



NEW ZEALAND

## REPORT

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## ANALYSIS OF LOST TIME ACCIDENTS — 1988

(ACCIDENT REPORTING SCHEME STATISTICS)

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## INTRODUCTION

A substantial increase in lost time, minor, and near miss accidents were recorded by the LIRA Accident Reporting Scheme during the 1988 calendar year compared with 1987 records (Table 1). The increase is considered to be a reflection of an improvement in the reporting of accidents rather than an increase in frequency of logging accidents.

*Table 1: Accidents recorded by the Scheme for 1988*

	1988	1987
Fatal accidents	5	7
Lost time accidents	259	173
Minor accidents	38	17
Near miss accidents	39	18

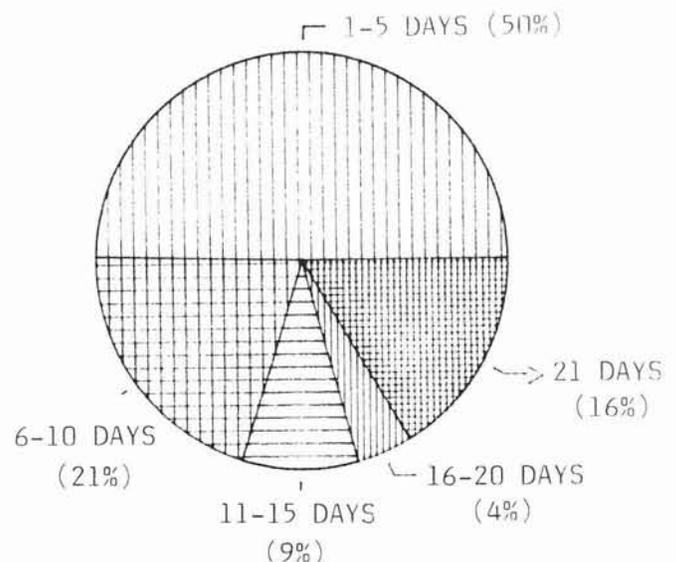
Information supplied for the accident description is highlighting the frequency of accidents occurring due to poor or wrong techniques. Along with the summary of lost time accidents for 1988, this Report will also discuss the influence of operator technique on accidents.

## ANALYSIS OF 1988 LOST TIME ACCIDENTS

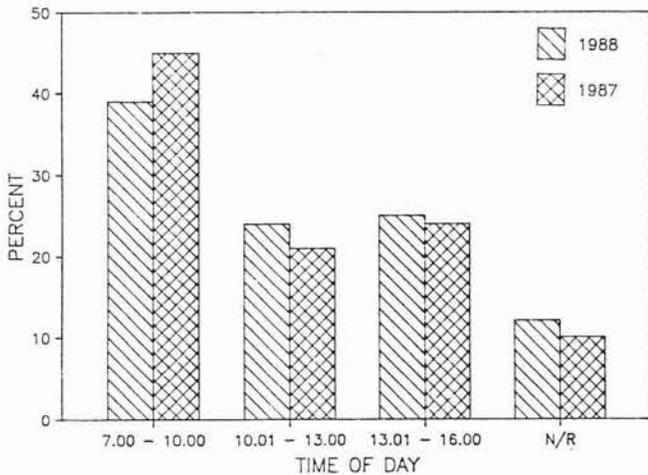
## Lost Time Per Accident

Of the 259 lost time accidents, the average time lost per accident was 15 days, (the same as 1987) with the range of days lost from 1 day to 130 days. As the time lost for some accidents is an estimate, caution should be used in how this figure is interpreted.

Figure 1 shows the distribution of time lost. As half of the accidents resulted in five days or less of lost time, the Accident Compensation Corporation would only be aware of half the accidents that occur in logging.



**Figure 1 : Distribution of Lost Time Accidents (Days Lost)**



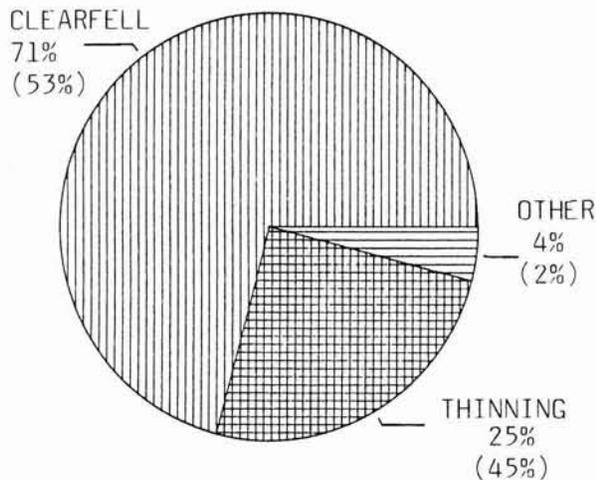
**Figure 2 : Lost Time Accidents by Time of Day**

**Time of Day of Lost Time Accidents**

The strong trend continues for accidents to occur during the first "run" (7.00 am to 10.00 am) of the day (Figure 2). The periods used for analysis are 7.00 am to 10.00 am, 10.00 am to 1.00 pm, and 1.00 pm to 4.00 pm.

**Number of Lost Time Accidents by Type of Operation**

In this analysis windthrow logging was classified as a clearfell operation in the Bay of Plenty as a result of Cyclone Bola. This is clearly evident in the significant reduction of thinning accidents and the increase in clearfell accidents (Figure 3).



**Figure 3 : Lost Time Accidents by Type of Operation (1987 equivalent in brackets)**

The majority of the accidents, 70% (72%), occurred in skidder operations, followed by tractor, 13% (18%), and hauler, 11%(10%).

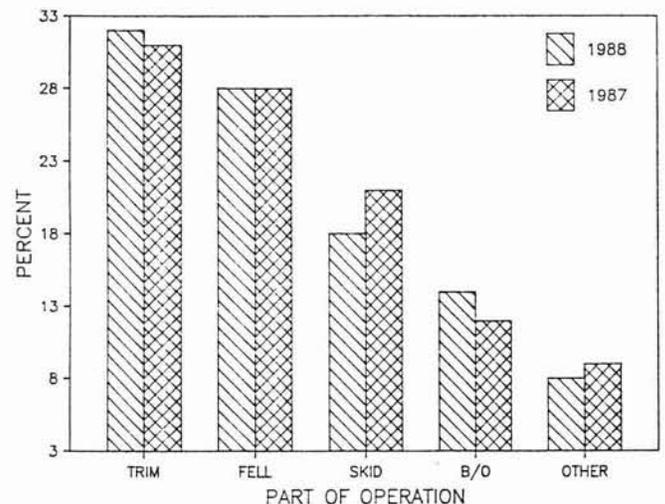
The average number of days lost in clearfell accidents was higher than in thinning. This is similar to the finding for 1987 as was the average number of days lost per accident (Table 2). There has been a slight decrease in the average time lost per accident in clearfelling, however, the variability of the data means caution should be used in interpreting this information.

The total number of days lost during 1988, based on the Scheme was 3,211. Assuming an average of 235 work days per year, this is the equivalent of 13.7 man years, or 1% of the workforce.

**Lost Time Accidents by Logging Task**

Looking at the four main tasks of logging work - trimming, felling, skid work and breaking out - trimming again incurred the largest percentage of lost time accidents. This was followed by felling, skid work, and breaking out respectively (Figure 4).

Laceration accidents were again the most common type of injury, 48%, followed by bruising, 25%, with 9% for each of fracture and sprain/strain type injuries. The



**Figure 4 : Lost Time Accidents by Part of Operation**

Table 2 : Accident Severity - Clearfelling versus Thinning \* (Days Lost)

		Severity (days lost per Accident)	
Type of Operation	Number*	1988	1987
Clearfell	161	15.8	18.8
Thinning	47	13.0	10.1
All Lost Time Accidents	213	15.1	15.0

\* Number of observations do not correspond with data in Table 1 due to missing information about the amount of time lost. This follows in all such analyses.

predominance of laceration type injuries reflects the role of the chainsaw in logging accidents.

**Lost Time Accidents by Part of Body Affected**

As with 1987 data, hands and feet again dominated the percentage of lost time accidents to various parts of the body, accounting for 40% of all accidents. Of the 102 accidents to the hands and the feet, two-thirds were directly attributable to the chainsaw.

There is equipment available which would assist in reducing chainsaw kickback accidents to the hands. The mitt, chainbrakes, and correct grip on the front handle will all reduce the potential accident severity of kickback provided they are in good condition and/or used.

The percentage of lost time accidents by the various parts of the body are shown in Figure 5.

Lower leg accidents, as a percentage, increased slightly on 1987 data. The majority of these accidents, and accidents to the upper legs, are bruising, strain/sprain, or fracture injuries. Of the total 61 leg accidents, 17 were chainsaw cuts. Half of the chain saw cuts to the leg occurred because:

- the operators were not wearing leg protection,

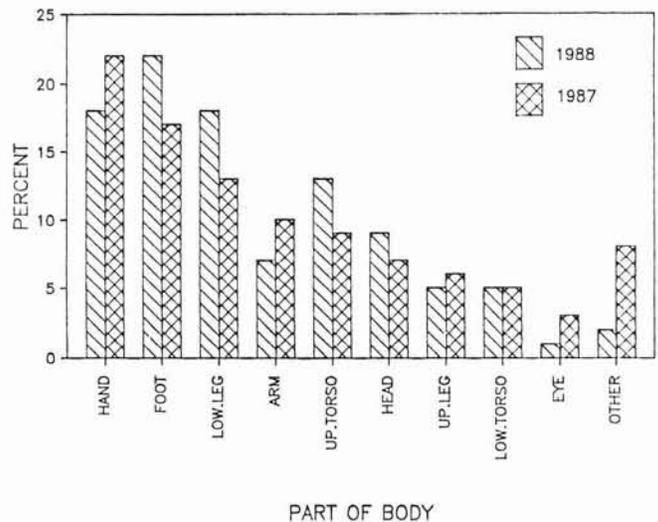


Figure 5 : Lost Time Accidents by Part of Body

- the saw cut between the end of the protective garment and the top of the boots (only occurred with chaps),
- the protective garment twisted around the leg (chaps only)
- the operator cut the back of the calf.

**Technique Related Accidents**

With the prototype chainsaw safety boots (incorporating kevlar cut resistant material) now on trial, a recent company policy making chainbrakes on saws compulsory, and the evaluation of protective

**Table 3 : Technique Related Accidents in Trimming**

	Number	Days Lost
<i>Trimming Accidents</i>	84	1221
<b><u>Technique related :</u></b>		
(a) <i>Walking on top of the log to trim - e.g. - fell off log and landed on saw - fell off tree, threw saw to ground, landed on it</i>	28	235
(b) <i>Over-reaching while trimming beside log - e.g. - this type of accident occurs when the operator tries to cut underneath branches from opposite side to that which he is walking on</i>	3	34
(c) <i>"Poor Technique"</i>	3	74
	<u>34</u>	<u>343</u>

gloves for chainsaw operators, there is little else in terms of protective equipment that can be provided. Even with all the protective equipment in good condition, and used, logging accidents will no doubt still occur. The other important contributing factor to most accidents is poor or incorrect technique.

An analysis of trimming accidents has been carried out on the reported information. 40% of these accidents are considered to be as a result of poor or incorrect technique. Table 3 details the types of accidents that were technique-related and lists the time lost for each category.

Accidents caused by working in front of cut-up trees and trimming between the feet are definitely avoidable. The number of lost time accidents that occurred through the operator falling off the log he was trimming is of concern. In many instances, when an operator walks on top of a log to trim he could just as easily trim while walking alongside. Many of the falling accidents occurred in windthrow operations. An alternative technique for dealing with

windthrow (Moore 1989) has been evaluated. The technique was found to be equally productive and should be used to reduce the risk to the operator.

### CONCLUSIONS

The increase in the number of lost time accidents recorded by the LIRA Accident Reporting Scheme during 1988 is considered to be a reflection of improved recording rather than an increase in the total number of accidents.

The "quantity and quality" of data collected continues to improve, providing valuable information to direct LIRA research in this field.

### REFERENCE

Moore, T.J. (1989): "The Effect of Improved Working Conditions for Chainsaw Operators in Windthrow", LIRA Report Vol 14 No. 3.

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