INVESTIGATION LEARNINGS

# The importance of error/failure tolerant workplaces

*ISSUE DATE: 27 Feb 20*

## DETAILS

***Photo 1*** *- ADT bin over*

***Photo 2*** *- Deflated postion 3 tyre*

A recent incident relating to the uncontrolled movement of an articulated dump truck's (ADT) load bin has reinforced the reason why we have separation standards and also highlighted the need for failure tolerant task design and setup. Regarding this incident, an investigation found that the position 3 tyre on the ADT was punctured sometime prior to the incident. As air pressure was slowly lost, a point was reached where internal tyre pressure could no longer maintain the seal between tyre and rim. Catastrophic loss of tyre pressure occurred on a right-hand bend on the haul road resulting in uncontrolled movement of the loaded load bin. The last speed record on the ADT's telematics system was 15kph. There were no injuries resulting from the incident.

## DISCOVERIES

An investigation discovered:

- All six tyres on the ADT were found to be *near new*.
- On resealing and reinflation, a tyre fitter discovered the position 3 tyre had a puncture.
- Witness marks on the haul road and the deflated tyre's side wall, showed that the wheel/tyre had rotated at least once whilst flat prior to the bin rolling.
- The project team's VMP was found to be of a high quality, with a separation rule *no LVs on the haul road* enforced.
- By task design, the mechanical failure that led to the uncontrolled movement occurred in a failsafe environment.

## LEARNINGS

The key learnings to take away from this incident are:

- Mechanical failure or operator error can happen at any time. Like the task setup associated with this incident, it's vital that tasks are designed so that in the unlikely event that a failure does occur it happens in a fail-safe environment i.e. no one, ever, in harm's way.

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## ACTION REQUIRED

**Supervisors:**

- Set aside 10 minutes and arrange a toolbox training session to be attended by all workers.
- Discuss this investigation learnings document and encourage a conversation that enables the less experienced team members to ask questions and learn from the more experienced.
- Emphasise the importance of setting up a task so that if mechanical failure or operator error occurs, it can do so safely (i.e. safe to fail - no one in harm's way).
- Reinforce the importance of prestart safety checks – so that we can spot and report the problem/defect/hazard and rectify it before an event occurs.
- Reinforce the importance of workers being *line of fire* aware. Again, you never know when mechanical failure or operator error may occur, so keep out of the line of fire. Explain the term *line of fire* for the benefit of the less experienced workers.
- Record the toolbox talk on the attached sheet.
- Display a copy of this learnings document where workers can read it.

**PMs/QMs/Site Managers**: Feel free to share a copy of this document with your client, client's rep etc.

**Issued by:** Dean Ellis (Group WHS Manager)

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**RECORD OF COMMUNICATION**

**PROJECT/WORK AREA:** **DATE:**

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