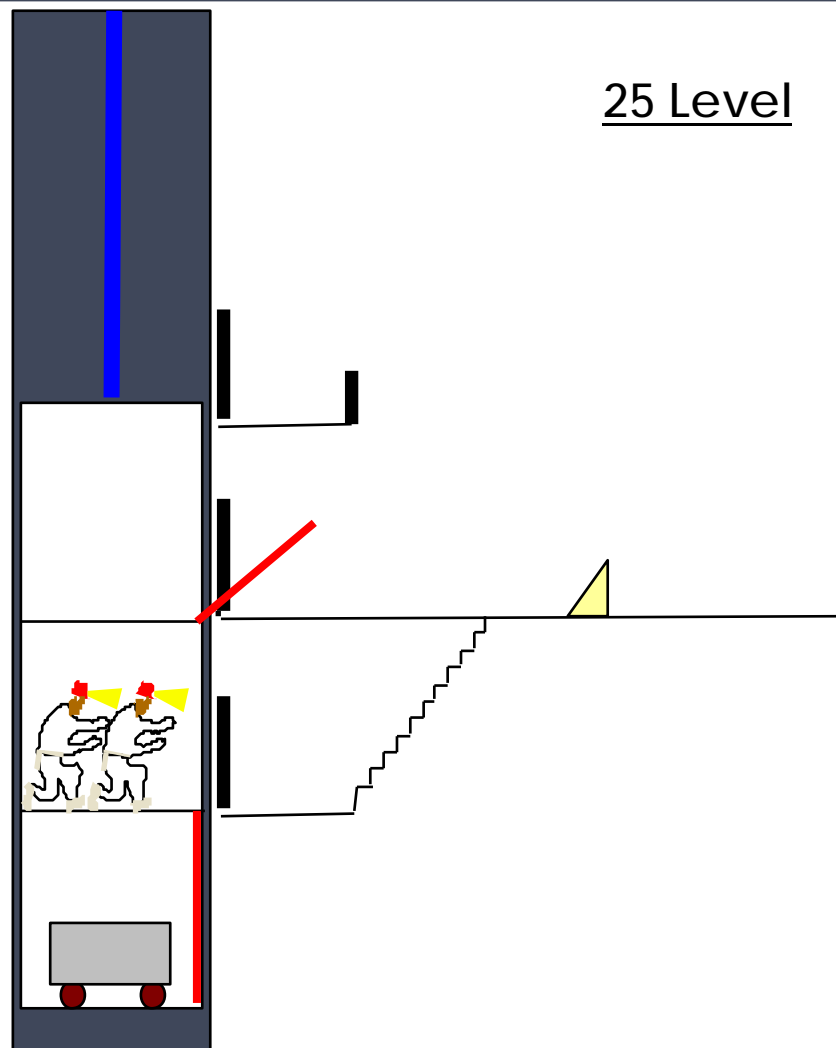
25 Level



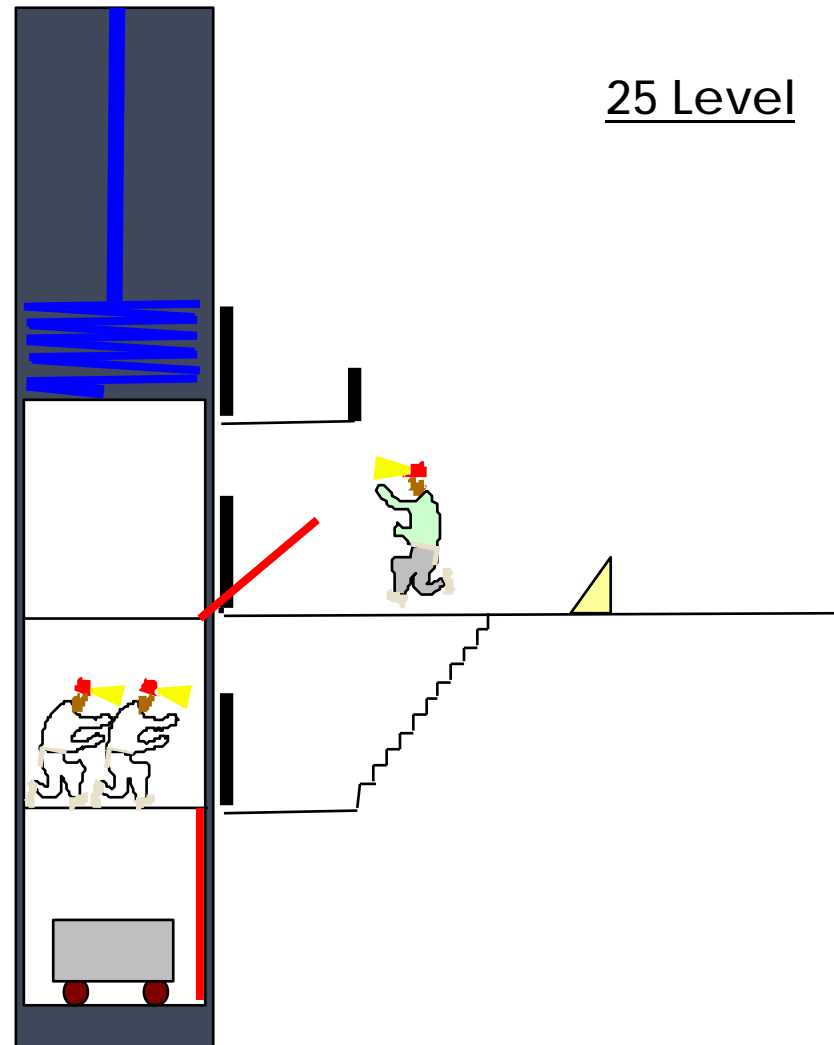
Sequence of events



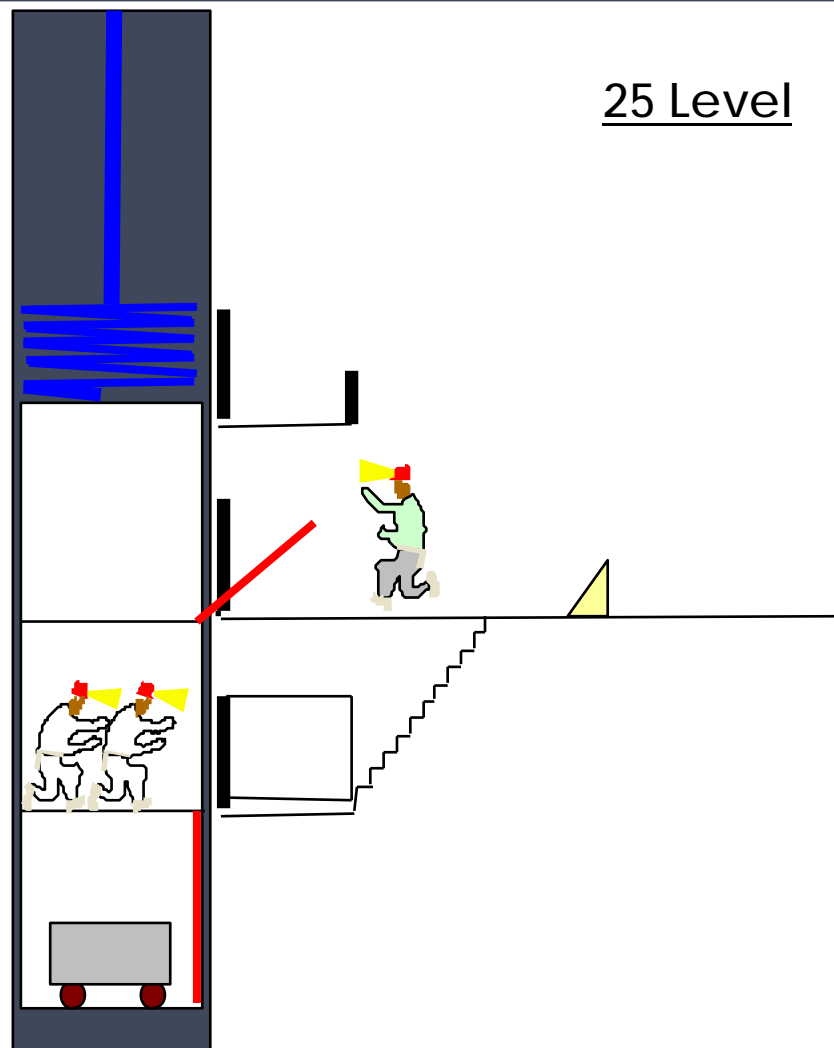
Sequence of events



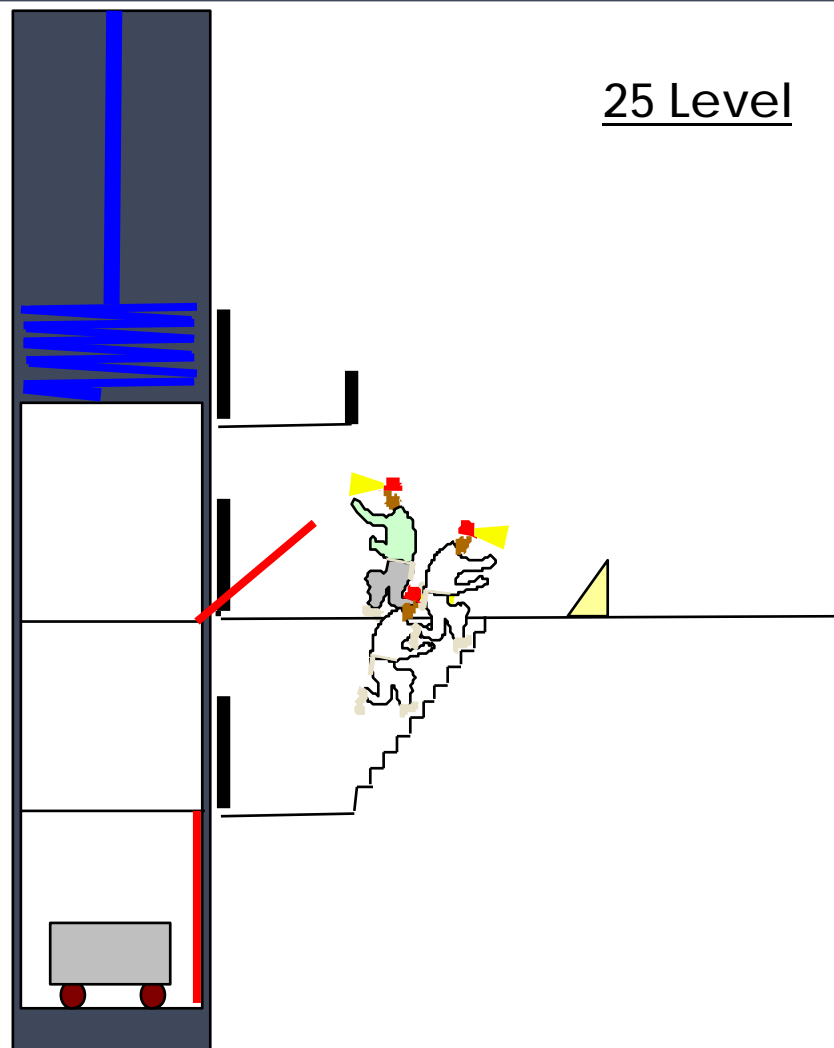
Sequence of events



Sequence of events



Sequence of events



25 Level Station



Photographs



Findings and Recommendations

Findings	Recommendations
<ul style="list-style-type: none"> • The pipe sprag, with its chain attached to it, can be removed and placed on the station outside the cage. • Pipe sprag visibility. • Slack/Tight Rope detection system inadequate. • Cage design • Station design • Emergency procedures when slack rope alarm is activated • Camera system 	<ul style="list-style-type: none"> • Shaft personnel have been instructed to ensure that the pipe sprag is inserted correctly when transporting cars and that it is placed in its storage position before any winder movement. • Paint sprag to be more visible. • Current system design doesn't cater for all types of slack and tight rope conditions. • Artisan at the winder 24 hour to reset of the slack rope system. (Eliminate nuisance trips – Immediate Remedial Action) • Check list was implemented for reset procedure. • Design for doors, locks and sprags for cages. • Illumination on stations to be sufficient • Limit the gap to 20 mm between station floor and shaft gate • All winders must be stopped for slack rope alarms. • Provide all busy levels with a camera system to monitor operations.

Systems



Systems	Recommendations
<ul style="list-style-type: none">• Slack Rope Monitoring Device• Logbooks• Procedures• Shaft audits	<ul style="list-style-type: none">• Look into using a more reliable system that does not give nuisance trips.• Redesign logbook to be user friendly and applicable• Procedures when shaft personnel does not turn up for work• Procedure when Contractors are used in shafts• Shaft personnel certification• Solit system to block untrained people to work on shafts• Workshop Recovery procedures• Do Engineering cross audits on shafts quarterly

At Risk Activity



Activity	Recommendations
<ul style="list-style-type: none"><li data-bbox="367 427 1167 523">• Shaft members did not replace the pipe sprag back into the cage.<li data-bbox="367 687 1122 831">• Procedures were not followed on resetting the winder after a slack rope condition.	<ul style="list-style-type: none"><li data-bbox="1211 427 1995 624">• Ensure that the pipe sprag is placed back into the cage in its storage position directly after the car has been removed from the cage.<li data-bbox="1211 687 2018 1034">• Slack Rope Condition Special Instruction to be adhered to. Another special instruction was given out that no W.E.D shall reset a slack rope condition and that the Engineer shall be called immediately to take further action.



Recommendations

- Re-enforce and discuss procedures, special instructions and discipline with all parties.
- All slack rope conditions, special instructions and procedures to be reviewed and corrected where necessary.
- All nuisance trips on the current slack rope monitoring system will be recorded and investigated. Only on the Shaft Engineers instruction will a slack rope condition be reset.
- Ensure that only competent people work in shaft areas

Conclusion



- Incidents of this nature have the potential to cause multiple fatalities and should be avoided at all costs.
- There are factors that contribute to cause a serious incident and should any of these factors not fail, the incident is would have likely not have taken place.
- Recovery Procedures for different situations must be looked at.
- As Engineers, we must change the culture of people, to participate in the safety of our areas of responsibility by following the correct procedures, standards and do the work properly and safely according to the law.



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End

Any questions/comments?

