

Investigation Report
Worker Fatally Injured After Falling From a Roof
January 19, 2017

The contents of this report

This document reports Occupational Health and Safety's investigation of a fatal injury when a worker fell from the roof of a house in January 2017. It begins with a short summary of what happened. The rest of the report covers this same information in greater detail.

Incident summary

Four workers were installing trusses on a two story house and were about to go for lunch when one of the workers noticed a co-worker slide off of the roof and land on the ground 6.23 metres (m) below.

Background information

Company

ACME BW Contracting Inc. (Acme) was established in 1994 in Acme, Alberta and offers farm and commercial building services such as the construction of barns, Quonset buildings, and cement foundations. At the time of the incident, Acme was installing roof trusses on a house for a residential home owner.

Workers

Business owner was the owner/operator of Acme for 23 years and had 23 years of experience at the time of the incident. The business owner was on the roof installing trusses at the time of the incident.

The injured worker was a labourer for Acme and had been with the company for approximately five years at the time of the incident. The injured worker was on the roof passing trusses from the forks on the telehandler to the other workers on the roof.

Worker 1 was a labourer for Acme and had been with the company for five years and had five years of experience at the time of the incident. Worker 1 was on the roof installing trusses at the time of the incident.

Worker 2 was a labourer for Acme and had been with the company for 1.5 months and had only 1.5 months of experience. Worker 2 was on the roof installing trusses at the time of the incident.

The home owner was the owner of the house, was building the house himself and hired contractors when needed. The owner had a verbal contract with Acme for construction on the house. The home owner had just arrived on site at the time of the incident.

Equipment and materials

The 2005 JLG Model G6-42A (telehandler) was equipped with telescopic forks (Figure 1) and had a rated capacity of 2994 kilograms (kg) with a maximum lift height of 12.8 m. The telehandler was used to lift the trusses to the roof of the house for installation.



Figure 1. Telehandler from the incident

The JLG model 600A (JLG) narrow articulating boom lift with a man basket attached (Figure 2) was used to transport workers from the ground to the roof of the house. The JLG had a working height of 20.42 m and a working outreach of 18.42 m. The man basket on the boom had a capacity of 230 kg with the controls located in the basket and on the side of the JLG.



Figure 2. JLG from the incident

Roof Truss

A roof truss is an engineered structure made up of triangular units. The truss is designed to bridge the space above a room and to support the roof. Roof trusses are spaced at regular intervals to form the roof (Figure 3).



Figure 3. Trusses from the incident

Fall Arrest System

A fall arrest system is a personal fall protection system that, when used correctly, will arrest a worker's fall before the worker contacts the ground. The components of the fall arrest system used in the incident were a full body harness and a shock absorbing lanyard (Figure 4).



Figure 4. The full body harness and the shock absorbing lanyard from the incident

A. The shock absorbing lanyard

B. The full body harness

A full body harness is a harness that is worn by the worker to support the worker's body in the event of a fall.

A shock absorbing lanyard is a device used to reduce the arresting forces during a fall by tearing and lengthening the deceleration distance. The lanyard used in the incident had a 1.55 m deployed length.

Sequence of events

On January 19, 2017, the work day started at 8:30 a.m. in Linden, Alberta for the business owner and the injured worker. Worker 1 and worker 2 started at 9:00 a.m. The task for the day was the installation of roof trusses on a residential house for a home owner. The home owner also arrived at 8:30 a.m. to do some framing inside of the house.

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The injured worker had requested to do work on the ground and not on the roof that morning. Since the only work the company had that day was on the roof installing trusses, the injured worker agreed to work on the roof. A verbal hazard assessment was completed prior to the crew putting on their fall arrest systems.

The trusses were loaded onto the forks of the telehandler and lifted to where they were needed on the roof. The crew got into the basket on the JLG and were lifted onto the roof of the house. The injured worker was assigned the task of removing the trusses, one by one, from the forks of the telehandler and pushing them the 3 m to the rest of the crew for installation.

At approximately 11:30 a.m., the injured worker asked to come down off of the roof and offered to buy lunch for the crew. Since they were close to finishing installing the trusses that were brought up, the business owner said that when the last truss was installed they could go for lunch. At about 11:45 a.m., the injured worker pushed the last truss to the crew and began to get off of the roof. The injured worker unhooked from the roof and was transitioning towards the JLG when the injured worker collapsed. Worker 2 heard a “thud” and saw the injured worker slide off of the roof between the telehandler and the JLG. No sounds were heard from the injured worker, and the injured worker did not try and stop the fall (Figure 5).



Figure 5. Incident location

- A. Location of trusses that were being installed*
- B. Location where injured worker landed*

The injured worker slid off of the roof and landed on the ground 6.23 m below, striking the injured worker's head on a piece of metal. The home owner, who arrived a few minutes before from a trip to town, called 911. The rest of the crew came down from the roof and started cardiopulmonary resuscitation (CPR) while waiting for the ambulance to arrive. When the ambulance arrived, the injured worker was placed into the ambulance and at 12:00 p.m. the injured worker was pronounced deceased.

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Completion

A review for enforcement action was completed on April 25, 2018, and it was determined that prosecution or an administrative penalty were not appropriate based on the circumstances surrounding this incident.

This investigation was closed on May 1, 2018.

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Signatures

ORIGINAL REPORT SIGNED

June 27, 2018

Lead Investigator

Date

ORIGINAL REPORT SIGNED

June 27, 2018

Manager

Date

ORIGINAL REPORT SIGNED

July 20, 2018

Director

Date