

Investigation Report
Worker fatally injured
when working under vehicle
June 11, 2014

The contents of this report

This document reports Occupational Health and Safety's investigation of a fatal accident on June 11, 2014. 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 servicing his personal vehicle at his employer's service shop after normal working hours. After jacking and placing portable stands under the vehicle frame on the driver and passenger side and removing the front wheels, the worker used a mechanic's creeper to roll under the suspended vehicle to inspect the front end. While he was using a pry bar to move the front end back and forth, the stand supporting the truck frame on the driver side toppled. This caused the truck to fall and crush the worker. He sustained fatal injuries.

Background information

Deermart Equipment Sales Ltd. (Deermart) is an active named Alberta company located in Red Deer, AB. The company is a John Deere dealership and has been in operation since 1982. It is owned by four voting shareholders. At the time of the June 11, 2014 incident, Deermart employed 38 people.

Deermart sells and services new and used agricultural equipment including tractors, combines, hay equipment, forager/harvesters, sprayers, and planting, seeding and tillage equipment. Deermart also sells and services lawn and garden equipment, golf and turf equipment, compact utility tractors, and all terrain vehicles. It also includes a retail store that sells John Deere gifts and apparel.

The worker, a service writer, was employed with Deermart since April 10, 2012. He was a salaried employee and typically worked between the hours of 8:00 a.m. and 5:00 p.m., Monday to Friday. He had previously worked intermittently for Deermart as a customer service representative between October 2001 through July 2004.

The service writer was the liaison between Deermart customers and the team of Deermart service technicians but did not himself, do the work of a Deermart service technician. He possessed and maintained Agricultural Machinery Technician certification (Journeyman) that he acquired in 1988.

Equipment and materials

1997 Chevrolet Silverado HD2500 (Chevy truck)

The Chevy truck was a personal vehicle registered to the service writer. After the Deermart shop closed at 5:00 p.m. on June 11, 2014, he brought his truck into the shop to do maintenance work on it (*Figure 1*).



Figure 1. Service writer's truck with the front end elevated and wheels removed.

When the service writer prepared to jack up and work on his truck inside the Deermart shop, at that time the box of the truck contained approximately 825 kilograms of demolition debris from a home improvement project he completed the previous weekend. (*Figure 2*).



Figure 2. Demolition debris in the box of the service writer's truck at the time of the incident.

Norco jack stand (jack stand)

The jack stand is rated for 2.7 tonnes and is designed and intended to be used as an automotive stand. It includes a 19 centimetre by 20 centimetre base comprised of four legs that are equipped with footpads for additional stability on concrete or asphalt. It has an adjustable column with a spring loaded pawl providing a varying height of 30.5 centimetres to 44.5 centimetres.

The adjustable column includes a 2.8 centimetre by 11.7 centimetre recessed top saddle for acceptance of vehicle panel frame rails. The jack stand is intended to be used in pairs. While being used to support the passenger side front end of the service writer's truck, the jack stand was adjusted to a height of approximately 39.5 centimetres (*Figure 3*).



Figure 3. Norco 2.7 tonne jack stand used by the service writer to support the passenger side front end of his truck while servicing it.

- A. Recessed saddle.
- B. Adjustable column.

Fabricated Equipment Stand (skid steer stand)

The skid steer stand was one of four stands manufactured for Deermart by an unconfirmed Red Deer welding shop between 1994 and 1999. The stands were designed and intended to be used to support a skid steer loader off of the ground on all four corners while making steering, tracking and neutral adjustments. They were stored in the lawn and garden equipment section of the Deermart shop with other equipment stands, hydraulic floor jacks and other shop tools and equipment.

The steel skid steer stand includes a 20 centimetre by 20 centimetre steel base plate to which a square 5 centimetre by 5 centimetre steel column is welded. The column is 23 centimetres high and is equipped with an adjustable threaded bolt. The top of the adjustable threaded bolt includes a 6 centimetre by 6.4 centimetre bearing plate.

While being used to support the driver side front end of the service writer's truck, the skid steer stand was adjusted to a height of approximately 39.5 centimetres (*Figure 4*).



Figure 4. Fabricated skid steer stand used by the service writer to support the driver side front end of his truck while servicing it.

A. Bearing plate.

B. 23 centimetre threaded bolt.

C. Column and base plate.

OTC Hydraulic Floor Jack (floor jack)

The floor jack includes a capacity rating of 2.3 tonnes and a lifting range of 12.7 centimetres to 50.8 centimetres. It includes a saddle diameter of 12.7 centimetres, an overall reach of 53.3 centimetres, and a handle length of 95.3 centimetres (*Figure 5*).



Figure 5. Floor jack and jack stand supporting the passenger side front end of the service writer's truck.

- A. Black floor jack with white handle.*
- B. Red automotive jack stand*

Sequence of events

On June 11, 2014, the service writer informed his wife that he intended to service his truck at the Deermart shop after work that evening, and that he planned to be home by 7:30 p.m. He left home at approximately 7:20 a.m. and drove to the Deermart shop. He arrived at the shop at approximately 7:45 a.m., and began his Deermart work duties. At 2:30 p.m. he called his wife and reminded her that he would not be home until 7:30 p.m.

The Deermart shop closed at 5:00 p.m. The service writer drove his personal truck into the shop at approximately 5:20 p.m. He gathered hand tools, an air powered socket wrench, a mechanic's creeper, a grease gun, an automotive jack stand, a skid steer stand, a portable hydraulic jack, and a portable light from the Deermart shop equipment inventory, and placed them next to his truck.

Final Report

The service writer reviewed a list of service items he had prepared that included changing the oil, changing the oil, air and fuel filters, rotating the tires, and examining the front axle and tie rods to try to determine the cause of a clunking sound he had recently noticed.

At approximately 5:45 p.m., the Deermart shop foreman finished his work and walked from his office through the shop. While walking through the shop he spoke briefly with the service writer who was working on removing the tires of his truck.

When the service writer asked the shop foreman where he should dump the waste oil from the oil change he was going to do on his truck, the shop foreman directed him to dump it in the waste oil barrel. The shop foreman then left Deermart.

The service writer used the hydraulic floor jack to jack up the driver side front end of his truck, and placed the skid steer stand underneath the frame of the truck near the driver side door.

The service writer then relocated the hydraulic floor jack to the passenger side of the truck. He placed the Norco automotive jack stand underneath the frame of the truck near the passenger side door. He left the jack in the raised position, as he intended to reverse the process when lowering the truck to the floor when he finished servicing his truck.

The passenger side of the truck was now supported by the hydraulic floor jack and jack stand, while the driver side was only supported by the skid steer stand. Both the driver side and passenger side front tires were raised off the shop floor.

At approximately 6:15 p.m., a Deermart delivery driver finished his work and walked from his office through the shop. He observed that the service writer had the front end of his truck jacked up, and that he was having difficulty removing the driver side front wheel rim from the axle hub.

The delivery driver offered to help the service writer and used a pry bar to free the driver side wheel rim from the axle hub. The delivery driver then exited the building through the main office front door, and while doing so, observed the Deermart general manager manager also leaving Deermart for the night. The service writer was now alone in the shop.

It is believed based on the physical evidence at the scene, and events leading up to the incident, that the service writer proceeded to use the air wrench to remove the lug nuts from the passenger side wheel rim, and removed the rim and tire from the axle hub.

The service writer then proceeded to start working on his truck. He used the mechanic's creeper to roll underneath the raised front end of the truck. He greased the front end and removed the oil drain plug from the bottom of the engine crankcase. He drained the oil from the engine, replaced the oil filter, and reinstalled the oil drain plug. He then filled the engine crankcase with fresh oil.

Final Report

The service writer then proceeded to work on the front axle of his truck. While lying on his back on the mechanic's creeper underneath the raised front end of his truck, he used a steel pry bar and long shafted screw driver to manipulate the front axle assembly back and forth. He was trying to determine the source of a clunking sound he had recently noticed in the front end.

While he was moving the front end steering assembly back and forth with the steel pry bar, the skid steer stand supporting the driver side frame toppled sideways. This caused the driver side of the truck to fall off of the skid steer stand and crush the service writer under the truck.

At 7:38 p.m. the service writer's wife called her husband's cell phone number, because he had not arrived home at 7:30 p.m. as intended. When he did not answer his phone, she continued to call him every 10 minutes, but did not reach him.

At approximately 8:00 p.m., the service writer's wife drove to Deermart. She was worried something had happened to her husband. When she arrived at Deermart, she found all of the doors locked. She could not access the building. She drove back home thinking that her husband may have arrived home in her absence.

When the service writer's wife confirmed that her husband had not arrived home in her absence, she became increasingly worried. She contacted her son and asked him to drive from his Blackfalds residence to Deermart, to check up on the service writer.

While driving to Deermart, the service writer's son called the Deermart after-hours answering service, and was connected to the Deermart on-call mechanic. The on-call mechanic consented to meet the service writer's son at Deermart.

At approximately 10:35 p.m. the on-call mechanic arrived at Deermart accompanied by his wife. The on-call mechanic opened the south shop door to provide access to the shop for the service writer's son.

When the service writer's son entered the Deermart shop he observed his father under the front end of his truck. The service writer's son found a second floor jack nearby and jacked the driver side front end of the truck up enough to pull his father out from underneath the truck. The on-call mechanic directed his wife to called 911 and then tried to offer first aid assistance.

Red Deer Emergency Medical Services (EMS), RCMP and Victim Services were dispatched to Deermart. At approximately 10:51 p.m. on June 11, 2014, EMS pronounced the service writer deceased.

Final Report

Completion

The entire investigation file was sent to Alberta Justice on June 26, 2015.

On October 13, 2015, Alberta Justice completed its review of the investigation file. The review determined that at the time of the incident, the worker was not engaged in an "occupation", despite being at his "work site". As a result of this determination, Alberta Justice did not recommend charges under the Occupational Health and Safety Act, RSA, Chapter 0-2, as amended.

The file was closed on November 9, 2015.

Signatures

ORIGINAL REPORT SIGNED

November 9, 2015

Lead Investigator

Date

ORIGINAL REPORT SIGNED

November 9, 2015

Manager

Date

ORIGINAL REPORT SIGNED

November 9, 2015

Director

Date