Mining operations on ports

Western Australia has the largest network of ports in the nation. Port operations have the potential to cause serious and fatal injuries due to their proximity to water, traffic movement (cranes, freight containers, trucks) and potential structural damage (corrosion from salt).

This snapshot covers the period from 1 March 2017 to 28 February 2018 when there were 1,197 injuries and 2,479 notifiable incidents (specific reporting categories). Of these, 33 injuries and 102 notifiable incidents took place on mining operations in port facilities.

Injuries by severity
- 27 of the 33 injuries on port operations were classified as serious
- 13 of the 33 injuries were lost time

Injuries by nature
- 27 of the 33 injuries were musculoskeletal
- 15 of the musculoskeletal injuries were sprains and strains

Injuries by employment type
- 16 Company
- 17 Contractor

Injuries by part of body
- 14 of the 33 injuries were to the upper limb
- 10 of the upper limb injuries were to the hand and wrist

Injuries by occupation
- 14 of the 33 injuries were metalworking trades (fitter, boilermaker and trade assistant)

Notifiable incidents by reporting category
- 31% Serious or appears to be serious (including fatality)
- 23% Electric shock or burn or dangerous occurrence involving electricity
- 20% Outbreak of fire above or below ground
- 14% Potentially serious occurrence
- 9% Incidents affecting registered plant
- 3% Loss of control, failure of braking or steering of heavy earth moving equipment

Port operations by incidence rate (number of injuries and notifiable incidents per number of employees)

Note: The information in this snapshot has come from a keyword search of incident reports.
Spotlight on Mines Safety
Significant Incident Report
No. 184

Shiploader rail clamps fail after original parts modified in unsuccessful attempt to overcome problem of rail misalignment
1 July 2013

Spotlight on Mines Safety Bulletin
No. 103

Failure of maintenance jacking points on stackers, reclaimers and shiploaders during replacement of slew bearings
22 January 2013

During the exchange of a reclaimers slew bearing, it was noticed that one of the three jacking points was yielding. Jacking ceased immediately and the original equipment manufacturer was contacted. If the jacking operation had not been terminated, major structural collapse would have resulted.

Contributory causes
- The design was a duplicate of that for another reclaimers but the “park” or “service” position had been moved for operational reasons.
- The implications of changing the design details and whether it was still fit-for-purpose had not been recognised by any party.
- The necessary stiffeners or webs situated under the jacking points had not been installed in the appropriate locations in the modified configuration.

Key message
Before making repairs, a competent person should determine the root cause of the failure and how to address the underlying problem. Alternate or modified parts should be assessed by a competent person as meeting the original equipment manufacturer’s performance specifications.

Photographs showing rail clamp as designed by original equipment manufacturer (top) and modified rail clamp (bottom) with open-ended slots and welded nuts and bolts

Safe work practices
Examples include:
- Always follow safe working procedures and the original equipment manufacturer design, specifications and instructions
- All maintenance work needs to be regularly monitored and supervised throughout the shift to verify compliance with safety requirements
- Where there is the potential to fall into water, ensure workers wear an approved personal flotation device (PFD) at all times. Always confirm that the PFDs are functional prior to use
- Identify and control stored energy hazards for any work being undertaken and always follow isolation procedures

Incident example

Falling object 07/09/2016
A maintenance technician was cleaning a fire extinguisher sign at a port facility when the sign fell from the slew deck. The sign, weighing 1.5 kg fell 10 m onto the road below.

Fatigue 13/11/2015
The driver of a light vehicle (LV) fell asleep at the wheel while travelling on a port facility causeway adjacent to a conveyor. As a result the LV veered to the right and across the oncoming lane, before coming into contact with a light pole and the structure of the conveyor.

Procedure not followed 05/04/2016
During an electrical isolation at a port facility the correct procedure was not followed. The power supply had been fully isolated using a lockable isolator and tested for dead; however, the lock and tag used were not compliant with the site’s procedure.

Fatalities on port operations
Examples include:
- Mines Safety Significant Incident Report No. 171 Fall from cantilevered scaffold platform
- Mines Safety Significant Incident Report No. 151 Crushed in a pinch point of fixed elevating work platform (EWP)