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TURNOVER IN LOGGING

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ABSTRACT

Analysis of three years data collected by NZFP Forests Limited showed the turnover rate amongst loggers to be, on average, 47.7% per annum. The turnover of new recruits was highest in the first twelve months of their employment.

After two years employment 78% of the new recruits not holding loggers' certificates had left the NZFP Forests Limited's logging system, while only 30% of certificated loggers had left.

INTRODUCTION

Turnover amongst logging workers employed within the NZFP Forests Limited logging system has been monitored (since November 1984) at six-monthly intervals. The survey method was designed and instigated by R. Bosman, a Logging Supervisor with NZFP Forests Limited.

An understanding of the levels, types and reasons for turnover is important to the industry for estimating future recruitment and training needs. Furthermore, turnover is an expensive aspect of manpower. Wilson (1986) suggested that each turnover occurrence cost approximately \$1,000. In 1988 values, the average cost per turnover is closer to \$1150. Gaskin (1987), in reviewing the first year of NZFP Forest Limited's data, noted a turnover rate of 57% per annum. In the only other recent study of turnover in logging, Smith and Wilson (1983) found an average rate of turnover of 25.6% per annum over the period from 1961 to 1979. This study, however, investigated the turnover of those workers directly employed by the company concerned and did not include the contract workforce.

The purpose of the present report is to examine the following aspects of the turnover of NZFP Forests Limited logging workers:

- (1) The age and length of service of loggers leaving.
- (2) The volume and 'type' of turnover.
- (3) The turnover of new recruits.
- (4) The effect of Logger's Certification on workforce stability.

During the three years covered by the surveys, NZFP Forests Limited have changed their company logging gangs to contract operations. These contracts were typically taken by the company employed loggers. The effect of this change will also be discussed.

MANPOWER SURVEY

The information collected each time was as follows :

- Gang identification number used by the Company.
- Gang Code, eg TT = Thinning tractor, CH = Clearfell hauler.
- Name and date of birth of each person employed in the gang
- The year in which they started working in logging.
- A record of Logger's Certification level.

The turnover of loggers was classified in four ways :

- (1) Those who had left the logging industry.
- (2) Those whose subsequent employment was unknown.
- (3) Those who had left the NZFP Forests Limited system, but had remained in the logging industry, i.e. gone to work for a contractor/gang in another forest.
- (4) Those who had gone to work for a different gang within NZFP Forests Limited.

The first three categories represent the total turnover of loggers from NZFP Forests Limited, while the fourth measures the rate of transfer within the NZFP Forests Limited logging system. From the industry's point of view, all turnover must be regarded as costly. However, it can be argued that the first three types are more serious as they involve a loss to the Company's/contractor's training investment. From the industry's point of view, the first, and potentially the second type, involves a serious loss to the industry.

The final type of turnover is of least concern to NZFP Forests Limited as they have still retained the logger within their system. However, from an individual contractor's point of view, a loss of his training investment will also have been incurred.

RESULTS

Age and Time in Logging

Table 1 shows the average age and time in logging of NZFP Forests Limited loggers for November, 1984 and November, 1987.

	November 1984		November 1987	
	Average	(No.)	Average	(No.)
Age (years)	31.5	(566)	32.2	(449)
Time in Logging (years)	9.4	(566)	10.6	(449)

Table 1 : Age and Time in Logging

Given that the change from company to contract logging resulted in many "early retirements" it was expected that a reduction in the average age of loggers would be evident. No significant change was observed. The average age was in fact slightly higher than the 29.5 years observed in the Bay of Plenty Logging Workforce Survey (Gaskin et al. 1987). Similarly, an expected reduction in the average time in logging as a result of the shift from company to contract logging was also not confirmed. The figures of 9.4 and 10.6 years were again slightly higher than the 8.1 years observed in the Workforce Survey.

The effect of the move from Company to contract logging is clearly shown in Table 2. The time in logging and time employed in the present gang have been calculated for employees leaving the NZFP Forests Limited logging system between May, 1984 and May, 1987. The restructuring commenced about the middle of 1986 and it is evident that both of these variables increased significantly in November 1986 and May 1987 as a result of older company employees taking early retirement.

Turnover

Turnover has been calculated using the method described in Smith and Wilson (1983) :

$$\text{Labour Turnover (LT0)} = S/N * 100$$

Where S = the number of separations during a specified period of time.

N = the average number employed by the organisation during the time in question.

The periods examined were:

- November 1984 to November 1985.
- November 1985 to November 1986.
- November 1986 to November 1987.

Of the four types of turnover identified only the first three are included in this analysis:

- Those who left the industry.

Table 2 : Time in logging and time in gang of employees leaving between May 1984 and May 1987

	May 1985	November 1985	May 1986	November 1986	May 1987
Time in Logging (years)	7.6	7.0	6.9	9.6*	10.3*
Time in Gang (years)	2.2	2.1	2.1	4.1	3.5

* Significantly different at the 95% confidence level from May, 1985, November, 1985, and May, 1986.

-Those whose whereabouts were unknown.

-Those who stayed in logging but not in the NZFP Forests Limited system.

The results are illustrated in Table 3.

The reason for the increase in percent turnover per year is mainly the effect of moving from Company to contract logging. This transition has meant a reduction of 98 loggers in the system. The average turnover during the three years was 48%, i.e. almost one logger in two leaves the NZFP Forests Limited logging system each year!

If the cost of \$1150 per turnover is applied to the total number who left during the three year period, the cost to the Company/contractor was \$853,300, or approximately \$290,000 per annum.

Turnover in New Recruits .

While some recruitments include people previously employed by NZFP Forests Limited, the majority are new people to the system.

The purpose of this section is to examine the turnover of these new recruits over the period covered by the survey. Smith and Wilson (1983), outlined two formulae for measuring the turnover of new recruits. This report uses the 'Survival Rate' (SR), and is calculated as follows :

$$SR = \frac{\text{Number of new members who remain during a period}}{\text{Number of new members}} * 100$$

Five groups of new recruits are examined, each group representing those who started during the five 6-monthly intervals between November 1984, and May 1987.

Table 3 : Level and Type of Turnover by Survey Yearly Period

	Period Covered by Survey					
	November 1984 to November 1985		November 1985 to November 1986		November 1986 to November 1987	
Average number employed during year	562		534		464	
Type of Turnover:	No.	%	No.	%	No.	%
Left Logging	85	15%	46	9%	57	12%
Unknown	75	13%	144	27%	105	23%
Different Company	78	14%	66	12%	86	18%
Total (p.a.)	238	42%	256	48%	248	53%

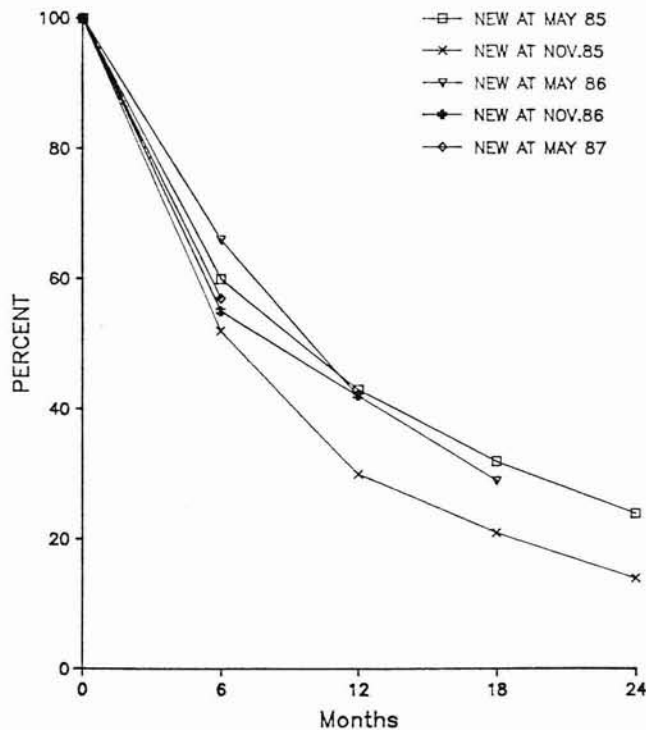


Figure 1 - Survival Rates of New Recruits

The data was further analysed to investigate the effect of length of service on the likelihood of leavers staying in the industry compared with leaving the industry. (Figure 2)

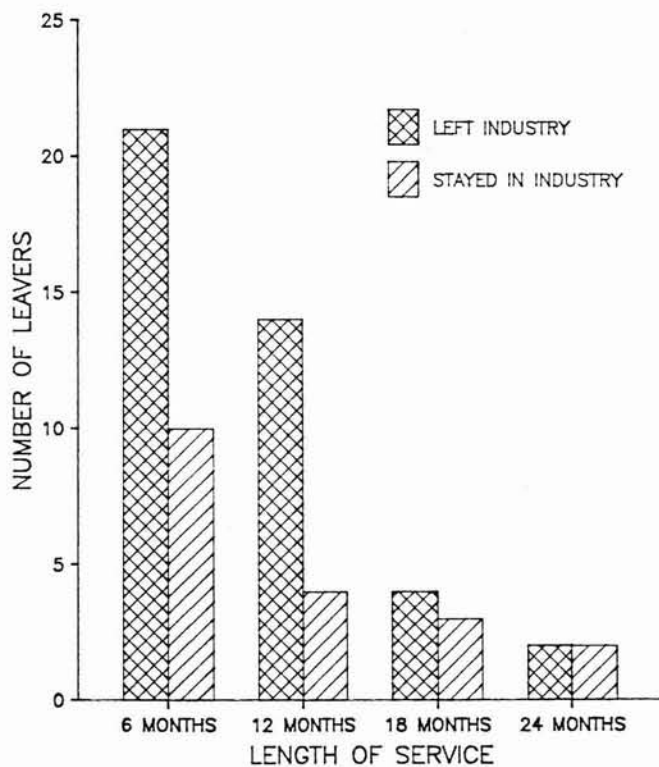


Figure 2

Figure 2 suggests that new loggers who leave within the first 12 months of service are more likely to be leaving the industry. Those loggers who complete more than 12 months service, are more likely to remain within the logging industry.

The Effects of Loggers' Certification

The effect of the Loggers' Certification Scheme on turnover is examined in two ways:

- Those who were there at survey No. 1.
- The effect of new recruits obtaining a certificate after starting in the NZFP Forests Limited system.

Table 5 compares the loss of workers with and without a certificate over the 3 year period.

Table 5 - Turnover of Loggers during the three years with and without Loggers' Certificate

	Survey No.1	Survey No.7	Percent Remaining
With Certificate	114	57	50%
Without Certificate	318	101	32%
<u>Total</u>	<u>432</u>	<u>158</u>	<u>37%</u>

A larger proportion of loggers without certificates at the start of survey No. 1 moved out of the system than those with certificates. This is further illustrated when the number of loggers who stayed in the same gang for the three years is examined. A total of 93 (21%) loggers were in this category and almost half had Loggers' Certificates at survey No. 1.

Next consider looking at new recruits who started in the system without a loggers certificate but obtained one during their period of employment.

Thirty-one loggers fitted into this category and on average they took 12 months to obtain a Loggers Certificate. Figure 3 compares the survival of leavers curves for those loggers with and without a certificate. As Figure 3 shows, no turnover occurred during the first six months of employment for loggers who obtained a certificate. Twenty four months later a larger percentage of these employees (68%) remained, compared with to those without certificates (19%).

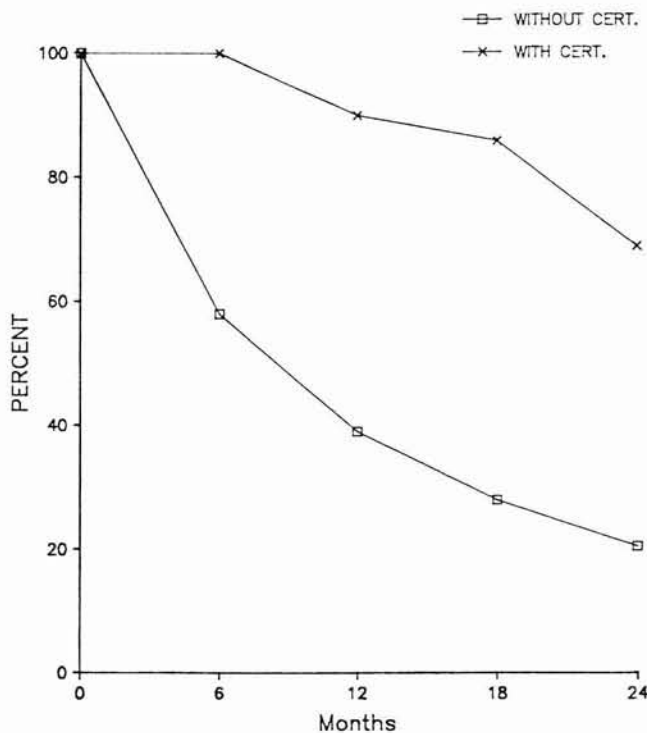


Figure 3 - Survival Rates of new recruits with and without Loggers' Certificate

DISCUSSION

For the time period of this turnover survey (November 1984 to November 1987) only two gangs recorded no turnover at all. Fourteen gangs had only one of the original members remaining at the end of the three year period. Company employees who subsequently joined contract crews have not been recorded as turnover.

This is the second report based on information collected through the NZFP Forests Limited system. Both reports

have noted surprisingly high levels of turnover in the industry. This information is important when planning workforce requirements and especially when defining industry training needs. It is apparent that the industry needs more than just information on the volume of turnover. The industry needs to look for answers, e.g. why is there so much turnover, especially when unemployment is the highest on record?

Hollenbeck and Williams (1986) suggested that turnover should be considered in terms of both frequency and performance levels of stayers and leavers. The authors described functional turnover as being the turnover of less desirable workers leaving. They note that the traditional measure of turnover frequency (as presented in this report) could overstate the detrimental effect of turnover on organisational effectiveness. Their study of sales person turnover showed that 53% of turnover was, in fact, functional. Currently such a measure cannot be made in the NZFP Forests Limited turnover survey.

Some means of predicting the likelihood of turnover is required. Whilst an attempt was made in this study, no means was found. One possibility could be to relate turnover to a measure of job satisfaction such as the Job Descriptive Index (JDI) developed by Smith, Kendall and Hulin (1969). This measure was applied during the recently conducted Logging Workforce Survey (Wilson et al, 1988), and found that loggers who were more satisfied with their job were less likely to have intentions of leaving than respondents who were less satisfied.

The measurement of logging turnover has recently been extended, using a similar format to that described in this report, to cover loggers employed by Tasman Forestry Limited in the Bay of Plenty. With this increased coverage, the industry is now constantly monitoring approximately one-third of the total workforce.

As the surveys are conducted once every six months there will be turnover which

is not recorded by this system. Therefore the annual rate of approximately 50% may be understating the scope of turnover.

CONCLUSIONS

Logging worker turnover in NZFP Forests Limited was found to average 47.7% per year. At an estimated cost of \$1,150 per leaver point it costs the company/contractor approximately \$290,000 per year. This does not include internal movement between logging gangs employed by NZFP Forests Limited. The whereabouts of half those that leave is unknown. Twenty five percent of the total turnover are known to leave the logging industry.

The loss of new recruits in the system is very high - in excess of 80% over 2.5 years. The loss over the first six months of service for new recruits was consistent at 42%.

The trend suggests strongly that those who obtain a loggers' certificate while working in the NZFP Forests Limited system are more likely to remain longer. Similarly, those who had a certificate at the first survey were more likely to still be employed three years later. The Loggers Certification Scheme, administered by the Logging and Forest Industry Training Board, works effectively in retaining people in the industry. The concept of certification deserves full industry support. The industry that will benefit in the long term by having a more stable workforce.

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