

Crushed by Carriage during Skyline-Skidding Operation

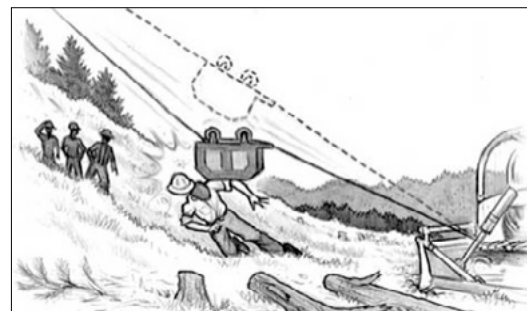
U.S. Department of Labor

Occupational Safety and Health Administration

www.osha.gov (800) 321-OSHA (6742)

INCIDENT SUMMARY

Incident type: Crushed by skyline-skidding carriage
 Weather conditions/Time of day: Dry, mid-80s°F/approx. 1:00 pm
 Type of operation: Skyline-skidding
 Size of work crew: 4
 Worksite inspection conducted: Yes
 Competent safety monitoring on site: No
 Safety and Health program in effect: Yes
 Training and education for workers: No
 Occupation of deceased worker: Logger
 Age/Sex of deceased worker: 37/M
 Time on job: 5 yrs as a logger-first day with employer
 Time at task: 1 hour
 Employment classification (FT/PT/Temporary): Full time
 Language spoken: English
 Union/Non-Union: Non-Union



Art by Phil Fehrenbacher, courtesy of Oregon OSHA.

Figure 1: Artist's depiction shows carriage falling on worker.



Photo courtesy of CDC/NIOSH/Oregon OSHA.

Figure 2: Excaliner with excavator pressed to the ground.

BRIEF INCIDENT DESCRIPTION

A logger, working as a chokersetter in a skyline-skidding operation was killed when the skyline lost tension, causing the carriage to fall and crush him (see Figure 1). It was his first day with the employer. The employer was using a modified machine called an "excaliner" to provide the lift needed to skid the logs (see Figure 2). The excaliner used a draw-works system with a hydraulic braking mechanism to maintain tension on the skyline. Following procedures established by the employer, the chokersetter sounded the alerting horn and the excaliner operator stopped the carriage. The chokersetter locked the carriage on the skyline by remote control and went beneath the carriage to attach the chokers to the logs. While he was under the carriage, the draw-works system motor stalled and the skyline suddenly lost tension, causing the 1,200-pound carriage to drop and crush him.

Likely Causes

The excaliner's skyline hydraulic braking system failed due to pressure loss, causing the skyline to lose tension and the carriage to drop suddenly. The auxiliary brake on the draw-works mechanism also failed. The employer did not ensure that safeguards and safe practices were in place, including failing to:

- Maintain the excaliner, specifically the hydraulic and braking systems, in serviceable condition (29 CFR 1910.266(f)(1)(i) and (f)(7)).
- Also, inspect the excaliner before the workshift started to ensure that it was in operable condition and repair or replace damaged parts and/or defects before starting work (29 CFR 1910.266(f)(1)(ii)).
- Provide training to the new worker prior to starting the chokersetting operation. (29 CFR 1910.266(i)(2)(ii)).

TERMINOLOGY

Carriage: a device with pulleys on the top that rolls along the skyline carrying logs attached to chokers.

Choker: wire rope with attachments used to hook and hold a log above the ground.

Chokersetter: a worker who attaches chokers around logs and to the carriage before it is lifted off the ground.

Draw-works: the primary hoisting mechanism that includes five main parts: a drum, motor, reduction gear, brake, and an auxiliary brake.

Excaliner: hybrid machine (a combined excavator and skidding system) with a line mounted on an excavator, primarily used for logging on steep slopes and rugged terrain.

Mainline: a line that moves the carriage along the skyline between the logs and the landing.

Skyline: wire cable, suspended above the ground with tension between the anchor and excaliner used to support the carriage's weight.

INCIDENT PREVENTION

Employers are responsible for providing a safe and healthy work environment, free from recognized hazards associated with skyline-skidding operations. To prevent fatalities involving equipment failure, employers must ensure that each machine, including excaliners:

- Gets inspected prior the start of each workshift to ensure it is in serviceable condition ([29 CFR 1910.266\(f\)\(1\)](#))*.
- Has operating and maintenance instructions posted on or in the area when the machine is operated and that machine operators and mechanics follow those instructions ([29 CFR 1910.266\(f\)\(1\)\(iii\)](#))*.

Employers must also implement site-specific safe work procedures for skyline-skidding operations and train workers on those procedures, including minimizing time spent standing near the mainline and under the carriage. (*Occupational Safety and Health Act of 1970*, [Section \(5\)\(a\)\(1\)](#)).

Employers should ensure that modifications or additions to a machine that affect its capacity or safe operation are only made with written approval of the manufacturer or a qualified engineer (see [Washington State Logging standard — WAC 296-54-573\(7\) — Logging machines-General](#)).

* The Logging Operations standard applies to all logging operations except the construction and use of cable yarding systems (including skyline skidding). However, other requirements of the Logging Operations standard do apply to cable yarding (e.g., machine inspection and maintenance).

You Have a Voice in the Workplace

The *Occupational Safety and Health Act of 1970* affords workers the right to a safe workplace (see **OSHA's Worker Rights page**, www.osha.gov/workers). Workers also have the right to file a complaint with OSHA if they believe that there are either violations of OSHA standards or serious workplace hazards.

How OSHA Can Help

For questions or to get information or advice, to report an emergency, fatality, hospitalization, amputation or loss of an eye, or to file a confidential complaint, contact your nearest OSHA office, visit www.osha.gov or call our toll-free number at 1-800-321-OSHA (6742), TTY 1-877-889-5627. It's confidential.

More Information

OSHA standards and regulations:
www.osha.gov/law-regs.html

OSHA publications:
www.osha.gov/publications

OSHA-approved state plans:
www.osha.gov/dcsp/osp

OSHA's free On-site Consultation services:
www.osha.gov/consultation

Training resources:
www.osha.gov/dte

Help for employers:
www.osha.gov/employers

Note: The described case was selected as being representative of improper work practices which likely contributed to a fatality from an incident. The incident prevention recommendations do not necessarily reflect the outcome of any legal aspects of this case. OSHA encourages your company or organization to duplicate and share this information.

This Fatal Facts is not an OSHA standard or regulation and it creates no new legal obligations. The recommendations contained herein are advisory in nature and are intended to assist employers in providing safe and healthful workplaces. The Occupational Safety and Health Act of 1970 (OSH Act) requires employers to comply with safety and health standards promulgated by OSHA or by an OSHA-approved state plan. The requirements of OSHA-approved state plans can be reviewed by selecting the state's website at: www.osha.gov/dcsp/osp. The OSH Act's General Duty Clause, Section 5(a)(1), requires employers to provide employees with a workplace free from recognized hazards likely to cause death or serious physical harm.

For assistance, contact us. We can help. It's confidential.



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