



Worker fatally injured in fall from tank trailer

August 7, 2020

The contents of this report

This document reports the Alberta Occupational Health and Safety (OHS) investigation of a fatal incident that occurred in August 2020. It begins with a short summary of what happened. The rest of the report covers this same information in greater detail.

Incident summary

A worker was standing on top of a semi-trailer tank trailer to repair the collar on a fill nipple using a length of pipe. The worker lost their balance, fell to the ground and sustained a fatal injury.

Background information

Employer

Electra Welding (1988) Ltd. (Electra) was incorporated in Alberta on May 20, 1988. Electra was located in Wainwright, Alberta. Electra provided a variety of commercial welding services including vehicles, radiators and metal fabrication. Two family members were Owners and Directors. One of the owners was a journeyman pipefitter and was actively involved with the day-to-day work. In addition to the Owner, Electra employed four workers at the time of the incident.

Owner

The Owner was a journeyman pipefitter and operated Electra for 32 years. The Owner supervised the work of employees and directly engaged in the work of the business. The Owner was standing on the top of a semi-trailer tank trailer after straightening a bent nipple used to load and unload the trailer with liquid products at the time of the incident.

Worker 1

Worker 1 was a family member and had worked at Electra for an extended period. Worker 1 was operating a forklift to assist the Pipefitter/Owner with the repair to the tank trailer. At the time of the incident, Worker 1 was seated in the cab of the forklift.

Worker 2

Worker 2 was a journeyman welder and had worked at Electra for approximately 10 years. At the time of the incident, Worker 2 was inside one of the work bays. Worker 2 saw the Owner fall and called 911 for assistance.

Worker 3

Worker 3 was the office manager and working in the office at the front of the building at the time of the incident. The work yard was out of sight of Worker 3.

Work site, equipment and materials

Work site

Electra Welding (1988) Ltd. (Electra) was located on 1 Avenue in Wainwright. The office was located at the front of the single building (Figure 1B). There was one pull through work bay with overhead doors on the front and back of the building (Figure 1A and Figure 2C).



Figure 1. Electra building - south side

- A. Pull through work bay
- B. Office

Two smaller work bays had doors opening into the work yard (Figure 2A and 2B). The work yard was located at the back and sides of the building and was fully enclosed by a chain link fence. There were two gates in the fence, one on the north side and the other on the east side of the building (Figure 3). Materials were stored in the work yard, and it was used to park vehicles requiring service. The work yard was level, and the surface was compacted earth.



Figure 2. Electra building - north side

- A. Work Bay 2*
- B. Work Bay 3*
- C. Work Bay 4 – pull through bay*



Figure 3. Electra building - east side access to work yard with tank trailer parked in location of incident

Semi-trailer tank trailer

The semi-trailer tank trailer (tank trailer) was delivered to Electra on August 6, 2020 by its owner. The tank trailer was parked on the southeast side of the work yard. The tank trailer owner reported that during product unloading, the nipple on the top of the tank trailer was damaged when the truck operator pulled away from the loading station with the product delivery nozzle still inserted in the pipe nipple. Electra was asked to straighten the nipple so the tank trailer could be returned to service.

A catwalk ran the length of the top of the tank trailer (Figure 4A). A permanently affixed ladder (Figure 5A) was used to access the top of the tank trailer.

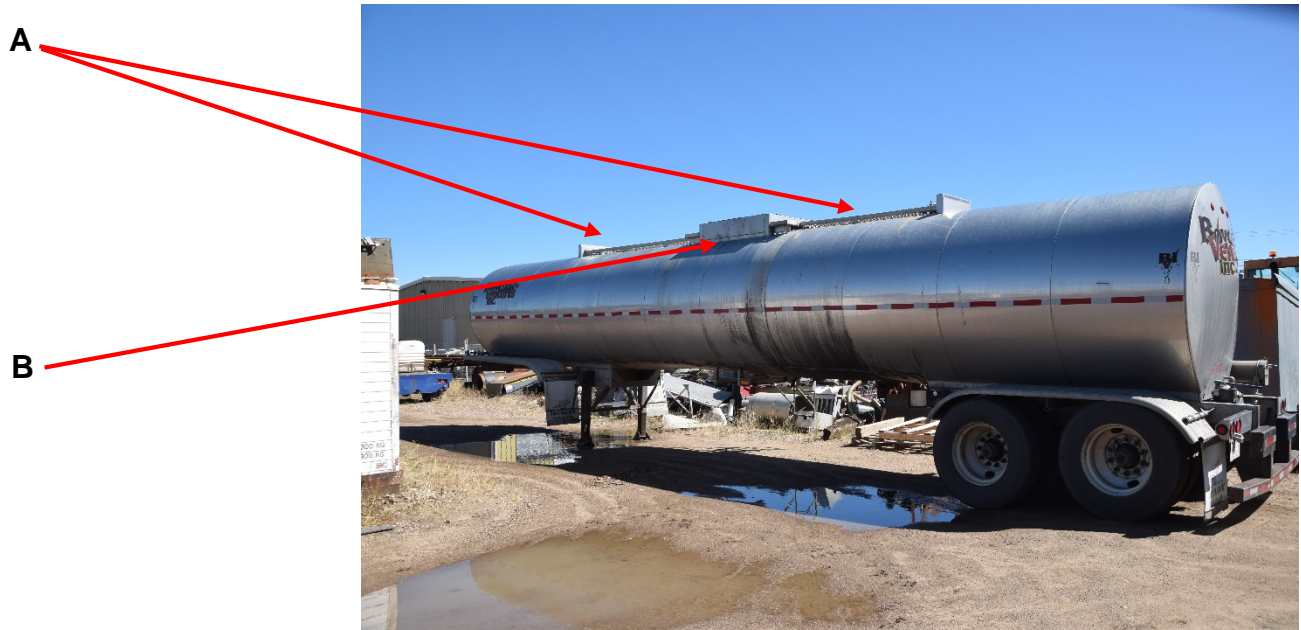


Figure 4. Tank trailer - driver's side

A. Catwalk

B. Valve location and location of Owner at time of incident

A



*Figure 5. Tank trailer - passenger side - affixed access ladder
A. Access ladder to reach catwalk*

A cluster of valves and access hatch were located approximately midway on the top of the tank trailer (Figure 4B and Figure 6).

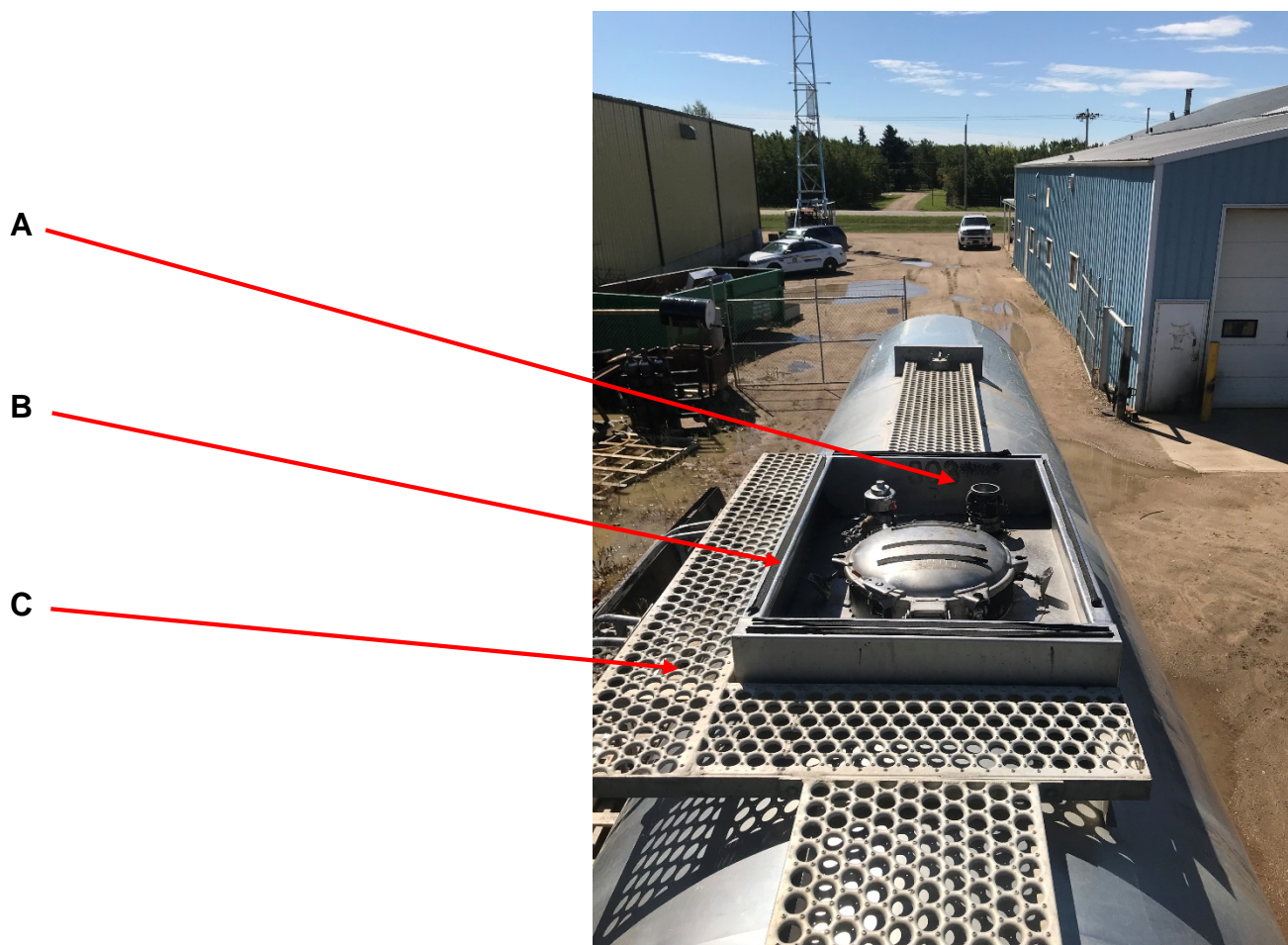


Figure 6. Top of tank trailer – catwalk and valve cluster

- A. Damaged nipple
- B. Valve cluster
- C. Catwalk

Shop built pipe straightening tool

A length of pipe was selected from among materials at the Electra work yard to use as a straightening tool. A metal tab was welded to the pipe to act as a stopper and as a point of contact for pushing the pipe when the tool was inserted into the nipple on the tank trailer.

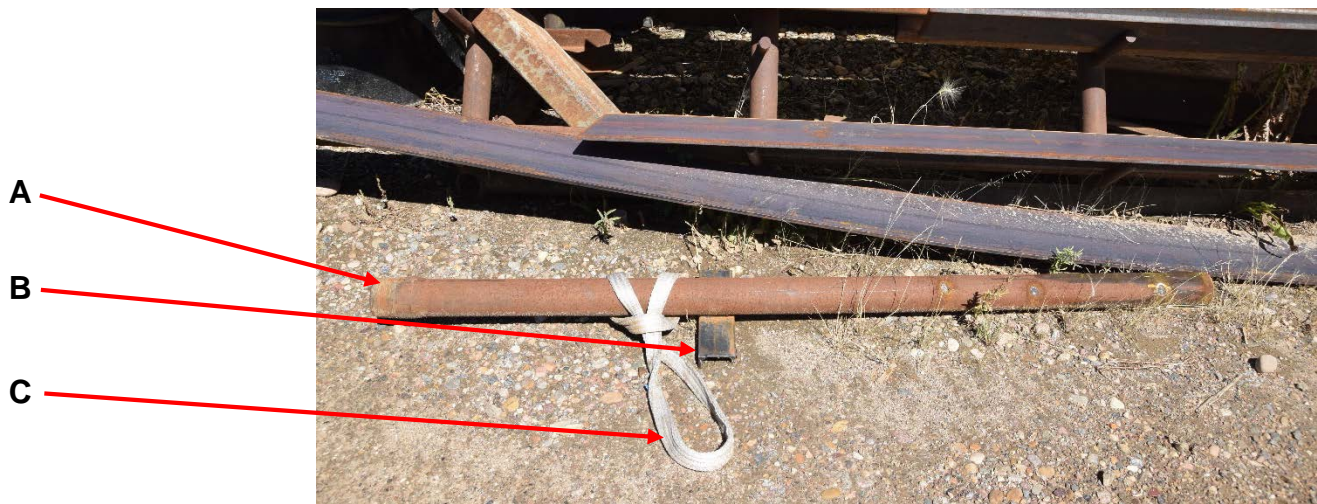


Figure 7. Shop Built pipe straightening tool

- A. Pipe
- B. Metal tab
- C. Webbing sling

Sequence of events

On August 6, 2020, the owner of a tank trailer delivered the tank trailer to Electra. The tank trailer was parked inside the fence on the east side of the Electra work yard (Figure 3) to wait for repairs to a damaged nipple on the top of the tank trailer (Figure 6A).

On August 7, 2020, the Owner, Worker 1, Worker 2 and Worker 3 started work as usual in the morning.

Following the lunch break, the Owner selected a length of pipe and welded a flat metal tab to the pipe (Figure 7A and 7B). The metal tab also acted as a stopper to prevent the pipe from falling into the tank trailer.

The Owner and Worker 1 discussed the work to repair the tank trailer. They intended to insert the pipe straightener in the damaged nipple and use a forklift to push on the tab, straightening the nipple. They discussed being careful to watch footing while working on top of the tank trailer.

The Owner used the metal ladder permanently attached to the tank trailer (Figure 5A) to climb to the top to access the damaged nipple. The Owner was standing on the catwalk on top of the trailer (Figure 6C). Worker 1 used a webbing sling wrapped around the pipe (Figure 7C) and slipped over one of the forklift's forks to lift the pipe to the top of the tank trailer. The Owner removed the pipe straightener from the forklift, leaving the webbing sling attached, and inserted it into the nipple (Figure 6A). Worker 1 adjusted the height of the forklift's forks and slowly drove forward to make contact with the metal tab on the pipe straightener. Worker 1 continued to apply pressure to the pipe straightener until the Owner determined that the nipple was straightened. The Owner directed Worker 1 to back the forklift away from the tank trailer.

Worker fatally injured in fall from tank trailer | Investigation report F-OHS-217033

At approximately 1:15 p.m., the Owner was standing on the catwalk on top of the tank trailer. The Owner moved to toss the pipe straightener to the ground on the west (driver's) side of the tank trailer and lost their balance. The Owner fell approximately three metres to the ground on the same side of the tank trailer. Worker 1 and Worker 2 witnessed the fall.

Worker 1 immediately called for assistance. Worker 2 called 911. The Royal Canadian Mounted Police (RCMP) and Emergency Medical Services (EMS) attended the scene. The Owner sustained a fatal injury and was declared deceased at the work site by EMS.

Completion

A review for enforcement action was completed on May 12, 2021, and it was determined that prosecution or an administrative penalty were not appropriate based on the circumstances surrounding this incident.

This investigation was completed on March 24, 2022.

Signatures

ORIGINAL REPORT SIGNED

Lead Investigator

March 24, 2022

Date

ORIGINAL REPORT SIGNED

Manager

March 24, 2022

Date