

**Report on Fatalities in the
Logging Industry**

**Prepared by
Prevention Division
Workers' Compensation Board**

September 2, 1994

Introduction

There can be no doubt that workers in the logging sector are in the most hazardous occupations. Various reports have been consistent in including the logging industry among the high-risk categories:

- Highest rate of lost time injury per thousand workers and highest fatality rate in Canada for 1986.
- Listed by the US Department of Labor as one of the five most dangerous industries in the US
- Individual state studies of occupational groups based on total mortality have consistently shown statistically significant elevated Proportional Mortality Ratios (PMR) and Standardized Mortality Ratios (SMR) for the logging industry and logging occupations with respect to to unintentional deaths (Mace, 1986).

Within British Columbia the fatality rate in the industry has shown a consistent decline over the last 50 years from a high of 3.8 fatals/1000 workers in the 1940's to 0.9 fatals/1000 workers in the 1990's. In the last eleven years the number of fatalities in the logging industry has declined fairly steadily from 29 in 1983 to 9 in 1992*.

Recently there was a change in this optimistic trend. In 1993 the number of fatalities in the logging industry showed a sharp increase to 20 and for the first half of 1994 this increase continued (15 as of September 1).

This report examines a specific group of logging industry fatalities in the period 1983 - 1994 in an attempt to identify trends and find causes which could lead to a prevention strategy.

*These figures are deaths due to industrial accident which are within WCB Prevention jurisdiction. See discussion under "Selection of the Study Population".

Table of Contents

Executive Summary.....	4
Selection of the Study Population.....	6
Usage of Data and Related Studies.....	6
Trends by Occupation.....	6
Comments on Specific Occupations.....	
General.....	7
Faller and Buckers.....	7
Skidder Operators.....	7
Log Truck Drivers.....	8
Hookers.....	8
Supervisors.....	8
Other Factors	
Trends by Age/Experience.....	9
Substance Abuse.....	9
Size of Firm.....	9
Trends by Region.....	10
Terms Used in Report.....	11
Tables	
T-1 Logging Fatals by Year (WCB Jurisdiction).....	12
T-2 Logging Fatals by Prevention Division Region.....	12
T-3 Logging Fatals by Month of the Year.....	12
T-4 Profile of Faller Fatals by Age/Experience.....	13
T-5 Faller Fatals by Age Group.....	13
T-6 Year of Death, Fallers Under Age 26.....	13
Summaries	
Fatals in Logging by Occupation.....	S1
Fatals by Year and Occupation.....	S2
Yearly Trend by Selected Occupation.....	S3
Year, Age and Experience by Selected Occupation.....	S4
Fatals Where Soil Stability Was a Factor.....	S5
Fatals Where Seatbelts Was a Factor.....	S6
Fatal accepted by Size of Firm.....	S7
Listing of Fatals by Firm Name.....	S8
Listing of Fatal Accidents used in Study.....	Annex A

Executive Summary

The logging industry has experienced a steady decline in fatalities from a high of 36 in 1987 to a low of 9 in 1992. However fatalities suddenly increased in 1993 to 20. To date this year there have been 15 fatalities the industry. The reversal of the downward trend from 1987 through 1992 is a serious cause for concern.

This study has evaluated 265 deaths in the logging industry during the period January 1, 1983 to August 1, 1994. The first objective of the study was to determine trends, find causes and identify particular hazards. The second objective of the study was to formulate elements of a strategy which could lead to a resumption of the previous downward trend of fatalities. Prevention Division records were examined and other studies were reviewed with the aim of identifying:

- trends in occupation, time of year, age, experience, geographical and topographical location
- particular hazards
- any hitherto unknown factors or dangers
- what, if anything, has changed from 1991/92

Findings:

- the traditional hazards associated with logging continue to be a factor in fatalities and must continue to be addressed (falling practices, snags, safety routines etc.).
- although falling and bucking continue to be a particularly hazardous occupation, other occupations deserve particular scrutiny (notably truck drivers and skidder operators).
- two particular factors were identified in a number of accidents:
 - failure to use seatbelts
 - failure to identify unstable ground (usually after rainfalls)
- the great majority of fatal accidents occur in small companies. This is likely due to several factors:
 - lack of comprehensive safety programs and training
 - greater tendency to improvise
 - cross-over of job functions by improperly trained personnel
 - a continuing trend of contracting out harvesting operations
 - lack of effective supervision
 - insufficient mechanical maintenance of equipment safety features
- the majority of fatal accidents are occurring in the Northern Region

Intervention Strategies:

- Increase safety awareness through a media campaign, primarily radio, aimed at workers of small companies.
- Increased and concentrated effort of education, training and enforcement with small companies

Intervention Strategies (Cont'd)

- Focus more resources in logging sector and in the Northern Region in particular
- More education and training to be targeted at specific occupations
- Formulate strategies for ensuring that safety programs are implemented:
 - through licensing agencies
 - through owners and prime contractors
- Collaborate with Ministry of Forest, employers and unions to integrate prevention strategies such as:
 - participation in the Forest Code Standard Practices Standard
 - participation in development of a slope stability assessment manual
 - participation in training programs of Forest Renewal B.C.
- Rigid enforcement through administrative penalties and when appropriate by information to Crown Counsel to consider for prosecution.
- Renewed effort to follow up on recommendation arising out of the Logging Safety Forum

Selection of the Study Population

For the period 1984 to 1993 inclusive, the WCB reports a total of 290 fatal claims accepted in Subclass 1.02 (logging). This total includes logging sector workers who were being transported by vehicle, aircraft or boat; heart attacks not attributable to an accident and vehicle accidents not directly related to logging. Such fatalities have NOT been included in this study.

This study focuses on 265 logging industry fatalities occurring between January 18, 1983 and August 1, 1994. All these fatalities fall within the jurisdiction of the Prevention Division of the Workers' Compensation Board and are listed in abbreviated form at Annex A

Usage of Data and Related Studies

Data within Prevention Division files was used extensively in this study. Also, statistical data relating both to claims and assessments was considered. In addition, reports compiled by three external agencies were reviewed in conjunction with this study and are quoted as appropriate:

- Fatalities Among British Columbia Fallers and Buckers 1981-7 (Dept of Health Care and Epidemiology, University of British Columbia)
- Logging Safety: Strategies for Change (Report of the Logging Industry Safety Forum Steering Committee)
- Logging Fatalities in the United States by Region, Cause of Death and Other Factors 1980 through 1988 (Journal of Safety Research)

Trends by Occupation

Hazards and fatalities associated with falling and bucking have long been recognized and well documented. Indeed, this has been the subject of a special University of British Columbia (UBC) report. (The Faller Training Program was a direct result of this report).

The Prevention Division study has identified additional occupations within the industry which previously have not received much scrutiny and attention. The study looked closely at the classification of occupations and where appropriate, grouped the various job-titles.

As a result, occupations which previously did not draw particular attention were identified as potential target groups. This is illustrated by the following tabulation:

Total Fatals 265

<u>Occupation</u>	<u>Fatals</u>	<u>Cumulative</u>	<u>cumulative % of Total</u>
Faller	93	93	35
Skidder Operator	36	129	49
Log Truck Driver	24	153	58
Hooker	13	166	63
Supervision	11	177	67
Chokerman	9	186	70
Landing Bucker	8	194	73
Chaser	7	201	76
Equipment Operator	7	208	78

The emergence of Skidder Operators, Log Truck Drivers and members of the Supervision group as particular hazardous categories is notable. Previously, attention has been focused on fallers and buckers. It is likely this focus combined with the requirement for training is largely responsible for a general decline in faller fatalities.

However, the relatively constant fatality rate of supervisors, truck drivers and skidder operators warrants attention. Annually these occupations have accounted for an average fatal loss of 1 supervisor, 2 truck drivers and 3 skidder operators.

Comments on Specific Occupations

General

In this study there was a careful review of the task being performed at the time of death. By doing this, we were able to group the occupations and seek characteristics within the groups. An outcome of this analysis was the emergence of a hitherto unconsidered group (supervision).

Fallers and Buckers

There were no new trends or findings relating to this occupation. The study showed the hazards to this occupation continue to be poor falling practices resulting in workers being struck by trees; leaving cut-up trees and working too close. The majority of Faller and Bucker accidents are violations of specific, established Regulations.

Skidder Operators

The fatalities within this group are second only to fallers. In analyzing this group the most common factor is failure to use seatbelts. Fatalities associated with the failure to use seatbelts are found at Summary S6. A count reveals that in 19 of 36 skidder operator

fatalities, seatbelts were not used. Although it is evident that topography was a factor in these fatalities it is noteworthy that in only 9 cases was there a specific reference to steep or hazardous terrain. This may be an indication that in moderate slopes or rolling terrain, operators may be discounting the roll-over hazard. The high incidence of skidder fatalities in interior type logging industries (16 of 19) reflects the dominance of skidder operations in these regions. However, normally the terrain in these regions is not as hazardous yet there is still an issue of rollover and lack of seatbelt use.

It should be noted that the use of seatbelts is a preventive measure and not a solution. The basic problem of operating machinery on slopes which are beyond their intended capabilities still exists.

Log Truck Drivers

This study attributed 24 of 265 fatalities to the occupation of Log Truck Driver. However, as significant as that figure is, what is not included in this study is a further 27 fatalities in the logging sector which involved log trucks. These fatalities were not included in this study because they were classified as motor vehicle accidents and not within the jurisdiction of the WCB. When these additional fatalities are considered, Log Truck Drivers are second only to fallers in the number of fatalities.

This high incidence of Log Truck Driver fatality is not unique. Other studies have reached the same findings:

"The high fatality rate for transportation operatives, primarily heavy truck drivers, is partially related to the high proportion of motor-vehicle deaths associated with the logging industry." (Natl Inst. for Occupational Safety & Health report)

Hookers

The number of accidents have been decreasing in this occupation mainly due to improved technology. For example the shift from high lead yarders to grapple yarders which have smaller crews.

Supervisors

There is no dominant factor or trend which applies to fatalities in the supervisor category. This category was listed to draw attention to that fact that within the study period, 11 supervisors were killed; this represents one per year. If any conclusions are to be drawn it is to reaffirm that logging is a hazardous industry. One does not have to be actually performing a hazardous task; a loss of vigilance or failure to follow safe work practices can lead to tragedy.

Other Factors

Trends by Age/Experience

The UBC study on faller and buckler fatalities identified two peaks. The study found one peak of fatalities for workers aged between 25 and 30 years with less than 5 years experience. Another peak was identified for workers aged between 45 and 50 years with 20 to 25 years experience.

The UBC study discussed the possibility that the younger peak could result from lack of experience and training. It was explained the older peak could result from a lack of agility due to age and a corresponding inability to move quickly to safety. Although agility is a possibility and could be a contributing factor in some of the fatalities, the higher peak is believed to be a natural outcome of industry demographics: more fallers in this age group. It was observed that with minor speculative adjustment to the age groupings, a distribution of fatalities by age grouping more closely follows a traditional bell curve.

To test this theory the age and experience of faller fatalities in the years 1987 to 1994 was evaluated See Table T-5. In this grouping the occurrence of increased fatalities in the younger age group failed to materialize. A further test was applied by tracking the year of death for all fallers under the age of 26. As indicated in Table T-6, there is an almost exclusive occurrence of age 26 and under fatalities in the years 1983-1987. From this it is concluded that the high rate of faller deaths in younger age group is an anomaly of the period 1983 - 1987 and does not currently exist in the industry.

Substance Abuse

The UBC study specifically noted the absence of substance abuse. Of 76 logging industry fatalities for which toxicological data was available, there were only four positive results. Two tests showed ethanol levels well below legal impairment (test 0.02 mg% vs. impairment limit at 0.08 mg%). One case showed traces that probably indicate cannabis use within the preceding 12 hours and the fourth case showed therapeutic levels of phenytoin and phenobarb.

Although there is one record of probable substance abuse since 1987, nothing else in the WCB study conflicted with the findings of the UBC study. It was therefore concluded that substance abuse is not an issue in logging fatalities.

Size of Firm

Analysis of logging firms with fatalities showed a remarkable phenomenon. As demonstrated at Summary S8, when all companies having fatalities are listed, there is an almost exclusive preponderance of small companies

This phenomenon has not gone unnoticed in other publications. The National Institute for Occupational Safety and Health study identified the fact that employees of small companies were at higher risk of fatal injury. In addition, the Logging Industry Safety Forum report singled out small companies for particular attention. Some extracts from that report:

"a false assumption by some employers, particularly smaller companies, that safety costs too much"

"smaller companies felt excluded from the circulation of material"

"TFL holders, including Small Business Program operators and regardless of the size of their workforce, must notify WCB of the location of their projects."

"Participants, particularly from Prince George and Terrace, were vocal about the lack of resources provided by licensees to assist contractors understand and implement safety programs. As a result, many contractors lack safety programs."

It is very clear that any attempt to reduce fatalities in the logging industry must include a significant focus on small companies. The Safety Forum report not only recommends such an emphasis but also suggests much of the impetus for this emphasis resides with the same small companies. Some strategies identified in this and other reports are:

- more Prevention Division contact with small companies to include education, consultation and enforcement
- develop and make available more safety information aimed at small companies
- take all possible initiatives to ensure that small companies have an effective safety program (a requirement of licensing, integrate large/small company programs, protocols with other jurisdictions)

Trends by Region

A listing of logging fatalities for 1991, 1992 & 1993 is found on Table T-2. This indicates that the greatest number of logging fatalities is occurring in the Northern Region both in interior type logging operations and coastal type logging operations. However, some factors must be considered:

- this region of the province accounts for more than 60% of the lumber harvest
- most of the activity is compressed into one season with a great deal of activity compressed into a short time period
- logging in this region is predominantly small firms

Terms Used in This Report

barber chair	the tree splits vertically as it starts to fall and part of the split wood pivots backwards away from the direction of fall and creates the potential for the butt end of the tree to strike the faller
bucker	see faller and landing buckler
chaser	worker who unhooks logs at the landing (see yard, yarding)
coastal logging	practices encountered on the coast of the province where the terrain is usually steeper. There is more use of high lead equipment (cables and rigging).
chokerman	a worker who places a wire cable "choker" around logs during the yarding process
domino falling	as the name implies, the practice of using one tree to cause several other trees that have been partially cut to fall in succession, usually with no wedge involved
dutchman	a portion of the undercut is not removed. This can change falling direction of the tree and is very hazardous to the faller if not properly used
faller	a worker who fells & bucks trees to specifications set by the company
grapple yarder	a machine utilizing high lead cable and a grapple in order to yard logs
hooker	the worker responsible for the rig up of a high lead yarder and is the person in charge of the yarding site.
interior logging	practices encountered in the interior of the province where the terrain is usually flatter. There is more use of use of ground skidding equipment
landing buckler	a worker who bucks logs in a landing
skidder	a piece of mobile logging equipment used to haul logs. Characterized by tractor-size 4-wheel drive. Articulates in the centre and is able to manoeuvre over rough terrain.
snag	a dead tree 3 metres or more in height
yard, yarding	the process of hauling logs from the point of cut to a centralized area (landing) where they are sorted, trimmed and prepared for trucking
yarder	a machine designed to yard logs with cables
2nd loader	a worker who works with a log loader loading trucks. Duties may also include stamping bucking and limbing.

T-1
Logging Fatalis by Year (WCB Jurisdiction)

1983	29	1989	20
1984	28	1990	14
1985	30	1991	14
1986	25	1992	9
1987	36	1993	20
1988	27	1994	13*

*(to August 1, 1994)

T-2
Logging Fatalis by Prevention Division Region
1991, 1992 & 1993

	1991	1992	1993	Total
North -coastal	1	5	6	12
North - interior	6	1	4	11
Vancouver Island	2	2	2	6
Sunshine Coast	2	0	2	4
Greater Vancouver	1	0	0	1
Fraser Valley	0	0	1	1
Okanagan	2	1	4	7
Kootenays	0	0	1	1
Total	14	9	20	43

T-3
Logging Fatalis by Month of the Year
1983 to 1994

January	32	May	25	September	21
February	23	June	34	October	22
March	19	July	25	November	22
April	9	August	19	December	14

**T-4 Profile of Faller Fatals by Age Grouping and Experience Grouping
1983-1994**

Experience Yrs	No. of Fatalities	Age Group Yrs	No. of Fatalities	Speculative Adjustment*
0-5	27	0-20	1	1
6-10	15	21-25	9	10
11-15	15	26-30	16	12
16-20	19	31-35	10	13
21-25	11	36-40	13	13
26-30	4	41-45	17	17
31-35	0	46-50	13	13
		51-55	7	7
		55-60	5	5
		60+	2	2

* See discussion under "Trends by Age/Experience"

**T-5
Faller Fatals by
Age Group 1987-94**

Age Group Yrs	No. of Fatals
0-20	1
21-25	3
26-30	4
31-35	4
36-40	10
41-45	9
46-50	5
51-55	3
55-60	3
60+	0

**T-6
Year of Death 1983-1994
Fallers Under Age 26**

Year	No. of Fallers
1983	1
1984	2
1985	3
1987	3
1992	1

Fatafs in Logging - by Occupation 1983-94

2nd loader	4	Shake & Shingle cutter	1
Backhoe operator	1	Skidder operator	36
Block splitter	1	Supervision	11
Boom Logger	1	Teamster (Team of horses)	1
Boomman	1	Tireman	1
Boomman Trimmer	1	Vessel Skipper	1
Bucker	3	Watchman	1
Bulldozer operator	1	Yarder	3
Cable log-loader operator	1		
Cat operator	2		
Cedar block splitter	1		
Chaser	7		
Chokerman	9		
Driller Blaster	3		
Equipment operator	7		
Faller	93		
Feller Buncher operator	1		
First Aid Attendant	2		
Front end loader operator	1		
Grader operator	1		
Grader Operator/Handyman	1		
Graple yarder operator	1		
Grapple yarder operator	1		
Handyman	2		
Heavy Duty Mechanic	1		
Helicopter Pilot	1		
Hooker	13		
Labourer	2		
Lake Patrolman	1		
Landing bucker	8		
Loader operator	2		
Log dump operator	1		
Log loader operator	1		
Log Truck Driver	24		
Rigging slinger	9		
Shake block cutter	1		

Fatals by Year and Occupation 1983-1994

1983

2nd loader	1
Chokerman	3
Faller	8
Front end loader operator	1
Grader operator	1
Hooker	4
Loader operator	1
Log Truck Driver	5
Skidder operator	2
Supervision	2
Yarder	1

1984

2nd loader	1
Block splitter	1
Faller	18
Hooker	1
Lake Patrolman	1
Loader operator	1
Rigging slinger	2
Shake block cutter	1
Skidder operator	1
Supervision	1

1985

Boomman	1
Cedar block splitter	1
Chaser	1
Driller Blaster	1
Faller	17
Landing Bucker	2
Log Truck Driver	2
Skidder operator	3
Supervision	1
Tireman	1

1986

Chokerman	3
Equipment operator	1
Faller	8
Hooker	1
Labourer	1
Landing bucker	1
Log loader operator	1

Log Truck Driver	2
Skidder operator	6
Supervision	1

1987

Backhoe operator	1
Bucker	1
Cat operator	1
Chokerman	2
Driller Blaster	1
Equipment operator	1
Faller	9
First Aid Attendant	1
Helicopter Pilot	1
Hooker	2
Landing bucker	1
Log Truck Driver	4
Rigging slinger	3
Shake & Shingle cutter	1
Skidder operator	3
Supervision	3
Yarder	1

1988

Boom Logger	1
Bucker	1
Cable log-loader operator	1
Chaser	2
Equipment operator	3
Faller	6
Feller Buncher operator	1
Hooker	1
Landing Bucker	1
Log Truck Driver	2
Rigging Slinger	2
Skidder operator	4
Supervision	1
Yarder	1

1989

2nd loader	1
Boomman Trimmer	1
Chaser	2
Faller	9
Log Truck Driver	1

Fatals by Year and Occupation 1983-1994

Rigging slinger	1	Equipment operator	1
Skidder operator	3	Faller	3
Supervision	1	Grader Operator/Handyman	1
Teamster (Team of horses)	1	Grapple yarder operator	1
1990		Grapple yarder operator	1
Chokerman	1	Landing Bucker	1
Faller	5	Log Truck Driver	2
Handyman	1	Skidder Operator	1
Hooker	1	Supervision	1
Log Truck Driver	1		
Skidder operator	4		
Vessel Skipper	1		
1991			
Cat Operator	1		
Faller	3		
First Aid Attendant	1		
Landing Bucker	1		
Log Truck Driver	3		
Skidder operator	4		
Watchman	1		
1992			
Chaser	1		
Driller Blaster	1		
Faller	2		
Handyman	1		
Labourer	1		
Log Truck Driver	2		
Skidder operator	1		
1993			
2nd loader	1		
Bucker	1		
Bulldozer operator	1		
Equipment operator	1		
Faller	5		
Heavy Duty Mechanic	1		
Hooker	3		
Landing Bucker	1		
Log dump operator	1		
Rigging Slinger	1		
Skidder Operator	4		
1994			
Chaser	1		

Yearly Trend by Selected Occupation

<u>Occupation</u>	<u>Year</u>	<u>Fatals</u>	<u>Occupation</u>	<u>Year</u>	<u>Fatals</u>	
Chaser	1985	1		1991	1	
	1988	2		1993	1	
	1989	2		1994	1	
	1992	1		Log Truck Driver	1983	5
	1994	1			1985	2
Chokerman	1983	3			1986	2
	1986	3			1987	4
	1987	2			1988	2
	1990	1		1989	1	
Equipment operator	1986	1		1990	1	
	1987	1		1991	3	
	1988	3		1992	2	
	1993	1		1994	2	
	1994	1		Rigging slinger	1984	2
Faller	1983	8			1987	3
	1984	18			1988	2
	1985	17			1989	1
	1986	8			1993	1
	1987	9		Skidder operator	1983	2
	1988	6			1984	1
	1989	9			1985	3
	1990	5			1986	6
	1991	3			1987	3
	1992	2		1988	4	
	1993	5		1989	3	
	1994	3		1990	4	
	Hooker	1983	4		1991	4
		1984	1		1992	1
1986		1		1993	4	
1987		2		1994	1	
1988		1		Supervision	1983	2
1990		1			1984	1
1993		3			1985	1
Landing bucket	1985	2			1986	1
	1986	1			1987	3
	1987	1		1988	1	
	1988	1		1989	1	
				1994	1	

Year, Age and Experience by Selected Occupation

Occupation

<u>Year</u>	<u>Fatals</u>	<u>Age</u>	<u>Exper.</u>
Chaser			
1985	1	20.0	3.0
1988	2	31.0	5.5
1989	2	27.5	2.5
1992	1	28.0	0.0
1994	1	24.0	0.0
<u>Overall Ave.</u>		<u>Age 27.0</u>	<u>Exp 2.7</u>

Chokerman

1983	3	24.3	4.3
1986	3	21.3	4.0
1987	2	32.5	3.0
1990	1	18.0	1.0
<u>Overall Ave.</u>		<u>Age 24.4</u>	<u>Exp 3.6</u>

Equipment operator

1986	1	49.0	6.0
1987	1	59.0	40.0
1988	3	38.0	11.0
1993	1	42.0	9.0
1994	1	45.0	
<u>Overall Ave.</u>		<u>Age 44.1</u>	<u>Exp 14.7</u>

Faller

1983	8	34.5	10.8
1984	18	37.4	10.8
1985	17	37.4	12.7
1986	8	46.5	19.5
1987	9	33.6	9.3
1988	6	42.0	12.7
1989	9	37.8	11.6
1990	5	41.6	16.0
1991	3	43.0	19.3
1992	2	40.0	8.5
1993	5	40.4	16.0
1994	3	51.3	23.3
<u>Overall Ave.</u>		<u>Age 39.0</u>	<u>Exp 13.1</u>

Occupation

<u>Year</u>	<u>Fatals</u>	<u>Age</u>	<u>Exper.</u>
Hooker			
1983	4	36.8	12.0
1984	1	56.0	40.0
1986	1	26.0	5.0
1987	2	38.0	10.0
1988	1	29.0	5.0
1990	1	36.0	12.0
1993	3	35.7	13.3

Overall Ave. Age 36.7 Exp 13.1

Landing bucket

1985	2	37.0	14.0
1986	1	29.0	1.0
1987	1	63.0	45.0
1988	1	28.0	6.0
1991	1	30.0	7.0
1993	1	34.0	15.0
1994	1	49.0	25.0

Overall Ave. Age 38.4 Exp 1

Log Truck Driver

1983	5	34.8	13.2
1985	2	33.5	8.5
1986	2	51.5	22.5
1987	4	41.8	16.0
1988	2	42.5	14.0
1989	1	42.0	25.0
1990	1	51.0	20.0
1991	3	47.7	20.7
1992	2	37.0	15.0
1994	2	48.5	26.5

Overall Ave. Age 41.8 Exp 17.2

Rigging slinger

1984	2	25.5	4.5
1987	3	23.7	4.0
1988	2	27.0	1.5
1989	1	30.0	5.0

Year, Age and Experience by Selected Occupation

<u>Occupation</u>				<u>Occupation</u>			
<u>Year</u>	<u>Fatals</u>	<u>Age</u>	<u>Exper.</u>	<u>Year</u>	<u>Fatals</u>	<u>Age</u>	<u>Exper.</u>
1993	1	27.0	2.0				
<u>Overall Ave. Age 25.9 Exp 3.4</u>							

Skidder operator

1983	2	23.5	6.0
1984	1	32.0	7.0
1985	3	25.0	5.3
1986	6	27.3	4.3
1987	3	38.0	11.0
1988	4	31.8	10.3
1989	3	33.7	6.0
1990	4	29.0	8.0
1991	4	33.8	8.5
1992	1	59.0	20.0
1993	4	36.0	12.3
1994	1	38.0	20.0
<u>Overall Ave. Age 32.0 Exp 8.6</u>			

Supervision

1983	2	38.5	11.0
1984	1	52.0	36.0
1985	1	35.0	12.0
1986	1	50.0	30.0
1987	3	44.0	25.0
1988	1	39.0	9.0
1989	1	41.0	20.0
1994	1	44.0	15.0
<u>Overall Ave. Age 42.7 Exp 19.9</u>			

Fatais Where Soil Stability Was a Factor

<u>Occupation</u>	<u>Accident</u>	<u>Region</u>	<u>Year</u>
Supervision	Area engineer. Fell fifteen feet down rock face	Coastal	1983
Chokerman	Buried in landslide	Coastal	1983
Hooker	Struck by runaway tree (snag)	Coastal	1983
Chokerman	Hit by runaway buckskin balsam log	Coastal	1983
Skidder operator	Thrown from rollover skidder	Interior	1983
Skidder Operator	Skidder rollover	Interior	1986
Hooker	Large rock fell on him	Interior	1986
Driller Blaster	Struck by falling rock	Coastal	1987
Equipment operator	Excavator slid & rolled 900' down sidehill	Coastal	1988
Feller Buncher operator	Rolled feller buncher while traversing hillside	Interior	1988
Skidder operator	Crushed when jumped clear of skidder which rolled	Coastal	1990
Faller	Crushed by previously felled, bucked 33ft. log	Coastal	1990
Chokerman	Buried in mud slide	Coastal	1990
Hooker	Caught up in landslide	Coastal	1990
Bulldozer operator	Ejected from machine which rolled & crushed him	Coastal	1993
Faller	Buried by rootwad of two uprooted hemlock trees	Coastal	1993
2nd loader	Buried in landslide while bucking logs	Coastal	1993

Fatafs Where Seatbelts Were Not Used

<u>Occupation</u>	<u>Accident</u>	<u>Region</u>	<u>Year</u>
Loader operator	Thrown out of rolling loader	Coastal	1983
Skidder operator	Thrown from rollover skidder	Interior	1983
Skidder operator	Crushed as skidder rolled twice down 40% slope	Coastal	1985
Skidder operator	Thrown out of skidder which rolled downhill	Interior	1985
Skidder operator	Operator Thrown out of skidder down side hill	Coastal	1985
Skidder operator	Crushed by rollover skidder	Interior	1986
Skidder operator.	Skidder rolled over.	Interior	1986
Skidder Operator	Skidder rollover	Interior	1986
Skidder Operator	Crushed by skidder roll-over	Interior	1988
Equipment operator	Excavator slid off road down bank	Coastal	1988
Feller Buncher operator	Rolled feller buncher while traversing hillside	Interior	1988
Skidder operator	Thrown from and crushed by skidder which rolled	Interior	1989
Skidder operator	Crushed when jumped clear of skidder which rolled	Coastal	1990
Skidder Operator	Operator crushed during skidder rollover	Interior	1990
Skidder operator	Crushed by skidder tire when he jumped off machine	Coastal	1990
Skidder operator	Run over by his John Deere 740 grapple skidder	Coastal	1990
Skidder operator	Operator thrown from rollover skidder	Interior	1991
Skidder operator	Crushed by rops canopy following skidder rollover	Interior	1991
Skidder operator	Operator thrown out of rollover skidder	Interior	1991
Skidder operator	Skidder traveled 130 feet downhill causing trauma	Interior	1992
Skidder operator	Crushed by skidder which slid off trail	Interior	1993
Bulldozer operator	Ejected from machine which rolled & crushed him	Coastal	1993
Skidder operator	Crushed during skidder rollover	Interior	1993
Equipment operator	Rolled John Deere 850B crawler	Interior	1993

FATALS ACCEPTED IN SUBCLASS 102 BY SIZE OF FIRM (1976-93)

YEAR ACCEPTED	ASSESSABLE PAYROLL OF FIRM			TOTAL
	LESS THAN \$100,000	\$100,000 TO \$1,000,000	MORE THAN \$1,000,000	
1976	11	9	14	34
1977	9	17	7	33
1978	15	6	16	37
1979	16	9	20	45
1980	17	16	12	45
1981	12	6	9	27
1982	17	12	6	35
1983	11	12	9	32
1984	12	14	8	34
1985	9	18	3	30
1986	11	13	6	30
1987	13	14	7	34
1988	16	13	9	38
1989	12	16	5	33
1990	12	13	4	29
1991	12	3	6	21
1992	7	4	2	13
1993	8	13	9	30
1976-93 TOTAL	220	208	152	580

Listing of all Fatals by Firm Name

B.C.Forest products Ltd.	G & W Logging	Karloff contracting ltd.
Millstream Timber Ltd.	B.C.Forest Products Ltd.	Ja-Kor Holdings ltd.
MacMillan Bloedel Ltd.	Pacific Forest Products Ltd.	Bruce Jacobs Contracting ltd.
J.G.M.Logging	Dave Black Logging	Cruch Enterprises ltd.
Frank Beban Logging Ltd.	Edwards & Associates Logging Ltd.	McNabb Brothers Logging ltd.
J.R.G.Logging Ltd.-Joint Venture	Windfall Cedar Products Ltd.	Husby Trucking ltd.
MacMillan Bloedel Ltd.	Camsell Lake Contracting Ltd.	Normand Hart
Western Forest Products ltd.	W.Lottin Contracting Ltd.	Bernhardt Bros.Lumber ltd.
Cattermole Timber Ltd.	Ramack Trucking	Cedex Timber Ltd.
Harnor Logging ltd.	Piva Contracting Ltd.	Bonderove & Sons Contracting Co.Lt
Lovelle Logging ltd.	Slaton Enterprises Ltd.	Shushartie Log Sales
Kwatna Timber	MacMillan Bloedel Ltd.	Jack Irvine Contracting
R.D.C.Contracting ltd.	Karvel Enterprises Ltd.	Pine creek Sawmill Ltd.
T & G Contracting Ltd.	Richard S Equipment Ltd.	T & G Contracting Ltd.
Dwayne Brunet,Brunet skidding.	G.F.H. Falling Contractors Ltd.	Owekino Logging ltd.
Lenco Enterprises ltd.	A.P.A. Cedar Products	All-West Trading Log Yard
Doman Forest Products ltd.	Casco Logging Ltd.	Erickson and Rice
Kiwi & Holmes yarding ltd.	Buccaneer Diamond Drilling Ltd.	MacMillan Bloedel Ltd.
M & R Logging	Liard Holdings Ltd.	Rand-Mar Contracting & Services Lt
Schweb Contracting Ltd.	Davidson Developments	Davegord logging Co.ltd.
Frank Beban Logging Ltd.	Fred Gruen Logging	Dee Jay Trucking ltd.
Gustafson logging ltd.	Trevor Thompson R & T Enterprises	Canadian Forest Products Ltd.
Goodmen Industries ltd.	Shamrock Logging	Ash River Investment Ltd.
David J. Griffith.	Lor Wes Contracting Ltd.	CIP Forest Products Inc.
Ja-Kor Holdings ltd.	CIP FForest Products Inc.	Thomson Industries Ltd.
Vally Johnson,Vally Trucking	T & G Contracting Ltd.	J.C.Olsen Logging Ltd.
West World Falling ltd.	Dunkley Lumber Ltd.	Whonnock Industries ltd.
Wetendorf Logging ltd.	Russell & Lilly Ltd.	Don Fisher Logging
Cheslakee Logging Co.ltd.	C.F.& S. Logging Ltd.	Burritt & Son Trucking Ltd.
Renown Contracting ltd.	W.Petersen Logging Ltd.	Rose Lake Enterprises ltd.
Necoslie Indian Band Council	Lorielle Contracting Ltd.	Formans Transport Ltd.
MacMillan Bloedel Ltd.	B.C.Forest Products Ltd.	Bayswater Forest Products Ltd.
J.A.MacKay Trucking ltd.	Garnet Le Beau, leBeau Bros.	Trytko Logging Ltd.
Dale Hubensky Contracting ltd.	Frank Beban Logging Ltd.	George A. Underhill
Clay-Man Falling	Helps Logging Ltd.	Tom Sandborn
Cedar lifting ltd.	C.F.& S. Logging Ltd.	St.Jean Logging
Weldwood of Canada Ltd.	E & K Backer logging ltd.	A M Excavating Ltd.
Rocky point services ltd.	Joe Foraie contracting ltd.	Hydra Management Ltd
Rennie Logging ltd	Steve Himech Logging 1981 ltd.	MacMillan Bloedel Ltd.
Terry Egge,Spar tree logging	W.G.Heathcote contracting ltd.	M.Llefebvre General Contracting Lt
Beavertooth Falling Ltd.	Watson trucking	Spruce Valley Contracting Ltd.
Tilloda contracting ltd.	Triple C Logging.	Walker & Sons Contracting Ltd.
Encampment Creek Lumber Ltd.	Canadian Forest Products Ltd.	3J Contracting Ltd.
Ted Leroy Trucking	Canadian Forest Products Ltd.	Percy Logging Co.Ltd.
Blackhawk Contracting	Benwest logging ltd.	Dale E. Douglas
Onion Lake Logging Ltd.	Rustad bros. & Co.ltd.	Jasak Logging Ltd.
Timfor Contractors Ltd.	Ted Johnson contracting	Stephen J. Mycock, S & D Ranch
Delton Henrich Contracting Ltd.	J.B.Reid Logging ltd.	Howe Sound Timber Co. Ltd.
John O.Lindstrom Logging	C & R Logging co.ltd.	Mike Hamilton Logging Ltd.
Budak Logging Ltd.	Canadian Forest Products Ltd.	A M Excavating Ltd.
Schlechtleitner Holdings Ltd.	Fedje & Gunderson Contractors Ltd.	Ray's Contracting
LaFleur Bros.& Sons logging ltd.	Douglas N.Dods trucking	G.F.H. Falling Contractors Ltd.

Listing of all Fatals by Firm Name

Fedje & Gunderson Contractors Ltd.	Pat Carson Bulldozing Ltd.	J.S. Jones Timber Ltd.,
Richard erling Bauer Shuswap Skiddin	David P. Gaddes, Gaddes Contracting	Palco Equipment Ltd.
Husky Marine Towing Ltd.	Carrier Lumber Ltd.	Ecoprotec Harvesting Ltd.
Reliable Logging Ltd	Raymond G. Skavlebo, Starlight logging	Rae Paxton & Tracey Balfour
Six Star Logging	Lyle H. MacKenzie	Main Logging Ltd
V.G.Warner Logging Ltd.	Joe Harrof Contracting	Timbermill Logging Ltd.
Millstream Timber Ltd.	Seeley Logging Ltd.	LaBounty Logging Ltd..
Y-ROA Contracting	WeeWane Trading Ltd	
Paul B Onyschtschuk Falling Cntrs.Ltd	Pat Carson Bulldozing Ltd	
Davidoff Logging Company	Kolida Logging Ltd.	
Fedje & Gunderson Contractors Ltd.	Weldwood of Canada Ltd.	
Main Logging Ltd	Gary Willmore	
San Creek Logging Inc.	Weldwood of Canada Ltd.	
Skeena Sawmills	Kap-Poch Logging Ltd.	
D.N.Blakey Logging Ltd.	John Fruite, North Slope Logging	
A. Cook Logging	F & N Log Sorting Ltd.	
Goode-Douglas Logging Ltd.	Star contracting Ltd.	
Hal's Power Equipment & General Const.	Ray-Bilt Contractors Ltd.	
Hamblin Industries Ltd.	Shushartie Log Sales Ltd.	
Mar-Log Enterprises Ltd.	D & E Trucking	
Roderick R. Gould, Cayuse Logging	DNR Contracting -Ron Neisner	
Donald G. McKay	Don Hull & Sons Contracting Ltd.	
Tipton Logging Ltd.	Pinewood Holdings Ltd	
R & A Falling Contractors	BVR Contractors Ltd.	
Silver Bay Enterprises Ltd.	Briela Logging Ltd.	
White and Davidson Logging	Newood Forest Management Corp	
P.Staehli & Son Contracting Ltd.	Smith River Contracting Ltd	
Cedar Haven Contracting Ltd	Blackmount Logging Inc	
Dacar Lumbering Ltd.	Goldstream Cedar	
Shie Logging	Edwards & Associates Logging Ltd	
Borer Logging	Fletcher Challenge Canada Ltd	
Blue Water Contracting Ltd.	Glacier Heli Rigging Inc	
Richard Hoek	MacMillan Bloedel Ltd.	
International Forest Products Ltd.	Highway Logging Ltd	
Encampment Creek Lumber Ltd.	Cariboo Western Lumber Company Ltd	
Roville Contracting Ltd.	Teardrop Timber Ltd	
Pro Contracting Ltd.	Nasoga Contracting Ltd	
Brown Bear Trucking Ltd.	G. Knight Contracting Ltd	
Udinese Pole Co. Ltd.	Weewane Trading Co. ltd.	
Lee Towing Ltd	Undercut Contracting Ltd	
Westward Timber Co. Ltd.	Weldwood of Canada Ltd.	
A.W.Traub & Sons Contracting	Rimrock Logging ltd	
Tilloda Contracting Ltd.	C. Baggett Logging Ltd	
Polson Logging Ltd.	Tsibass Construction Ltd.	
Orval Harris Trucking Ltd.	Schweb Contracting Ltd.	
Wingert Industries Ltd.	Claylor Contracting	
John Klughart, Ida Lake Salvage	Lemare Lake Logging Ltd.,	
Clifford Kjorven, Slick Logging	Belco Logging Ltd.	
International Forest Products Ltd	James Lane Bayliff J & M Bayliff	
Island West Logging Ltd.	Lytton Lumber Ltd.,	
Pat Carson Bulldozing Ltd.	Pope & Talbot Ltd.,	

Listing of Fatal Accidents in Logging - 1983 to 1994

<u>Occupation</u> <u>Date</u>	<u>Accident</u>	<u>Factors</u>	<u>Reason</u>
Supervision 01/18/83	Area engineer. Fell fifteen feet down rock face	Access road washed out	Hazardous terrain
Chokerman 02/24/83	Buried in landslide	Steep slope, Logging activity, Heavy rains.	Supersaturated ground
Front end loader operator 02/16/83	Jumped from out of control front end loader	Defective braking system, Stalled engine, Steep terrain.	Mechanical defect
Log Truck Driver 02/02/83	Log fell from load striking worker	Loose wrapper, Rough road	Load shifted
Log Truck Driver 05/01/83	Crushed between tractor unit and stationary F-E-L.	Worker in wrong place at wrong time	Mechanical Malfunction of tractor unit
Hooker 05/11/83	Buried by stump	Decayed stump	Roadline siwashed on stump
Log Truck Driver 06/02/83	Throat cut by kickback from landing buckers saw	Victim too close to landing buckler	Saw kicked back
Yarder 06/07/83	Guyline failure allowed spar to topple	Mechanical failure	Poor anchorage,
Hooker 06/17/83	Struck by runaway tree (snag)	Steep terrain, numerous felled snags, heavy rain	Tree was dislodged by the turn
Chokerman 07/15/83	Hit by runaway buckskin balsam log	Very steep sidehill, extremely slippery conditions	Log set in motion by incoming turn
Skidder operator 07/20/83	Pinned by falling log	One raised log in drag	Using improper work procedures
Loader operator 07/20/83	Thrown out of rolling loader		Inexperience in operating loaders. Seatbelt?
Faller 07/21/83	Crushed by kick back tree	Decadent trees, Anger at getting saw stuck	Failed to move to a safe location
Chokerman 07/28/83	Struck by a falling tree	Faller misjudged lean of tree, poor instruction & supervision	Faller and skidding crew working too close
Faller 09/01/83	Struck by tree that he was falling	Misjudged height of tree, two inch "Dutchman"	Tree fell in to standing timber & kicked sideways
Faller 08/31/83	Struck by tree which was hit by felled tree	Decaying poplar trees, unstable	Falling trees into standing timber
Grader operator 09/08/83	Run over by rear wheel of grader	Drinking problem, Not using door chain	Fell from grader
Hooker 08/11/83	Struck by runaway log dislodged by loader	Steep terrain, Misjudgement	Placed himself in a hazardous area
Faller 09/12/83	Struck by snag	Lack of supervision, workers lack of concern	Used poor falling practices
Faller 09/15/83	Struck by a by-passed snag	Working alone, infrequent checks	Inadequate instruction and supervision
2nd loader 09/21/83	Struck by log loader boom extension	Oversight of experienced operator	Improper use broke off the extension
Skidder operator 09/20/83	Thrown from rollover skidder	Not wearing seatbelt, Overconfidence	Operating on very steep hazardous terrain
Faller 10/04/83	Struck by tree		Burning tree fell on worker

Listing of Fatal Accidents in Logging - 1983 to 1994

<u>Occupation</u>	<u>Date</u>	<u>Accident</u>	<u>Factors</u>	<u>Reason</u>
Log Truck Driver	12/02/83	Logs shifted crushing cab	Slippery road, defective brakes	Operator lost control
Faller	12/01/83	Struck by snag	Expediency, fatigue	Faller left two cut-up snags
Log Truck Driver	12/02/83	Logs shifted crushing cab	Defective brakes	Lost control of vehicle
Faller	11/18/83	Pinned by tree	Unstable trees left during road clearing	Tree being felled disturbed unstable tree
Supervision	12/06/83	Owner. Run over by skidder	Victim in bight, Operator did not have control of skidder	Throttle stuck
Hooker	11/28/83	Struck by haulback line being tightened	No signals given, lack of proper training	Victim placed himself in the bight
Faller	01/11/84	Struck by snag being felled	Should not have attempted to fall this snag by this method	Rotten, slabbed, leaning snag
Faller	01/19/84	Struck by tree being felled	Did not set escape route	Felled tree into standing timber
Faller	01/16/84	Struck by sapling thrown up by tree just felled	Saw threw chain may have delayed getaway	Faller did not move from the stump
Faller	01/24/84	Struck by root-rot balsam	Did not move from stump, overhead vision obscured	Limb-tied to tree being felled
Faller	01/26/84	Crushed by cut-up tree	Gusty wind	Rotten holding wood
Faller	02/16/84	Cut-up tree fell on him	Possible personal problems, poor falling practices	He cut-up the tree and then worked beneath it
Block splitter	03/28/84	Struck in chest by drive link from saw chain	Chain & chain sprocket were of different pitch	Saw chain broke
Rigging slinger	04/24/84	Struck by tree being felled	Falling direction changed, faller did not check on Boxall	Went to sleep in falling area
Shake block cutter	04/28/84	Fell backwards 15 Ft. down a ravine	Very steep terrain, caulks in poor condition.	Shake block he was pulling on suddenly came free
Rigging slinger	05/22/84	Crushed by butt end of log that he was standing on	Worker put himself in the bight	Log struck by rigging, knocked him off.
Faller	06/04/84	Struck by log which rolled down sidehill	Very steep sidehill	Did not recognize the hazard
Faller	06/05/84	Struck by pusher tree which kicked back	Push tree too close to snag, no escape route.	Attempted to push over snag
Faller	06/11/84	Crushed by log	Steep ground, little bush, slippery terrain	Log slid down hill
Skidder operator	06/14/84	Struck by tree being felled	Back to work after two month layoff	Faller did not ensure skidder was clear
Faller	06/14/84	Struck by tree being felled by Feller-Buncher	Overconfidence, working with back to machine	Working too close to Feller-Buncher
Faller	06/25/84	Struck by cut up snags	Poor falling practices	Snags disturbed by tree being felled
2nd loader	07/06/84	Struck by log that entered landing	Downhill yarding, Worker did not respond to warning whistles	Log dislodged by rigging above the landing

Listing of Fatal Accidents in Logging - 1983 to 1994

<u>Occupation</u>	<u>Date</u>	<u>Accident</u>	<u>Factors</u>	<u>Reason</u>
Supervision	07/13/84	Logging Superintendent. Struck by swinging grapple	Must have thought it safe to walk past	Walked past grapple log loader, not notify Oprtr.
Faller	07/26/84	Leaning tree fell striking worker	Poor work procedures	Faller had previously uprooted tree which fell
Faller	09/04/84	While falling tree struck in head by tree butt	Misjudged the hazard of this particular tree	Tree Barber chaired
Faller	09/07/84	Firm Principal. Struck by cut up snag which fell wrong way	Poor falling practices of unsupervised worker	Faller left snag cut up in close proximity
Faller	09/21/84	Struck by a falling limb	Large number of decadent trees and snags	Limb disturbed by snag being felled
Loader operator	10/09/84	Loader went off highway down 90% slope	Machine condition, operator condition	Operator apparently lost control
Faller	10/18/84	Worker struck by snag	Did not properly check work area prior to falling	Snag disturbed by previously felled tree
Faller	10/20/84	Struck by tree being felled	Lean of tree, decay in stump	Tree barber-chaired, 7" Dutchman
Lake Patrolman	09/14/84	Fell in lake and drowned	Inappropriate PFD.	Slipped on boom stick and hit head
Faller	11/06/84	Struck by previously brushed snag	Failure to fall snags first	Felled tree striking ground caused collapse
Hooker	11/22/84	Setting up rigging, struck by tightened haulback	Misjudged position of line due to small siwash	Gave go ahead while too close to running line
Cedar block splitter	01/21/85	Worker fell 125 ft down cliff by waterfall		Presumably went for drink and slipped
Landing buckler	01/27/85	Crushed by log which rolled off logging truck	Lack of communication between operator and victim	Grapple operator caused log to slide off
Faller	01/28/85	Crushed by top of 70ft. Cottonwood snag	Failure to progressively fall snags	Snag struck by Spruce being felled
Faller	02/04/85	Struck by previously cut-up tree		Domino falling
Faller	02/14/85	Struck by line attached to tree as tree fell	Inadequate undercut, wind	Worker did not get clear of tree and rigging
Faller	03/10/85	Struck by butt of Spruce tree being felled	Tree did not fall in expected direction	Spruce slid down aspen tree became spring loaded
Faller	03/21/85	Struck on head by small fir snag	Faller assumed he was in safe location re-fuelling saw	Cut up tree fell causing snag to fall
Faller	03/27/85	Struck by cut up tree	Core of tree was rotten	Stayed within reach of tree that would not fall
Log Truck Driver	03/29/85	Crushed between backing up truck & log truck	lack of communication between drivers	Worker placed self in hazardous position
Faller	04/22/85	Trainee. Struck by sucker from tree being felled	Unstable suckers & branches on tree being felled	Worker in unsafe position, (necessary for training)
Faller	05/16/85	Struck by Snag top which broke off	Random falling of snags, failure to work a face.	Faller brushed standing snags with tree
Chaser	05/28/85	Crushed Between Wheels & counterweight of yarder	Shear hazard between tire & counterweight	Walked under counterweight while yarder swinging

Listing of Fatal Accidents in Logging - 1983 to 1994

<u>Occupation</u>	<u>Date</u>	<u>Accident</u>	<u>Factors</u>	<u>Reason</u>
Faller	06/13/85	Struck on head by snag	Faller by-passed numerous snags	Snag dislodged by vibration of tree just felled
Faller	06/19/85	Struck by snag	Possibly vision obstructed by sun glare	Snag brushed by tree being felled
Faller	06/24/85	Struck by snag	Loss of control over direction of fall	Snag brushed by tree being felled
Faller	07/01/85	Struck by snag pushed by blow down tree	No instruction on how to handle falling difficulties	Saw stuck in tree, 2nd. worker caused it to drop
Faller	07/17/85	Struck by 91' Birch tree	Working too close	Crawler tractor pushed 77' birch into 91' birch
Landing Bucker	08/08/85	Fell backwards & struck back of head on rock	Lack of Planning, supervision, communication.	Brushed by tree being felled too close to landing
Skidder operator	08/09/85	Crushed as skidder rolled twice down 40% slope	Not use seatbelt,	Operating skidder off road over bulldozed stumps
Faller	08/09/85	Struck by rolling log		Unstable log in blow down area rolled unexpectedly
Faller	09/16/85	Struck by Snag	Did not keep attention on cut up snag	Previously cut up snag disturbed by gust of wind
Supervision	09/17/85	Woods Manager. Pick up truck collided with empty logging truck	Not known	Not use radio
Boomman	09/22/85	Run over by log truck trailer in dryland sort	No signals given prior to movement	Worker walked between truck & trailer
Skidder operator	10/03/85	Thrown out of skidder which rolled downhill	Not using seatbelt	Operator used poor procedures on sidehill
Skidder operator	10/10/85	Operator Thrown out of skidder down side hill	Not wear seatbelt, No drum quick release,	Skidder pulled off trail by runaway drag
Driller Blaster	11/25/85	Strangled by clothing	Cold weather, loose clothing	Loose clothing caught in rotating drill steel
Faller	11/14/85	Struck by part of snag being felled	Excessive stump rot	Faller failed to make a proper undercut
Log Truck Driver	11/27/85	Log truck left road on 11% grade, cab crushed.		Operator lost control on icy road
Tireman	12/03/85	Struck by unsecured stake on log transporter	Workers left unsecured stake in upright position	Movement of bunk caused stake to fall
Faller	12/20/85	Struck by tree being felled	Poor falling practices	Lost control of tree when trying to push
Log Truck Driver	01/07/86	Struck by a log	In bight, Loader operator did not ensure driver was clear	struck by log dislodged from log truck
Skidder operator	01/11/86	Log rolled on worker	Bent log, worker unaware of hazard	Unstable log rolled off pile
Faller	01/13/86	Struck by falling snag (Firm Principal)	Did not pay attention to hazard, fatigued worker	Snag leaning into tree being felled
Skidder operator	01/17/86	Crushed by rollover skidder	Slipped off side hill, Inexperience, Not using seatbelt	Thrown out of machine
Faller	01/23/86	Struck by cut up tree	Gusty winds, Not using wedges	Walked in front of partially pushed cut up tree

Listing of Fatal Accidents in Logging - 1983 to 1994

<u>Occupation</u>	<u>Date</u>	<u>Accident</u>	<u>Factors</u>	<u>Reason</u>
Log Truck Driver	01/31/86	Crushed by log load	Adverse weather conditions	Truck left highway
Skidder operator.	02/20/86	Skidder rolled over.	Did not use seatbelt	Using rubber tired skidder on very steep side hill
Chokerman	03/19/86	Struck by line which came free when tightened	Undetected siwash,Rigging slinger failed to clear area	line was tightlined with workers in the bight
Chokerman	03/19/86	Struck by siwashed line freed under tension	Undetected siwash,Failure to clear the area	Line was tightened while workers in the bight
Labourer	03/09/86	Lost control of vehicle	May have been mentally disturbed	Speed
Equipment operator	04/02/86	Crushed by "cat" blade	Poor rigging practice,attempting job without help.	Lifting lug weld let go
Skidder Operato	04/10/86	Skidder rollover	seatbelt did not hold victim in skidder	Edge of skidtrail sloughed out
Landing bucker	04/08/86	Struck by cut up log	Limited experience,lack of training & supervision	Put himself in bight
Faller	05/05/86	Struck by snag	Heavy snag area,poor getaway path.	Faller incorrectly assessed a hung up snag
Faller	05/15/86	Struck by piece of snag being felled	Workers escape path became hazardous due snag twisting	Severe twisting action during falling
Faller	06/02/86	Struck by snag	Poor falling practices,ineffectively supervised	While falling,brushed snag
Skidder Operato	07/02/86	Struck by cutup tree	No wedging tool,Wind,Victim entered danger area	Faller left tree,Could not wedge over
Faller	07/15/86	Struck by snag after falling tree	Worker was preoccupied with his retirement plans	Snag was hidden in tree
Faller	07/09/86	Tree barber chaired,kicked back striking faller	Faller did not recognize hazard of attached sucker tree	Attached sucker tree broke off causing kickback
Hooker	07/08/86	Large rock fell on him	Wet weather,Loose rocks.	Rigging dislodged rocks
Skidder operator	09/09/86	Crushed by runaway skidder	Lack of:experience,training,& instruction.	Slipped while attempting get aboard skidder
Log loader operator	10/01/86	Struck on head by log	Binder released load not secured,not wearing hard hat,60.220	Log rolled of top of of loaded truck
Chokerman	11/23/86	A log dislodged by the turn struck the worker	Dense regeneration,need to watch the turn	Did not take a position in the clear
Faller	11/27/86	Crushed by unwedged cut-up tree	Lack of experience	Domino falling
Supervision	12/12/86	Owner. Struck on head by exploding 45 gal drum lub-oil	Poor work procedure,workers ignorant of hazard.	Barrel heated by propane tiger torch
Faller	01/05/87	Struck by snag	Inadequate instruction,inexperience,	Felled his first tree into standing timber
Supervision	01/04/87	Owner. Drove pickup over 200'embankment		Lost control of vehicle

Listing of Fatal Accidents in Logging - 1983 to 1994

<u>Occupation</u>	<u>Date</u>	<u>Accident</u>	<u>Factors</u>	<u>Reason</u>
Faller	01/22/87	Struck by cut-up tree	Limb tied trees,lack of experience	Faller created jackpot,four trees came down
Faller	01/23/87	Struck by cut-up tree	Poor falling practices,gusting winds.	Wind blew tree over
Faller	01/26/87	Struck by tree being felled	Left tree cut up and walked away to find a pusher tree	Tried to fall the tree against the lean
Supervision	01/30/87	Owner-Operator. Struck by part of log loader when he jumped off	Icy conditions	Loader being towed,tow cable broke
Driller Blaster	02/06/87	Struck by falling rock	Disregarded supervisors orders	Working below unstable face
Log Truck Driver	02/09/87	Struck by log during unloading	Expediency	Moved into hazard area,did not inform loader op.
Log Truck Driver	02/09/87	Logging Contractor. Truck operator drowned	Unfamiliar with truck,engaged wrong gear	Backed truck into 162 ft of water
Log Truck Driver	02/18/87	Struck by broken mainline of grapple yarder	Deteriorated line,driver not aware of line-breaking noise	Did not take cover from breaking line
Faller	02/20/87	Struck by top of tree being felled by co-worker	Decadent tree,inconsistent lean pattern	Working within two tree lengths
Backhoe operator	02/03/87	Heart Attack	N.A	N.A
Faller	03/02/87	Struck by tree	Error in judgement,	Turned his back on cut-up snag limb tied to tree
First Aid Attendant	03/03/87	Tripped on steps of trailer,struck head on sill	No man check,Slippy steps	Possible drug overdose
Rigging slinger	03/05/87	Smoke inhalation	Had been drinking	Fire due to smoking in bed
Hooker	03/11/87	Struck by swinging log	Standing too close to the turn,marginal signals	Second log in the grapple scissored and swung
Rigging slinger	05/12/87	Worker free fell 120' from load hook	Foolish act of bravado,small hook,wet gloves,	Used unsafe work procedures
Equipment operator	04/27/87	Hydraulic log-loader tipped over on worker	Worker not in clear,poor set up configuration for lift	Overloaded log-loader
Yarder	05/21/87	Yarder cab struck by runaway boom stick	Steep ground,long timber	Spar was positioned in hazardous location
Landing buckler	06/19/87	Self loading log truck,swinging logs struck worker	Lack of co-ordination of work activities	Working too close to log truck
Log Truck Driver	06/25/87	Crushed by Tri-Axle trailer	Modified lift assembly,worker in bight,poor design	Hoist lift assembly failed dropping trailer
Bucker	07/01/87	Struck by log which rolled off loaded truck	Bucker did not appreciate his hazardous position	Bucking log that previously rolled off truck
Supervision	07/08/87	Firm Principal. Crushed by pick-up truck which rolled back on him	Pick-up parked on incline	Working under unsecured pick-up truck
Shake & Shingle cutter	07/09/87	Throat cut by kickback chain-saw	No chain brake,hungry chain,excessive raker depth	Over bucking resulted in buried bar nose

Listing of Fatal Accidents in Logging - 1983 to 1994

<u>Occupation</u>	<u>Date</u>	<u>Accident</u>	<u>Factors</u>	<u>Reason</u>
Rigging slinger	07/21/87	Struck by log being yarded	Poor directional signals, did not see developing hazard	Slack in skidding line allowed log to fall back
Chokerman	08/23/87	Struck from behind and crushed by rolling log	Worker in hazardous location	Unstable log deck
Faller	08/25/87	Hit by snag which fell through standing timber	Not known	Snag uprooted
Skidder Operato	09/03/87	Skidder went 800' down 30% slope.	Not known why lost control	Loss of control
Cat operator	09/30/87	Crushed by log	Worker made error in judgement	Bucking log, Pulled saw free, log rolled.
Helicopter Pilot	10/03/87	Helicopter crashed while lifting 5700lbs. Log		Mechanical failure
Hooker	10/20/87	Crushed by cedar slab	Unrecognized hazard	Setting choker on unstable log
Faller	10/05/87	Struck by butt end of windfall above him	Poor work procedures	Windfall disturbed by tree just felled
Faller	11/25/87	Struck by falling hung up trees	Inexperience, Lack of supervision, poor falling practices	Felling trees which were hung-up
Skidder operator	11/27/87	Struck by uprooted tree pushed over by a snag	Snag not removed prior to start, shallow root system on tree	Other skidder operator inadvertently bumped snag
Skidder operator	12/02/87	Crushed by windfall root wad against log	possible vibration from skidder	Root wad unexpectedly turned over
Chokerman	12/14/87	Struck by boomstick being yarded	Adverse weather, possible mental relaxation	Boomstick upended and swung sideways
Faller	01/12/88	Chest crushed by butt of tree being felled	Faller did not move away	Felled tree into standing timber
Hooker	01/27/88	Crushed by rolling log	Heavy snow	Rolling log struck by runaway log
Skidder Operato	02/11/88	Crushed by skidder roll-over	Not equipped with seatbelt, steep slippery slope	Blade struck stump causing roll-over
Cable log-loader operator	03/28/88	Crushed by loader as it went over bank	Operating loader in unsafe fashion	Operator pulled loader over bank heaving on log
Skidder operator	04/18/88	Skidder rolled 240' down side hill	Uneven ground, Canopy collapsed due impact.	Wheel rode up on stump causing rollover
Equipment operator	05/04/88	Crushed in cab of hydraulic excavator	Slip in the rock face. very steep terrain	85 ton rock fell on excavator cab
Yarder	05/20/88	Became wrapped in haulback around drum	Attempting to do two man job by himself	Inadvertantly engaged friction instead of brake
Supervision	05/25/88	Trainee Manager. Struck by piece of logging debris which fell 150'.	Worker entered hazard area	Debris disturbed by downdraft from helicopter
Faller	06/13/88	While bucking log, crushed by another log	Faller did not recognize unstable log	Previously bucked log rolled down on worker
Skidder operator	06/13/88	Struck by hung up tree	Workers entered active falling area, hot logging	Three hung-up trees fell into work area

Listing of Fatal Accidents in Logging - 1983 to 1994

<u>Occupation</u>	<u>Date</u>	<u>Accident</u>	<u>Factors</u>	<u>Reason</u>
Boom Logger	06/16/88	Drowning, body not recovered	Boat unsuitable for pulling long length of wire rope	Boom boat capsized-instability
Log Truck Driver	06/16/88	Loaded Log truck went over side of hill	Possible haste on part of driver	Lost control of vehicle
Rigging slinger	06/20/88	Struck by upending log	Log choked at wrong end	Standing too close to turn
Equipment operator	06/28/88	Excavator slid off road down bank	No man check, seatbelt not used.	Operator set machine up in hazardous position
Landing Bucker	07/08/88	Struck by log which fell off transporter	Failure to follow established work procedures	Worker not in clear of loading operation
Rigging Slinger	07/29/88	Struck on head by log	Standing too close to turn when he gave go ahead	Log disturbed by the turn moving
Faller	08/10/88	Struck by snag		Snag dislodged by top of tree being fallen
Bucker	08/23/88	Struck by tree being Felled	Working too close, lack of procedures,	Tree fell 90 degrees to intended direction
Faller	08/27/88	Struck by broken sucker	Faller had jackpot	Sucker limb tied to tree being felled
Skidder operator	10/04/88	Worker electrocuted while jumping from skidder	Workers unfamiliar with the hazard of power lines	Line loader being towed contacted 14.4KV
Chaser	10/12/88	Crushed By large log while unhooking chokers	Unstable log not properly secured by forks of loader	Worker ducked under log after removing choker
Chaser	10/06/88	Crushed by log while unhooking a 3 log turn	Unorganized cord deck pile, complacent attitude of worker	Logs not stable
Equipment operator	11/09/88	Excavator slid & rolled 900' down sidehill	Previous heavy rains	Super-saturated soil slid off bare rock
Log Truck Driver	11/11/88	Crushed by cedar chunk falling from load on truck	Lack of supervision, inclement weather,	Load was not restrained
Feller Buncher operator	11/10/88	Rolled feller buncher while traversing hillside	Not use seatbelt,	Machine became unstable due slope & soft soil
Faller	11/08/88	Struck by tree held in tension by skidder winch	Working alone,	Tree broke loose due tension in line
Faller	12/14/88	Struck by tree being felled	No getaway path, history of poor falling practices.	Tree grazed stump, kicked sideways, struck worker
Supervision	01/26/89	Logging Contractor. Crushed and buried by root wad	Short stump, ground depressions, 30% slope.	Wad & stump rolled down hill onto worker
Teamster (Team of horses)	02/07/89	Crushed against tree by draft horse	Team relatively new to logging	Horse for some reason became skittish
Skidder operator	02/23/89	Struck by tree being felled	Faller and victim were on opposite side of ridge	Entered hazard area to check on faller
Skidder operator	03/06/89	Pinned by tree while setting chokers	Situation appeared harmless	Inadvertant movement of unstable tree
Faller	03/16/89	Struck by limb which fell from fir tree	Failed to follow established falling techniques	Limb disturbed by limb-tied hemlock being felled

Listing of Fatal Accidents in Logging - 1983 to 1994

<u>Occupation</u>	<u>Date</u>	<u>Accident</u>	<u>Factors</u>	<u>Reason</u>
2nd loader	03/24/89	Crushed by backing up logging truck	Driver unaware of worker, did not give signal	While removing reach pin, driver moved truck
Faller	04/15/89	Trainee. After felling tree struck by tree which uprooted	Inadequate root system	First tree disturbed uprooted tree
Faller	05/03/89	Struck by snag	Forced to bypass snag to make room to fall it	Snag brushed by tree just felled
Boomman Trimmer	05/04/89	Worker drowned in lake	Not wearing PFD	Apparently fell from 14' aluminum boat
Faller	05/10/89	Struck by snag	Pushing trees, over confidence	Snag hung up in tree being felled
Rigging slinger	05/31/89	Struck by upending log while fighting a hang-up	Lack of training, mind on other things	Gave the "go ahead" before he was in the clear
Chaser	06/03/89	Struck by chunk which slid off incoming turn	Confusion in landing	Hobo upended and swung in unexpected direction
Faller	06/19/89	Struck in chest by tree which kicked back	Tree very rotten unable to wedge	Tree fell at an angle and brushed standing timber
Faller	06/26/89	Snag kicked back, hit saw, tooth cut femoral artery	Dog leg in snag caused it to rotate	Faller did not move away to safe position
Chaser	06/28/89	Crushed by backing up tracked log loader	Worker did not make clear his intentions	Did not ensure workers were clear
Faller	07/28/89	Crushed by felled tree against stump of snag	Faller had to get in precarious position to fall snag	When snag fell it allowed tree to drop on faller
Faller	09/18/89	Struck by piece of hung-up snag	Poor line of sight, gusting winds	Snag broke when hit by pusher tree
Faller	10/08/89	Struck by tree which swung sideways when felled	Lack of falling experience, Windy conditions	Felled two limb bound trees
Log Truck Driver	11/08/89	Struck by reach of tri-axle log trailer	Victim in unsafe location during unloading	Trailer slipped during unloading from truck
Skidder operator	11/15/89	Thrown from and crushed by skidder which rolled	Lack of skid trails, not use seatbelt	Operator lost control on steep slope 50%
Vessel Skipper	01/16/90	Firm President. Vessel Operator found drowned	Working alone	Not known
Faller	02/04/90	Crushed by snag being felled	Deep snow, worker in poor location	Used poor falling procedures
Skidder operator	05/21/90	Crushed when jumped clear of skidder which rolled	Steep terrain. Seatbelt?	Tried to turn skidder at unsafe location
Faller	06/01/90	Crushed by previously felled, bucked 33ft. log	85 degree slope, wet and drizzly, soft ground	Turned back on log he assumed was stable
Faller	07/05/90	While actively falling struck by 100'fir snag,	Recent blowdown, and heavy rains	Snag possibly disturbed by work activity
Log Truck Driver	08/15/90	Owner/operator. Thrown 10' from controls of hydraulic log loader	Pin had previous crack over half the cross section	Main rotating pin broke at deck level
Skidder Operato	10/17/90	Operator crushed during skidder rollover	Not using seatbelt, snow, soft ground	Part of skid trail gave way
Skidder operator	10/12/90	Crushed by skidder tire when he jumped off machine	Water in fuel, worker had calk boots attempted to jump clear. Seatbelt?	Skidder stalled and started to roll backwards

Listing of Fatal Accidents in Logging - 1983 to 1994

<u>Occupation</u>	<u>Date</u>	<u>Accident</u>	<u>Factors</u>	<u>Reason</u>
Skidder operator	10/14/90	Run over by his John Deere 740 grapple skidder	Not Use seatbelt, full door missing seatbelt	Fell out of skidder due alcohol impairment
Chokerman	10/09/90	Buried in mud slide	Steep side hill, many blowdowns, vibration from yarding	Side hill made unstable by heavy rainfall
Faller	11/17/90	Struck by widowmaker after falling tree	Numerous decadent candelabrum cedar, personal problems	Faller not see widowmaker, did not move from stump
Handyman	11/02/90	Drowned when truck fell off wharf ramp into water	20% diameter of stringer rotten, ramp horizontal	Ramp stringer broke at mid span
Hooker	11/23/90	Caught up in landslide	Rainfall exceeded B.C. Forest service safe work limits	Landslide due heavy rain and snow melt
Faller	10/08/90	Struck by section of tree being felled		Decadent tree
First Aid Attendant	01/16/91	Struck by skidder in landing	Victim wearing ear muffs, no backup alarm sounded	Skidder unexpectedly backed up
Faller	01/29/91	Struck by a cut-up snag	Faller using domino faling techniques	Snag struck by cut-up tree
Log Truck Driver	03/19/91	Struck by trailer which fell from fork of loader	Lifting eye badly worn	Worker placed self in bight
Faller	03/03/91	Struck by back falling cut-up tree	Worker had negative attitude towards supervisors	Domino falling
Skidder operator	03/19/91	Run over by skidder which rolled backwards	Parking brake not work, blade not lowered,	Setting chokers behind unsecured machine
Log Truck Driver	06/25/91	Crushed under wheels of loaded logging truck	Airlines connected incorrectly, 19% grade	Driver tried to jump into moving vehicle, fell
Log Truck Driver	07/26/91	Struck on head by chunk of log	Unfamiliar work procedures, worker fatigue	Chunk fell when rear cinch bar was released
Skidder operator	08/05/91	Operator thrown from rollover skidder	Steep terrain, unable to maintain skidder stability	Did not use seatbelt
Landing Bucker	08/01/91	Consumed in forest fire	Steep uneven terrain, many dry bucked logs,	Fire jumped retardant barrier and overtook worker
Skidder operator	09/02/91	Crushed by rops canopy following skidder rollover	Not use seatbelt, deteriorated tires, steep terrain	Lost control of skidder on 60% slope
Faller	09/13/91	Struck by tree limb-tied to tree being felled	Butt of second tree was rotten but this was not evident	Did not get clear of the stump after falling tree
Skidder operator	08/06/91	Operator thrown out of rollover skidder	Cross skidding on steep slope	Not use seatbelt
Cat Operator	10/28/91	Operator backed cat into Williston lake, drowned		Did not expect sharp drop off
Watchman	12/29/91	Fell in water and drowned	No PFD, poor illumination, slippery planks	Slipped off poorly maintained floats at night
Driller Blaster	02/12/92	Clothing wrapped around rotating rock drill	Job procedure requires two people, one at controls	Greasing job required drill to be operational
Labourer	02/21/92	Struck by tree being felled	Lack of procedures, supervision, inexperience in falling	Worker was within ten feet of tree being felled

Listing of Fatal Accidents in Logging - 1983 to 1994

<u>Occupation</u>	<u>Date</u>	<u>Accident</u>	<u>Factors</u>	<u>Reason</u>
Handyman	05/08/92	Camp handyman. Drowned while operating 14 foot aluminum boat	Not use PFD	Slipped or fell in the sea
Log Truck Driver	05/20/92	Crushed by load when log truck left road	Worker drove truck contrary to mechanics advice	Failure of leaf springs on left steering tire
Faller	06/01/92	Struck by snag that was brushed by falling tree	Poor wood fiber, large dutchman, poor falling cuts	Tree fell 90 degrees from intended path
Chaser	08/11/92	Bucked limb from log which then rolled on him	Working on log deck, log not cleanly bucked placed on pile	Bucked off load bearing limb from low side of pile
Skidder operator	09/04/92	Skidder traveled 130 feet downhill causing trauma	Not wear seatbelt, faulty brakes, 35% slope,	Op. lost control of skidder in towing operation
Log Truck Driver	10/29/92	Struck on chest by short fir peeler from load	Removing loose limbs before load was secured	Peeler dislodged by removing loose limb
Faller	12/22/92	After felling tree, struck by another tree	Snow created whiteout conditions	Second tree limb tied to first tree
Skidder operator	01/19/93	Crushed by skidder which slid off trail	Not use seat belt, inattention	Slid on snow which hid firm ground
Faller	01/25/93	Tree being felled kicked back striking faller	Failure to fall sapling which contributed to kickback	Used unsafe falling procedures
Bulldozer operator	02/16/93	Ejected from machine which rolled & crushed him	Bulldozer had wrong tracks for icy conditions. Seatbelt?	Machine slipped off road on icy section
Bucker	05/04/93	Struck by blowdown log which moved when bucked	Very steep sidehill, failed to note log instability	Worker placed self in position with no escape
Faller	05/07/93	Struck by tree that he was falling	Did not clear escape route, faller had personal problems	Tree barber-chaired due insufficient undercut
Heavy Duty Mechanic	05/15/93	Trapped in wheelhouse when bowloader overturned	No means of getting water off deck, stability info suspect	Water on deck made vessel unstable
Hooker	05/31/93	Struck by green tree while leaving hazard area	Poorly rooted rotten tree, lots of decadent timber in area	Tree blown down by rotor wash
Log dump operator	06/08/93	120' steel a frame log dump structure collapsed	Improperly installed cable clamps, no engineered design	Unit overloaded, foundation movement
Hooker	06/01/93	Struck by small chunk while setting skyline	Production pressures, inattention	Worker was standing in bight of line
Skidder operator	07/26/93	Crushed during skidder rollover	Excessive slope, no skid roads, probable not use seatbelt	Skidder became unstable sideways to fall line
Rigging Slinger	08/03/93	Worker collapsed in convulsions after 6 hrs. work	Possible heat stress due physiological condition ?	Not Known
Faller	08/20/93	Bucked logs in falling area, rolled on worker	No escape route, victim died of heart attack	Logs disturbed by tree being felled
Faller	08/30/93	Buried by rootwad of two uprooted hemlock trees	90% slope, poorly rooted trees, poor visibility, wet ground,	Previously felled tree disturbed hemlocks
Hooker	08/05/93	Trapped between two decadent cedar blowdowns	Worker was not in the clear, in a hazardous position	Blowdowns disturbed by log being yarded
Faller	09/18/93	Struck by previously cut up tree	Gusting winds, not use wedges	Leaving cut up trees, while cutting pusher tree

Listing of Fatal Accidents in Logging - 1983 to 1994

<u>Occupation Date</u>	<u>Accident</u>	<u>Factors</u>	<u>Reason</u>
Landing Bucker 10/29/93	Struck by logs in loading are	Location of log loading area below yarding area	Runaway log struck decked logs which struck worker
Equipment operator 11/17/93	Rolled John Deere 850B crawler	Not wear seatbelt	While turning downhill track slipped on rocks
Skidder operator 12/07/93	Wheeled skidder rolled over operator	Deep snow, high stumps,	Attempted to re-enter hung-up unstable machine
2nd loader 11/19/93	Buried in landslide while bucking logs	Steep logged slope, heavy rainfall,	Supersaturated logged slope let go
Skidder Operato 12/20/93	Multiple Crushing	Violation of two tree length rule	Struck by tree
Faller 01/20/94	Worker struck by a tree previously cut-up.	Near end of shift, rotten butt, steep ground, tree leaning up hill	Cutting up a pusher tree, original cut-up tree fell back.
Grapple yarder operator 01/12/94	Grapple yarder left road and fell on its side.	Steering system failure	Worker crushed when a stump entered and destroy the cab area of yarder.
Skidder Operato 02/18/94	Struck by falling snag	Skidder with a drag.	Hazardous snag in standing timber not identified as hazardous.
Grapple yarder operator 02/18/94	Principal. Worker crushed between grapple arms	Failure to lockout or de-energize equipment	Failed to de-energize steyr processing head
Supervision 01/07/94	Woods Foreman. Worker drove where trees being felled.	Lack of adequate control of traffic.	Driving into an active falling area.
Equipment operator 05/14/94	Worker collapsed on job site		Worker suffered acute myocardio infarction
Faller 05/16/94	Worker hit by brushed up tre	Inadequate supervision, worker's 1st day on job, had not felled for 7 months.	Lost control of fall of a tree.
Log Truck Driver 06/23/94	Worker was crushed between the front tire & boom of FEL	Hydraulic valve failure.	Elevated boom not support as required by Regulations.
Chaser 06/21/94	Worker was run over by FEL	No supervision, no back-up alarm, chaser had back to loader.	Chaser not in the designated safe area.
Faller 06/23/94	Struck by a dry poplar snag.	Inadequate supervision and enforcement of procedures & Regulations	Faller failed to remove the sang as required.
Grader Operator/Handy man 06/20/94	Struck on head with a pry bar.	Not seuring track against inadvertent movement.	Prying on bar to align track ends, track shifted causing bar to swing.
Log Truck Driver 07/12/94	Run over by a truck.	Brakes not properly adjusted, Use of trailer park as a parking brake	Truck ran away, brakes out of adjustment.
Landing Bucker 02/10/94	Skidder & turn ran over the worker.	No brakes	Operator lost control of machine.