Workforce Turnover in FIFO Mining Operations in Australia:
An Exploratory Study
Summary Report

A research report by
Centre for Social Responsibility in Mining and Minerals Industry Safety and Health Centre

THE UNIVERSITY OF QUEENSLAND
Workforce turnover in FIFO mining Operations in Australia: An Exploratory Study

Summary Report
Published by: Centre for Social Responsibility in Mining,
Sustainable Minerals Institute, University of Queensland
Brisbane Qld 4072 Australia
Telephone: National (07) 3365 3776
           International (+617) 3365 3776
Fax          (07) 3365 1881

The authors of this report are:
Ruth Beach, Centre for Social Responsibility in Mining
David Brereton, Centre for Social Responsibility in Mining
David Cliff, Minerals Industry Safety and Health Centre

“Workforce Turnover in FIFO Mining Operations in Australia: An Exploratory Study. Summary Report”
© University of Queensland 2003
Contents

WORKFORCE TURNOVER IN FIFO MINING OPERATIONS IN AUSTRALIA: AN EXPLORATORY STUDY ................................................................................................................ 1

SUMMARY REPORT ...................................................................................................................... 1

CONTENTS ..................................................................................................................................... 3

INTRODUCTION ............................................................................................................................. 1

What is employee turnover?................................................................................................................................. 1

Why employee turnover is an important issue for the Minerals industry............................................... 1

About the study ............................................................................................................................................. 2

KEY FINDINGS ............................................................................................................................... 3

Variation in employee turnover rates ............................................................................................................. 3

Mine Management and employee turnover .................................................................................................. 3

Contractors and employee turnover ........................................................................................................... 6

IMPLICATIONS FOR MANAGEMENT ........................................................................................... 7

FUTURE RESEARCH ....................................................................................................................... 7

Appendix: An illustrative estimate of the financial cost of employee turnover ................................................. 9
Introduction

This summary presents key findings from a study of workforce turnover in a sample of remote mining operations in Australia. The research was conducted jointly by the Centre for Social Responsibility in Mining (CSRM) and the Minerals Industry Safety and Health Centre (MISHC), with funding provided through the University of Queensland’s Sustainable Minerals Institute (SMI).

Very little research has been undertaken into the extent, causes or consequences of employee turnover within the mining industry. Almost all research on employee turnover, and its corollary employee retention, has focused on other occupations and industries based in major population centres.

The main objectives of the study were to: (1) build up a more accurate picture of the extent of workforce turnover in remote mining operations in Australia and the direct and indirect costs associated with that turnover; (2) identify the factors which account for significant variations in turnover rates within and between sites and over time; and (3) identify workforce management practices that can be effective in minimising undesired turnover of staff.

The full research report, Workforce turnover in FIFO mining Operations in Australia: An Exploratory Study, is available from the Centre for Social Responsibility in Mining website (http://www.csrm.uq.edu.au).

What is employee turnover?

Employee turnover is any employee movement that creates a vacancy on site. The turnover rate is simply the number of vacancies that are created by departures in a given year expressed as a proportion of the number of employees at the site.

Why employee turnover is an important issue for the Minerals industry

According to the 2002 Labour Mobility survey conducted by the Australian Bureau of Statistics (ABS), the mining industry has the highest rate of workforce mobility of any sector in the Australian economy – 21.7 per cent compared to the national average of 15 per cent (refer Figure 1, below). Similarly, a survey of the West Australian minerals industry by the Mining Occupational Safety and Health Advisory Board (MOSHAB 2002) found that the average length of service at the current mine was 5.1 years, which indicates an average annual employee turnover rate of 19.6 per cent at West Australian mines.

Some employee turnover is beneficial both for workplaces and society generally. New employees bring new skills and ideas to the workplace. Departing employees create employment and training opportunities for others in the workforce or in the community. However, there is broad agreement amongst industry practitioners and researchers that continuing high employee turnover

1 This definition encompasses both voluntary and involuntary departures (for example dismissals) but excludes movements that result from positions being made redundant, and excludes exits from site among contractors.

2 The ABS definition of ‘Labour Mobility’ includes all employed persons who changed jobs or changed employers in the previous 12 months. This includes employee movements not usually counted in turnover calculations, such as casual employees starting or finishing on site.

Workforce Turnover in Australian FIFO mining operations: Summary report

Figure 1: Labour mobility by industry, Australia

![Graph showing labour mobility by industry, Australia](image)

...turnover can have substantial adverse operational and financial impacts on mining operations, including:

- high ongoing recruitment, replacement and training costs
- decreased productivity due to loss of site specific knowledge and work group synergy
- reduced capacity to develop workforce skills and to meet specific workforce management targets (such as increasing the proportion of indigenous employees)
- declining morale amongst remaining employees
- increased difficulty in establishing and maintaining a positive mine site culture, especially in relation to workplace safety.

High turnover can also have an undesirable effect on the communities that are associated with mining projects. When employees resign, they (and their families) will frequently also leave the community. Where populations are unstable, it is more difficult to build and maintain social cohesion and to sustain organisations which contribute positively to the social life of a community.

**About the study**

Our study collected data from nine metalliferous mines, six of which are located in Queensland and three in Western Australia. Seven of these sites are wholly or mostly Fly-in Fly-out (FIFO) operations. The two town-based sites were included for comparative purposes.
We decided to focus primarily on FIFO operations because there is a widespread perception in the mining industry –supported by some findings from previous studies – that turnover in this sector tends to be higher than in town-based operations. Concentrating on one sector also made it easier to make comparisons between sites.

Of the sites in the study:

- three mines were open-cut and six were underground operations
- six mines were owner operated, three used principal contractors for mining operations
- all mines made substantial use of contractors
- all mines had been in production for a minimum of three years, with most operating for five years or more
- all mines expected at least another five years of operational life.

The study drew on quantitative workforce data provided by sites and interviews with site based management personnel, particularly in the human resources area. Interviews at the Queensland mines were conducted on-site. In the case of the Western Australian sites, interviews were conducted by telephone.

Most of the information collected related to turnover among company employees, not to the mine site as a whole. With one exception, sites were unable to provide any quantitative data about turnover amongst employees of contractors.

**Key Findings**

**Variation in employee turnover rates**

*There is substantial variation in employee turnover rates between and within FIFO mine sites.*

Annual turnover of company employees at the seven FIFO sites, as at June 2002, ranged from 10 to 28 per cent, with the average being 21 per cent (see Figure 3). This average is comparable to estimates from other studies. The two town based sites had annual turnover rates of 8 per cent and 27 percent respectively.

Within sites, turnover rates tended to be highest amongst professional and managerial staff, and in the mining operations area.

*There is no evidence of a ‘natural’ level of employee turnover over time.*

Time series data for three years or more were available for five FIFO mines (Figure 2). We found no evidence of turnover rates stabilising at a ‘natural level’ once a mine had been in operation for a few years. Rather, employee turnover rates varied markedly over time and this appeared to be due mainly to site-specific factors, such as changes in working arrangements and management interventions.

**Mine Management and employee turnover**

*There is broad consensus amongst managers that a turnover rate above 20 per cent is detrimental to site productivity*

None of the participating sites tracked the cost of employee turnover and no interviewees could estimate the full cost of employee turnover with any confidence. However, there was a broad awareness that these costs could be substantial.
* Indicates mines with principal contractors. Turnover rates for these mines exclude personnel employed in mining operations.
Turnover has been as high as 33 per cent. Over 20 per cent you never get a return on your (recruitment) investment. Inductions and safety training are the most expensive – there’s a whole week’s salary gone in that alone. Also you get increased contractor costs. You double your training costs ‘cause you’ve got to do the basic training for the contractor filling in and the permanent replacement when they turn up. (HR Superintendent, town-based mine)

Using estimating techniques developed for other industries, we calculated the cost of ‘average’ employee turnover at a FIFO mine with 300 employees as being in the order of $2.8 million (see text box, page 9 for more detail). This estimate is based on conservative assumptions about salaries and replacement costs. It does not include impacts that are difficult to quantify, such as diminished employee morale and loss of local knowledge.

Managers are often not focussed on controlling employee turnover

Mine managers interviewed for the study tended to see other issues as being of greater importance than employee turnover. At some sites relatively high rates of employee turnover were considered normal and largely outside management control. Several of the interviewees conceded that it was inherently difficult for FIFO operations to retain personnel. For example:

They hit the wall and move on. It’s the nature of FIFO that people get sick of it. It’s influenced by many things, the age of the kids, the years in FIFO, where they live (domestic location), family connections there and movements of them and friends. (Mine manager)

Human resource data relevant to employee turnover were not widely used to determine trends or to evaluate the success of management strategies. Exit interviews were conducted at most sites, but little use was made of the data derived from these interviews beyond the employee’s departure. One possible reason why employee turnover was not given greater importance was because management was not aware of the full cost of turnover at their mines.

Many of the factors that affect turnover rates are potentially within management’s ‘sphere of control’

Many different factors impact on employee turnover, and the wider literature suggests that most of these are within employers’ sphere of influence, if not in their control. The diagram in Figure 4 illustrates these factors.

We found that turnover rates between mines operating within the same general labour market varied considerably. This suggested that the main drivers of turnover were often internal, rather than external, to the mine site. Key factors that contributed to employee turnover, and its corollary, employee retention were:

- the roster structure – it was easier to retain employees on shorter roster patterns, or where the roster approximated even time
- the level of management commitment to employee training and skills development, and ‘good management’ generally
- the extent to which management had been successful in creating and maintaining a positive workplace culture
whether there was parity of wages with labour market competitors (although maintaining equitable remuneration was not, by itself sufficient to ensure workforce stability)

• the extent to which management perceived the present rate of employee turnover as inevitable.

Contractors and employee turnover

**Employee turnover within contractors is generally not a priority for mine management**

The site managers in our study did not routinely monitor employee turnover amongst contractors working onsite and, for the most part, adopted a “hands-off” approach to human resource issues within their contracted workforce (including principal contractors).

In general, interviewees thought that employee turnover was higher among contractors than among mining company personnel. This is also a widely held view within the mining industry, and has some support from the MOSHAB (2002) study. An analysis of the MOSHAB data showed that, for all major occupational groups, mine company employees had a longer average length of service at their current mine than did employees of principal contractors.
Implications for management

Controlling turnover in FIFO operations is not easy, given the location of FIFO operations, the recurring travel demands on employees and the impact of extended absences from home. However, as illustrated by some of the sites in this study, high turnover is not an inevitable corollary of FIFO. Specific initiatives that can assist sites to better manage workforce turnover include:

- establishing monitoring systems to track turnover trends and patterns within occupational groups on site
- improving exit interview procedures and making better use of these data
- routinely evaluating management initiatives (such as the introduction of new recruitment practices) for their impact on employee turnover
- undertaking periodic ‘organisational climate’ surveys to monitor the workplace culture and employee perceptions of management
- reviewing existing roster arrangements to ascertain whether there is scope to introduce shorter, more balanced, rosters
- monitoring turnover rates amongst major contractors and, where necessary, taking steps to encourage contractors to address workforce stability issues
- learning from the experiences of those FIFO sites which have succeeded in keeping turnover low over extended periods
- supporting research to establish a reliable and comprehensive costing of employee turnover specifically for the mining industry.

Practical tools to address some of these issues are included in the appendices of the full report. These include, a standard for exit interview data collection, and seven questions to assess employee turnover on site.

Future Research

The project has identified a number of areas where current levels of knowledge about employee turnover in the mining industry are inadequate. Questions requiring further research include:

- **How much does employee turnover cost?** A standard method for valuing the direct and indirect costs associated with turnover is needed in the industry.
- **How does turnover within contractors affect mine operations?**
- **How can retention of mine professionals and management be improved?** Not enough is known about why mine professionals leave site, or leave the industry.
- **How does workplace culture on site impact on workforce stability?**
- **How do remuneration levels affect employee turnover amongst operations employees?** This is an often discussed, but under researched, area of recruitment and industrial relations.
- **Are mine employees leaving the site, quitting FIFO or leaving the industry?** Understanding the reasons employees leave, and where they go to, is necessary for planning retention strategies.
• How applicable are these findings to other mines? By necessity this was an exploratory study, involving only nine mines. A follow-up study, collecting data from a larger number of mining operations would confirm how well the findings of this study apply to the broader FIFO sector of the industry.
Appendix: An illustrative estimate of the financial cost of employee turnover

An illustrative estimate of the financial cost of employee turnover

We estimated the cost of average employee turnover at a hypothetical mine with 300 employees. We assumed:

- the mine is owner operated, open-cut and a 14/7 FIFO roster
- the pattern of employee turnover across mine sections is consistent with the MOSHAB published averages for operators, supervisors and managers
- there is lower employee turnover within the minerals processing and maintenance areas than in the mining area
- conservative annualised salary figures.

Estimated employee turnover costs for an average mine of 300 employees

<table>
<thead>
<tr>
<th>Mine area (no. employees)</th>
<th>Annual salary</th>
<th>Turnover rate</th>
<th>no. exits</th>
<th>cost per exit</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operations (140)</td>
<td>70,000</td>
<td>19.6%</td>
<td>27.5</td>
<td>$21,000</td>
<td>$577,500</td>
</tr>
<tr>
<td>Processing and other personnel (90)</td>
<td>75,000</td>
<td>15%</td>
<td>13.5</td>
<td>$37,500</td>
<td>$506,250</td>
</tr>
<tr>
<td>Supervisors (10)</td>
<td>80,000</td>
<td>15%</td>
<td>1.5</td>
<td>$80,000</td>
<td>$120,000</td>
</tr>
<tr>
<td>Management &amp; Mine Professionals (60)</td>
<td>90,000</td>
<td>19.6%</td>
<td>12</td>
<td>$135,000</td>
<td>$1,620,000</td>
</tr>
<tr>
<td>Total turnover budget (300 employees)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$2,823,750</td>
</tr>
</tbody>
</table>

Cost estimates for senior positions are based on the available literature (Abbott, De Cieri & Iverson 1996, Cascio 1982). Cost estimates for mine operators are based on discussions and feedback from participating company and site personnel.

References
