

ANALYSIS OF LOST TIME ACCIDENTS — 1987

(ACCIDENT REPORTING SCHEME STATISTICS)

John Gaskin

A4835 /01

INTRODUCTION

The total number of accidents recorded during the past calendar year by the Accident Reporting Scheme was the lowest since the Scheme started in 1983. A substantial reduction in the number of accidents (from a high of 381 in 1984 to 215 in 1987) was recorded. On a less encouraging note, 1987 saw the largest number of fatal accidents (7) recorded through the Scheme.

It is well recognised in accident research that a strong relationship exists between the numbers of fatal and lost time accidents (Kay, 1974). The apparent reduction in the total number of accidents in 1987 therefore must be treated with caution. Rather than a reduction in accidents, this is probably complacency in reporting.

A breakdown of accidents recorded during the year is presented in Table 1.

Table 1 - Accidents recorded by the Scheme for 1987

	1987	(1986)
Fatal accidents	7	(4)
Lost time accidents	173	(215)
Minor accidents	17	(33)
Near miss accidents	18	(8)

The importance of maintaining a good data base of accident statistics cannot be overstressed. The information can be used for :

- guiding industry management and employers in their safety programmes
- focussing research and training efforts
- increasing workers' awareness of hazards
- negotiating reductions in Accident Compensation Corporation levels for logging work.

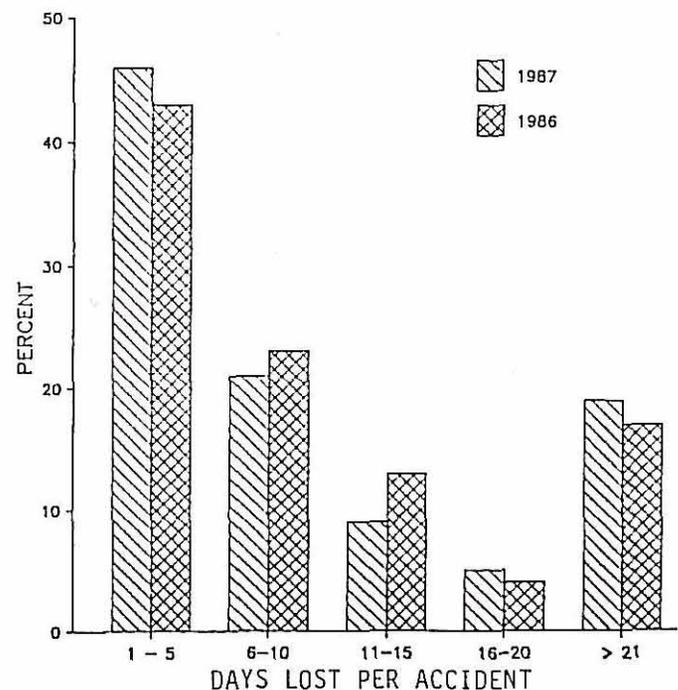
ANALYSIS OF 1987 LOST TIME ACCIDENTS

Lost Time Accidents

Of the total 173 lost time accidents, 142 noted the number of days lost through the accident (82%). This was slightly more than for 1986, when 79% recorded the time lost. The average time lost per accident was 15 days, with the range from 1 day to 99 days.

Figure 1 shows the distribution of time lost. Approximately half of the accidents resulted in five days or less lost time. Two-thirds of the accidents lost ten days or less. This suggests that the Accident Compensation Corporation would only be aware of half the accidents that occur in logging. The remainder are paid for by the employer.

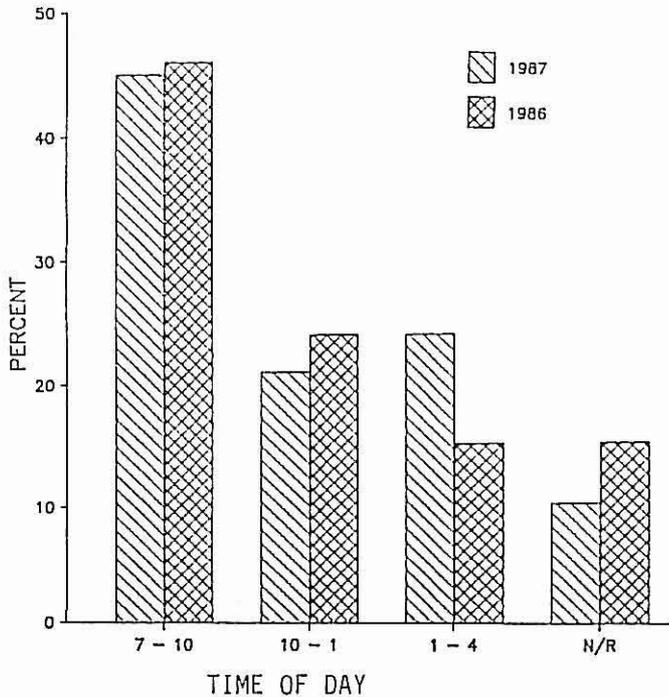
Figure 1 - Distribution of Lost Time Accidents



Time of Day of Lost Time Accidents

The strong trend of accidents occurring during the first "run" of the day continues to be evident. The periods used for analysis are 7.00 a.m. to 10.00 a.m., 10.00 a.m. to 1.00 p.m. and 1.00 p.m. to 4.00 p.m. Figure 2 illustrates this trend and compares 1987 data to 1986 data.

Figure 2 - Time of Day of Lost Time Accidents



Day of the Week of Lost Time Accidents

The trend of more accidents on Mondays and Tuesdays, identified in previous analyses, was not evident during the past year (Figure 3). The number of accidents for each day (Saturday and Sunday excluded) was similar.

Number of Lost Time Accidents by Type of Operation

The number of lost time accidents for each operation type recorded is different than last year (Figure 4). While the percentage for clearfell remained the same, there was an increase in the proportion of thinning accidents. The other two categories - native and other - accounted for only 0.5% of lost time accidents.

The average number of days lost in clearfell accidents was higher than in thinning. This contradicts the previous year's data. Again there has been a slight increase in the mean

number of days lost per accident. Given the variability of the data, no firm predictions can be made on likely trends. Table 2 shows the comparison of the two main types of logging operations.

The majority of accidents (72%) occurred in skidder gangs, with 18% and 10% in tractor and hauler gangs respectively. This finding is consistent with the predominance of skidder logging in New Zealand (Liley, 1985).

Figure 3 - Day of Week of Lost Time Accidents

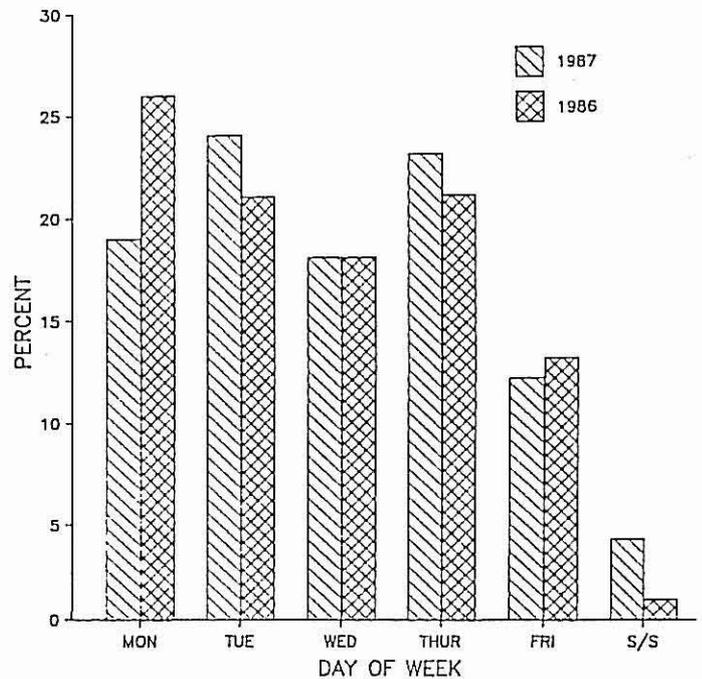


Figure 4 - Lost Time Accidents by Type of Operation

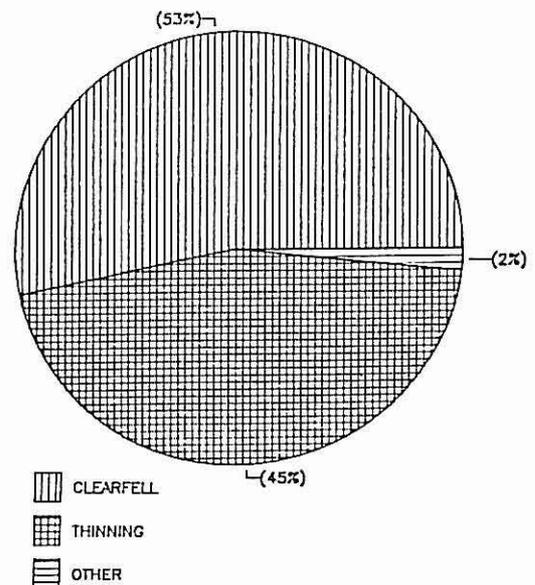


Table 2 - Accident Severity -
Clearfelling versus Thinning* (Days Lost)

<u>Type of Operation</u>	<u>Number**</u>	<u>Severity</u>	
		<u>1987</u>	<u>(1986)</u>
Clearfell	74	18.8	(12.2)
Thinning	67	10.1	(17.9)
<hr/>			
All Lost Time Accidents	142	15.0	(14.0)

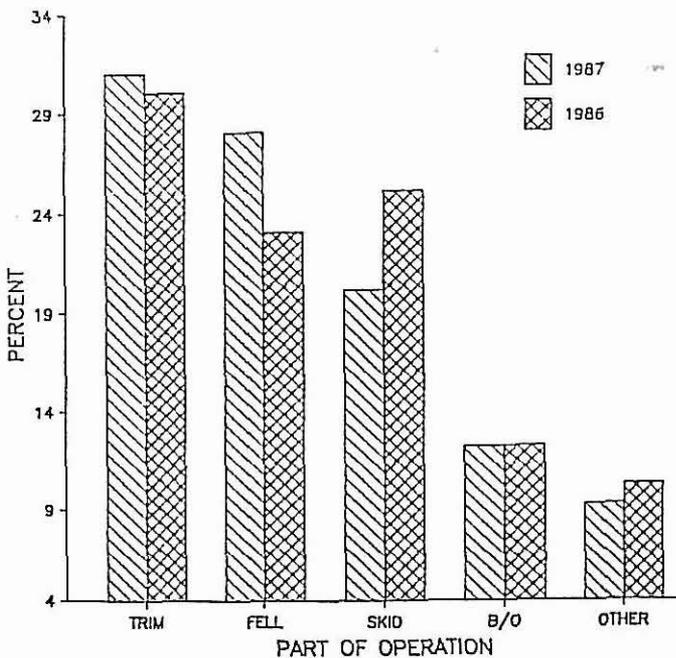
* All measurements are in days

** 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.

Lost Time Accidents by Job Component

During 1985 and 1986 the number of lost time accidents for the four major categories of logging work (felling, trimming, skid work and breaking out) varied little. In 1987 trimming incurred the most accidents, felling had the second highest number, with skid work third. Breaking out remained at the same level (Figure 5).

Figure 5 - Lost Time Accidents by Job Component



In terms of accident severity, skid work had the highest number of days lost per accident (17.7), followed by felling (16.5), breaking out (14.6) and trimming (12.1). These figures do not include fatal accidents - four in felling, two in breaking out, and one in "other".

Laceration type accidents were again the most common (51%) indicating the influence of the chainsaw. The average severity of these types of injuries was 12 days lost per accident. The second largest group of injuries was bruising (21%), followed by sprain/strain type injuries (10%) and fractures (8%). As would be expected, fracture injuries have the highest severity, with 55 days lost per injury.

Lost Time Accidents by Part of Body Affected

The feet and hands continue to be the part of the body most often injured. A slight increase in the number of injuries to the arm was recorded with no change in injuries to the other parts of the body (Figure 6). The severity of feet and hand injuries is 15 and 12 days per accident respectively.

Lost Time Accidents against Years of Experience

Figure 7 compares the percentage of loggers, in three experience classifications, who had lost time accidents, with the percentage noted by the Logging Workforce Survey (Wilson et. al, 1987) as being in that classification. The trend identified last year of a disproportionate number of accidents occurring to workers with less experience continues to be evident.

Figure 6 - Lost Time Accidents by Part of Body

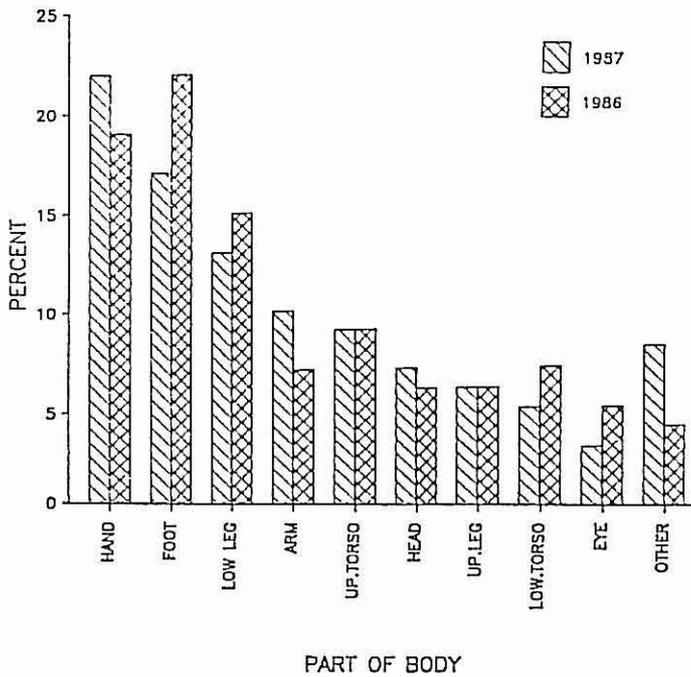
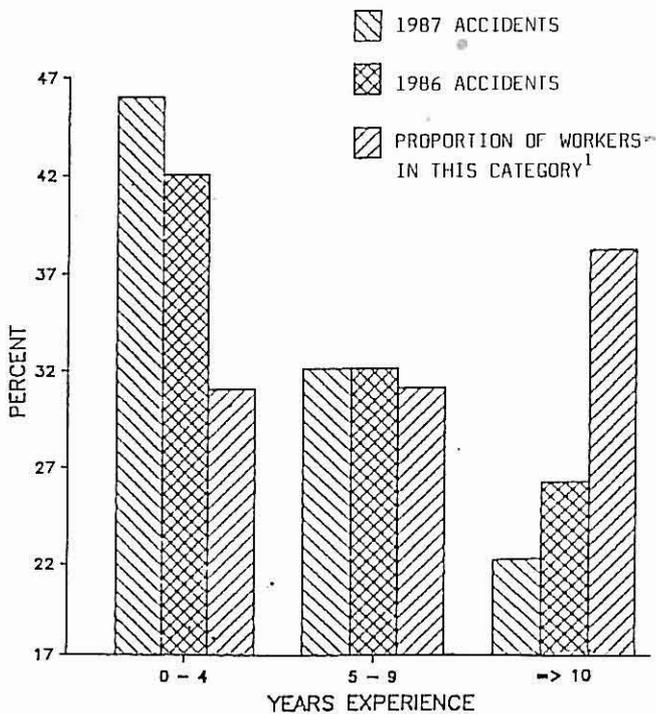


Figure 7 - Lost Time Accidents against Years of Experience



¹(BASED ON DATA FROM THE LOGGING WORKFORCE SURVEY)

CONCLUSIONS

There was a marked decrease in the number of accidents recorded by the Accident Reporting Scheme for 1987. This is surprising given the increase in the number of fatal accidents recorded by the scheme, and is most likely due to complacency in reporting rather than a real reduction in accidents.

The quality of data continues to improve in terms of the reportage of the number of days lost, years of experience of victims, time of day, and loggers certificate level.

The trend identified in the previous two years of increases in the percentage of injuries to the hands and feet has continued in 1987. An investigation into hand injuries is planned during 1988. This study will identify the effectiveness of various hand protection for chainsaw operators.

REFERENCES

- Kay, H. (1974) : "Accidents : Some Facts and Theories - In Psychology at Work", Edited by Peter Warr, Cpt. 6 Penguin.
- Liley, W.B. (1985) : "A Survey of the Logging Industry - 1985", LIRA Report Vol. 10 No. 12.
- Wilson, P; Smith, B; Gaskin, J. (1987) : "The Logging Workforce in Northland (A Comparison with the Bay of Plenty)", LIRA Report, Vol. 12 No. 12.

For further information, contact:

N.Z. LOGGING INDUSTRY RESEARCH ASSOC. INC.
P.O. Box 147,
ROTORUA, NEW ZEALAND.

Telephone: (073) 87-168