

## Spotter Loses Fingertips in Excavator Quick Coupler

### INCIDENT FACTS

**REPORT #:** 71-242-2023s

**REPORT DATE:** July 17, 2023

**INCIDENT DATE:** July 5, 2018

**WORKERS:** 20 years old

**INDUSTRY:** Site Preparation Contractors

**OCCUPATIONS:** Spotter

**SCENE:** Excavation site

**EVENT TYPE:** Caught in / between



# *INJURY NARRATIVE*



A 20-year-old worker lost three fingertips from his right hand when a quick coupler connecting a bucket to an excavator failed. He had been with the employer for 5 months, working as a ground person.

# *INJURY NARRATIVE*



The young worker was part of a crew setting up a shoring system. He was spotting for an operator who was using the bucket of a rented excavator to pound in a steel piling. When finished, the operator lowered the bucket to the ground.

# *INJURY NARRATIVE*



Just then, the spotter noticed the safety knuckle of the quick coupler on the ground. It had detached from the coupler where it connected the bucket to the excavator.

He picked up the knuckle and moved in front of the bucket where he used his hands to feel around inside the coupler and tried to reattach the knuckle.

# *INJURY NARRATIVE*



Suddenly, the wedge of the coupler locked into place crushing his fingers between the wedge and the bucket.

The incident evolved into a 3-hour, multiple agency technical rescue. The spotter lost the tips from the first three fingers of his right hand.

# ***INJURY NARRATIVE***



Investigators found:

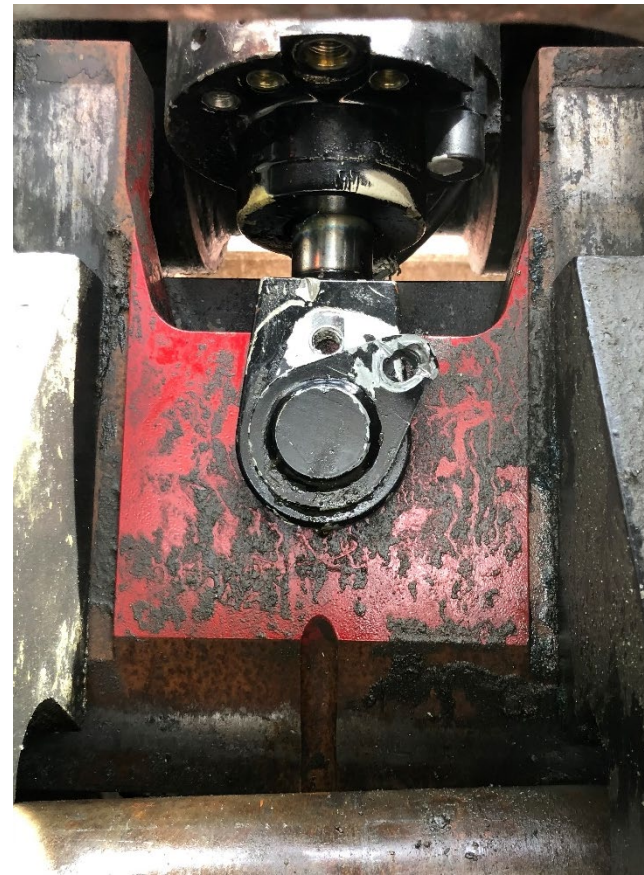
- The operator inspected the quick coupler earlier that day, confirmed the wedge was locked in place and there were no hydraulic leaks, and used the excavator for seven hours prior to the incident.
- The operator nor anyone else on site heard a detachment alarm when he lowered the bucket or when the safety knuckle detached from the coupler.
- No evidence of exactly what caused the knuckle to detach.
- The spotter did not communicate to the operator when he attempted to reattach the knuckle.

# INJURY NARRATIVE



**Photo 1.** Quick coupler connecting bucket to excavator boom with illustrations of approximate locations of wedge (center) and safety knuckle (on left). Not to scale.

# INJURY NARRATIVE



**Photos 2 and 3.** View of the wedge lock within the coupler on the left and close-up of the wedge in the unlocked position on the right.



# INJURY NARRATIVE



**Photos 4 and 5.** Two views of the detached safety knuckle that the spotter was attempting to reattach when his fingers were crushed.

# INJURY NARRATIVE



**Photo 6.** Rescue workers using bracing to prevent the bucket from shifting and other tools while trying to free the spotter's fingers from the coupler.

# INJURY NARRATIVE



**Photo 7.** Bracing and tool that rescue workers used to stabilize the bucket and retract the wedge while trying to release the spotter's fingers.

## Requirements

The employer was not cited for violating safety standards. However, the following rule can prevent workers from being struck and killed by falling attachments.

- You must not permit any employee underneath loads handled by lifting or digging equipment. See [WAC 296-155-655\(5\)](#)

## **Recommendations**

FACE investigators concluded that to help prevent similar occurrences:

- Train equipment operators and workers on the ground to:
  - Never place hands inside the quick coupler or anywhere near the linkage mechanism while the hydraulic system is pressurized or the machine is on.
  - Never attempt to repair failed equipment and to notify site supervisors when issues with equipment are suspected or noticed.
  - Always communicate intentions and wait for confirmation before proceeding.
- Use an excavator-mounted pile driver instead of a bucket to drive piles.

# INJURY NARRATIVE



*This narrative was developed to alert employers and workers of a tragic incident in Washington State and is based on preliminary data ONLY and does not represent final determinations regarding the nature of the incident or conclusions regarding the cause of the injury.*

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