Investigation information release

Date: March 2024

Worker injured when struck by a forklift attachment

Incident date: 2 March 2024

Event: Worker injured when struck by a forklift attachment

Location: Cedar Point Quarry, Edenville NSW

Overview

A worker was injured when he was struck by a forklift's jib attachment. The jib, and the forklift's tynes and headboard detached from the forklift, which was being used to recover a damaged truck cabin.

The mine

Cedar Point Quarry is an open-cut quarry near Casino in the Northern Rivers area of NSW. The quarry is operated by Grahams Quarry Cedar Point Pty Ltd. It produces aggregates that are supplied to local councils and the general public. The quarry uses mobile plant and equipment to crush and screen extracted materials and has a fleet of road trucks that transport the extracted materials. The quarry employs about 18 workers including truck drivers, mechanics and administration staff.

The incident

An apprentice mechanic was conducting an inspection of a tipper truck and dog trailer in the quarry's workshop on 1 March 2024. The hydraulic tilt lift cylinder detached from its mount as the worker tilted the cabin forward. This caused the front and top of the cabin to impact the ground.

Figure 1 Truck cabin in contact with ground

The quarry operator's managing director, safety officer, mechanic and apprentice mechanic planned to lift the cabin to a position that would permit the hydraulic arm to be reattached on 2 March 2024. It was determined that the safety officer would operate the quarry operator's forklift to perform the task. It had a rated load of 2,500 kilograms.

A 2.9-metre-long jib was attached to the forklift's tynes. The jib was previously used at the quarry to lift items that were much lower in weight than the truck cabin.

Chains were used to connect the jib to 2 connection points on the underside of the cabin. No specific assessment was undertaken to determine the effect that using the jib attachment would have on the forklift's rated load, or the lifting load of the truck cabin.

The cabin was initially raised about 0.5 to 1 metre above the ground. The mechanic was standing in close proximity to the forklift and jib attachment, approximately 400 millimetres from the truck's front offside bumper. The apprentice mechanic stood on the truck's offside, about 1.3 metres from where the cabin had impacted the ground. The managing director stood near the truck's front nearside wheel.

The safety officer raised the jib approximately 200 to 300 millimetres above its original raised position. The jib was approximately 2.5 metres above the ground at this point. The headboard detached from the body of the forklift. The forklift's tynes also detached from the headboard, causing the tynes and the forklift end of the jib to swing forward and down. The far end of the jib was suspended by the chains that remained attached to the underside of the truck's cabin.

The end of the jib that was connected to the forklift's tynes struck the mechanic's leg, causing him to move to the ground. The tynes remained engaged in the jib pockets and hit the ground in close proximity to the mechanic. The headboard from the forklift and the jib were suspended above the mechanic as he lay on the ground.

Figure 2 Position of tynes and jib following incident

First responders immediately assisted the injured worker, rendering first aid until emergency services were contacted and paramedics arrived. The worker was treated at the scene and then taken to Lismore hospital where he was admitted. He underwent surgery for fractures to his leg and treatment for a spinal injury.

The investigation

The Regulator has commenced an investigation to determine the cause and circumstances of the incident that will explore, among other things, the:

- configuration and operation of the plant and equipment involved in the incident
- instruction, training, experience and supervision of workers
- adequacy of risk assessments, work instructions and procedures relevant to the plant and equipment and task being performed at the time of the incident
- adequacy of the quarry operator's safety management system including control plans and associated procedures governing the management of mechanical engineering hazards and risks
- work practices of the quarry workers use of the forklift and connected equipment.

The quarry operator and workers are assisting with the investigation. A report will be published at the conclusion of the investigation.

Safety information

Quarry and mine operators are reminded of their duty to identify hazards and manage risks to health and safety in accordance with provisions of the *Work Health and Safety Act 2011* and *Work Health and Safety (Mines and Petroleum Sites) Act 2013* and Regulations.

In particular, quarry and mine operators must:

- ensure fabricated forklift attachments are designed, assessed and certified by a competent person such as an engineer and are suitable for the load to be lifted or moved
- ensure forklifts and tynes are designed, rated and maintained to safely function with lifting jibs, when loaded to its maximum rated capacity
- ensure the stability and lifting capacity of forklifts, when fitted with rated and certified lifting jibs, are known and the load's centre of gravity relative to the forklift is factored into pre-lift risk management processes
- develop and implement a safe system of work in relation to the operation of forklifts to ensure that risks to operators and other workers are eliminated or minimised so far as reasonably practicable
- ensure that loads are controlled when lifted
- enforce suitable exclusion zones that appropriately account for the potential of suspended loads to drop, swing and topple
- ensure loads are not suspended near or over a person unless the plant is designed specifically for that purpose
- ensure that workers are provided with adequate information and training about calculating safe lifting loads, including education about the reduced load capacity when forklift attachments are used
- ensure that forklift operations are supervised by a competent person.

When using a jib attachment, quarry and mine operators should:

- ensure the actual load capacities for each rated lifting points along the jib are clearly identified by the manufacturer on a permanent plaque affixed to the jib
- ensure forklifts have a capacity nameplate affixed showing the determined load capacities for the forklift and the attached tynes.

Workers are reminded of their duty to take care for their own health and safety and that of their co-workers. They must also comply with reasonable work instructions, policies and procedures.

In particular, workers must:

- be aware of their surroundings and ensure that that they do not position themselves under, or within, the drop, swing or topple zone of suspended loads or lifting attachments
- ensure that they are licensed and capable of determining relevant load ratings before operating a forklift fitted with a lifting jib

- comply with safe work procedures, hazard identification and risk management processes, and always wear appropriate personal protective equipment while working within hazardous work environments.

Further information

Please refer to the following guidance materials:

- Australian Standard 2359 – 2013: Powered industrial trucks. Part 2: Operations
- Model Code of practice: Managing the risks of plant in the workplace (Safework Australia)
- Forklifts - Information sheet for owners and operators (Safework Australia)
- General guide for industrial lift trucks (Safework Australia)
- MDG 15 - Mobile and transportable plant for use on mines and petroleum sites

About this information release

The Regulator has issued this information to draw attention to the occurrence of a serious incident in the mining industry. Further information may be published as it becomes available.

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