

# Timber Faller Perspectives on Tethered Logging Operations

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**List of Abbreviations:**

FOPS – Falling Object Protection Systems

SHARP – Safety and Health Assessment and Research for Prevention program

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## **Executive Summary:**

Timber falling in the Pacific Northwest is undergoing a radical transformation. Tethered or winch-assisted machines are being introduced to fall timber on steep slopes. To better understand the potential impact of tethered logging operations on logging safety, a Safety and Health Specialist from the Safety and Health Assessment and Research for Prevention (SHARP) program interviewed five owners of Washington State timber falling companies.

### *Key observations:*

- Tethered machines are currently performing an estimated 75% of timber falling in WA.
- Perceived positive safety aspects of tethered operations:
  - Exposed hand fallers are replaced by machine operators who benefit from working in cabs with falling object protections systems (FOPS).
  - Bunching timber allows for safer, more productive logging.
  - Hazard trees, such as blow down and snags, can be safely fell.
  - Work can be done safely in windy weather conditions.
- Perceived negative safety aspects of tethered operations:
  - Timber fallers following tethered cutting operations have increased exposure to windblown trees, broken limbs and treetops, and hung up trees. These exposures increase if residual standing timber is exposed to winter weather.
  - Fatigue for hand fallers is increased by:
    - Increased walking to scattered patches of trees where tethered machines are unable to fall
    - Increased physical demands of walking through disrupted terrain (e.g. brush, ruts, downed timber) when following tethered cutting
  - Smaller hand falling jobs in more locations decrease the opportunity to plan jobs and assess safety hazards.
  - Diminished work for hand fallers reduces the number of training opportunities for new (and experienced) timber fallers.
- Suggested solutions for faller concerns when operating in environments with tethered cutting:
  - Hand fallers should work prior to tethered cutting, falling unit boundaries and areas unlikely to be reached by tethered machines.
  - Tethered machine operators need to be experienced.
  - Landowners, machine operators, and hand fallers need to communicate effectively to plan jobs.
  - Consider alternative payment systems to diminish fatigue and excessive travel.

## **Introduction:**

Within the last two years, the number of tethered logging operations in Washington State has increased dramatically. Estimates from logging operators suggest there were no tethered logging operations in Washington State in 2014; whereas in 2017 there are an estimated 15 tethered machines in operation. The impact that tethered logging operations have on overall logging safety is unknown. It is assumed that tethered logging improves logger safety by replacing high-risk logging occupations (fallers) with lower-risk logging occupations (e.g. logging equipment operators). To develop a better understanding of the risks associated with tethered logging operations, SHARP conducted interviews with owners of manual falling companies.

## **Methods**

On-site interviews were conducted with a convenience sample of owners of manual falling firms in Western Washington State from May to June 2017. Interviews were unstructured, but followed general prompts to understand: a) the owners' experience in the logging industry, b) faller interactions with tethered falling machines, c) positive and negative perspectives about using tethered logging machines, and d) possible solutions for faller concerns related to the safety of timber fallers working with tethered machines.

## **Results**

### **Owner Experience**

The five male owners of the manual falling companies each had 25 or more years' experience falling timber in the logging industry. Each company employed from one to seven timber fallers.

### **Hand Fallers' Interactions With Tethered Falling Machines**

Of the five companies, four were currently working alongside tethered falling and logging operations. Each company had less than 2 years' experience doing such work. The timing of hand falling varied, occurring either before, during, or after tethered cutting. Hand fallers operated at the unit boundaries and in the areas either flagged or mapped out that the tethered machines were unable to reach, e.g. trees in a draw, areas further than 1200 feet down, or on hills without access roads above.

### **Positive Perceptions of Tethered Machines**

Employers of hand fallers noted several positive aspects of tethered logging operations. Proposed safety benefits were the replacement of exposed fallers and loggers with logging equipment operators enclosed in cabs with falling object protections systems (FOPS). Tethered falling allows timber to be bunched, increasing the productivity (and safety) of logging operations. Tethered machines can safely fall danger trees, such as blow down and snags. They can also work in all weather, including windy weather. These benefits are similar to standard mechanized logging, but tethered logging expands mechanization to steeper slopes.

## **Negative Perceptions of Tethered Machines**

If hand fallers follow a tethered cutting machine they may encounter safety hazards; among them ruts, hung-up limbs, broken limbs and tops, leaning trees, brush, and downed timber above the work area.

Hand faller work hours are sporadic and less stable given the diminished amount of hand cutting that needs to occur. Estimates provided ranged from 60-90% reduction in hand falling. There are significant concerns that timber companies will prematurely reduce the cutting workforce, before tethered falling/logging is refined for safe operations and the environmental impacts are evaluated and mitigated. The diminished amount of work reduces the number of training opportunities for new fallers.

Smaller hand falling jobs increase the number of work locations and increase the travel time between jobs. The greater number of locations decreases the amount of time available to assess the hazards of each job. On individual jobs, fallers have to walk greater distances to fall small patches of trees, which increases fatigue.

Additionally, the limited range of tethered cutting means that hand fallers have to wade through fallen timber to reach the lower end of the unit that is too far for the tethered machine to reach.

Mechanized cutting in the winter creates hazards. Due to saturated soils, the cutting is not uniform, leaving strips of trees that can become windblown and increase risks for cutters from broken and hung up limbs and tops.

## **Possible Solutions for Improving Timber Faller Safety when Working with Tethered Cutting Operations**

Experienced operators are necessary for safe tethered logging operations. Timber fallers reported that tethered machine operators must have experience operating logging equipment, recognizing hazardous situations, and be in constant contact with those working nearby.

Regarding organization of work, two respondents recommended that the hand fallers should be the first workers in the timber stand, with areas that need hand falling flagged or mapped out. In the winter, tethered machines should never be allowed to go in before the hand fallers, because the residual timber stands become windblown and are more hazardous.

The decrease in the volume of work for hand fallers will strain the workforce with both short-term unemployment for many fallers and an erosion of experience over time. On-the-job training of new fallers cannot be absorbed by employers, necessitating a new method for training timber fallers. This training could occur through formalized training programs provided by trade schools or a state agency.

Increased travel time combined with smaller jobs lead to fewer paid work hours for hand fallers. Diminished pay will change the quality of fallers, by lessening retention of experienced fallers in the workforce. Compensation may need to transition from an hourly wage to salary wages.