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SKILL SHORTAGES IN THE TRADES: THE 2005 PICTURE

Introduction

- 1 This paper provides an overview of findings from the skill shortage assessments of 14 trade occupations from the Job Vacancy Monitoring Programme (JVMP). As well as reporting on the types of shortage found, the reports provide an analysis of the demand and supply forces contributing to the shortages, and a short-term outlook. The reports draw on data from the 2005 Survey of Employers who have Recently Advertised (SERA), together with other sources pertaining to demand and supply forces affecting these occupations.

- 2 The 14 trade occupations which have been analysed are:
 - Auto Electrician
 - Boat Builder
 - Bricklayer
 - Cabinetmaker
 - Carpenter
 - Chef
 - Diesel Mechanic
 - Electrician
 - Fitter and Turner
 - Heating, Ventilation, Air Conditioning and Refrigeration Mechanic
 - Line Mechanic
 - Plumber
 - Printing Machinist
 - Sheet Metal Worker.

- 3 These trade occupations were selected on the basis that there was some evidence that they were in severe shortage. The selection process considered the need to continue monitoring developments in previously-studied occupations, as well as consider the needs of Immigration New Zealand, sector engagements, and submissions received from external parties. The chosen occupations represent a range of industries including the construction, metal, motor, and food and beverage sectors.

Background

- 4 In response to emerging skill shortages throughout New Zealand, the Government launched the Skills Action Plan in May 2002. Implementation of the plan resulted in the development of a number of initiatives to improve information on skill shortages. One of the initiatives was the establishment of the JVMP within the Department of Labour (the Department).
- 5 The objective of the JVMP is to provide new insights into skills shortages in the New Zealand economy. JVMP outputs include a monthly monitor of job vacancies advertised in 25 major newspapers and two internet job boards, an annual SERA, and in-depth reports on selected skilled occupations.
- 6 The occupational skill shortage assessment reports are produced annually. Reports on 16 trades were published in March 2005, while a series of 10 professional reports were published in November 2005.
- 7 This series of trade reports incorporates updates of 12 reports undertaken in 2005. It also includes four reports on trade occupations that have not previously been analysed by the Department (for example, Chefs; Line Mechanics; Printing Machinists; and Heating, Ventilation, Air Conditioning and Refrigeration Mechanics).

Wider labour market context

- 8 It is necessary to view the findings from these trade reports in the wider economic and labour market context. The assessments report on the situation in 2005 as the SERA was conducted in mid-2005 (May to August). Much of the supply data such as qualification achievements and migration also pertain to the 2005 calendar year.
- 9 The 2005 year was characterised by an extremely tight labour market. The unemployment rate reached its lowest level (3.6%) since 1986 in the June 2005 quarter and this rate was matched again in the December 2005 quarter. One of the skill shortage indicators from the Quarterly Survey Business Opinion (QSBO) showed that early in 2005 employers were facing the tightest labour market since 1970.

Major findings

- 10 This section provides an overview of key findings from the 14 trade reports. A summary of key indicators by occupation is presented in Table 1.

Shortages exist in every trade occupation surveyed, with most shortages being acute...

- 11 Just over a third (37%) of the 1,480 vacancies included in the survey sample were filled within six to eight weeks of advertising. 'Line Mechanic' had the lowest fill rate (10%), while 'Printing Machinist' had the highest (61%).
- 12 Of the 14 trades surveyed, nine had fill rates less than 40% and are therefore considered to be in acute shortage. Six of the trades surveyed had fill rates less than 30%. This indicates the depth of shortage within the trades surveyed.

All 14 occupations surveyed are assessed to be in genuine skill shortage...

- 13 All 14 trades surveyed were assessed as experiencing 'genuine skill shortages'. Genuine skill shortages occur when employers have difficulties filling their job vacancies because there are not enough individuals with the required skills in the potential labour market to fill the positions on offer.
- 14 Earlier research by the Department¹ identified a number of historical reasons for trade occupations being in genuine shortage in 2004. While the legacy of these factors is still being felt in today's labour market, considerable progress has been made to rectify many of the problems. These issues are discussed later in the report. The historical reasons for shortages in the trades include:

The number of young people entering the trades dropped sharply in the 1990s

- The sharp drop in the number of young people entering the trades is clearly illustrated by the changing age profile of trade workers measured in the 1991, 1996 and 2001 population censuses. For instance, the number of fitters and turners between the age of 20 and 24 declined from nearly 1,150 in 1991 to slightly more than 200 in 2001.
- Employers interviewed in the SERA indicated that changes to the apprenticeship system in the 1990s impacted negatively on training. Other factors mentioned by employers included the downscaling of many government department-based apprentice training initiatives, economic recession, and the rising proportion of young people embarking on tertiary academic study in New Zealand.

Training rates at National Certificate Level 4 have been low for much of the 2000s

- In the early years of the current decade the level of training (expressed as the training rate) was considerably lower than the growth in demand for trade occupations. The trade training rate measures the number of people achieving the benchmark National Certificate Level 4 qualification as a percentage of the number of people employed in trades. It is a measure of the annual growth in the supply of trades through training, and is conceptually comparable with the growth in demand (as measured by growth in employment). For instance, in 2003 the trade training rate for the 14 trade occupations analysed in the current trade reports was 2.3%. While that level of training was adequate to compensate for retirements (which occur at the rate of about 1.3% per annum), it was insufficient to cope with new demand (job creation) which occurred at the rate of about 3.0% per annum. The 2003 trade training rate was lower than the New South Wales², Australia trade training rate (2.8%), where widespread shortages in the trades are also reported.

Migratory outflows

- In the five years to 2001, the New Zealand economy experienced a net loss of more than 4,600 tradespersons. This significant loss occurred prior to and in the early years of a rapid economic expansion. The situation has improved since 2001, which is discussed later in the report.

¹ Department of Labour, 2004, '16 Trade Occupation Shortage Assessment Reports: an Overview'. <http://www.dol.govt.nz/PDFs/trade-report-overview.pdf>.

² The New South Wales rate is the average training rate for the three years to June 2003.

Table 1: Key Indicators by Occupation, 2005

Occupation	Skill Shortage Classification ¹	2005 Employment (000s)	Fill Rate ²		Training Rate ³		NSW Training Rate ⁴	Retirement Rate 2005 ⁵	Wage Rate June 2005 (per hour)	Growth in Wages June 04 to 05
			2003	2005	2003	2005				
Automotive Electrician	Genuine Skill Shortage	1.5	38%	29%	2.2%	3.5%	4.3%	0.7%	-	-
Boat Builder	Genuine Skill Shortage	1.9	47%	39%	3.1%	6.8%	2.6%	0.8%	\$21.55	9.2%
Bricklayer	Genuine Skill Shortage	3.3	32%	42%	0.8%	1.0%	1.3%	0.8%	\$19.91	1.1%
Cabinetmaker	Genuine Skill Shortage and Recruitment & Retention Difficulty	4.6	55%	40%	0.9%	1.3%	1.8%	1.4%	\$16.40	8.0%
Carpenter	Genuine Skill Shortage	18.1	45%	34%	3.0%	4.7%	4.3%	1.5%	\$18.81	5.2%
Chef	Genuine Skill Shortage and Recruitment & Retention Difficulty	10.9	69%	51%	3.8%	4.2%	1.9%	0.3%	\$14.62	2.1%
Diesel Mechanic	Genuine Skill Shortage	10.4	48%	21%	1.1%	1.8%	-	1.5%	\$22.65	3.5%
Electrician	Genuine Skill Shortage	14.9	55%	30%	2.7%	2.6%	3.5%	1.1%	\$22.74	5.1%
Fitter and Turner	Genuine Skill Shortage	5.8	43%	27%	2.4%	3.0%	-	1.5%	\$22.30	4.1%
HVACR Mechanic	Genuine Skill Shortage	0.8	37%	48%	4.5%	7.4%	4.0%	0.7%	\$23.42	6.2%
Line Mechanic	Genuine Skill Shortage	2.2	-	10%	2.9%	7.8%	-	0.5%	\$20.34	6.7%
Plumber	Genuine Skill Shortage	6.9	37%	29%	1.4%	2.9%	2.8%	1.6%	\$19.63	9.4%
Printing Machinist	Genuine Skill Shortage	6.3	66%	61%	1.3%	1.7%	-	1.2%	\$19.46	4.0%
Sheet Metal Worker	Genuine Skill Shortage	3.6	48%	23%	1.0%	2.9%	-	1.2%	\$18.16	7.8%
Total	-	-	48%	37%	2.2%	3.3%	2.6%	1.3%	\$19.93	4.8%

Notes:

- 1 Skill shortage definitions are provided in the text of the report.
- 2 Proportion of vacancies included in the SERA sample which were filled with an adequately qualified and experienced person within six to eight weeks of advertising. Occupations with fill rates lower than 80% are typically regarded as being in shortage. Occupations with fill rates lower than 40% are typically regarded as being in acute shortage.
- 3 Number of persons achieving a relevant qualification expressed as a percentage of employment in that occupation. The training rates for 'all trades' were calculated for the 14 trade occupations that were examined in-depth using data from the SERA Intensive 2005. As the composition of occupations being examined changes from year-to-year, so will the training rates.
- 4 Australian national level estimates of training rates are not available. The rate presented is an average for the three years to June 2005.
- 5 The proportion of employed persons in an occupation expected to retire each year. It assumes a retirement age of 65.

Construction boom

- The booming construction industry (the value of work put in place has grown by 42% in the four years to December 2005) has resulted in rapid growth in demand for construction trades workers. The impact has been felt far beyond the construction industry. For example, higher wages offered in construction has attracted trades workers with transferable skills (e.g. boat builders and cabinetmakers) from other industries.

Lack of attractiveness of some occupations

- Surveyed employers mentioned that trade occupations were out of vogue, discouraging young people from entering them. Pay rates and working conditions in some trades also discouraged people from choosing the occupation or caused them to leave.

Two occupations are also experiencing recruitment and retention difficulties...

- 15 In addition to experiencing genuine skill shortages, two occupations - Chef and Cabinetmaker - were also classified as experiencing 'recruitment and retention difficulties'. This occurs when there is a considerable supply of individuals with the required skills in the potential labour market but they are unwilling to take up or remain in employment at current levels of remuneration and conditions of employment.
- 16 Low relative wages were identified as contributors to recruitment and retention difficulties in both occupations. The average wage rates of chefs (\$14.62 per hour) and cabinetmakers (\$16.40) were 26% and 17% lower than the average wage rate for all trade occupations (\$19.81), respectively. Working conditions also contributed to recruitment and retention difficulties. Employers of chefs spoke of long, unsociable hours and the stressful kitchen environment, while employers of cabinetmakers mentioned dirty working conditions as an issue.
- 17 Although cabinetmakers earn less, on average, than other trades they have recently experienced high wage growth, so the wage gap between cabinetmakers and other trades is diminishing. Wage growth is discussed in more detail later in this report.

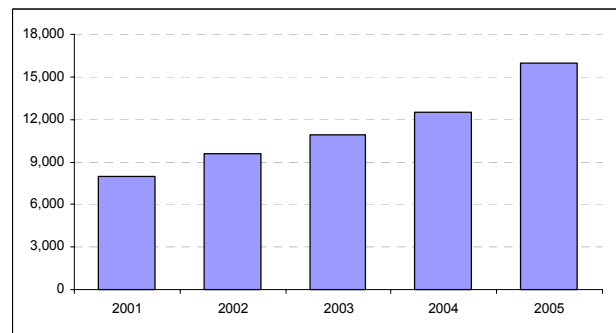
Shortages have intensified between 2003 and 2005...

- 18 The overall fill rate for all trades surveyed in 2005 (37%) was lower than that measured in 2003 (48%) signifying a deepening of shortages over this period. While the fill rates for a few trade occupations improved between 2003 and 2005 (for example, the fill rate for Bricklayer rose from 32% to 42%) most fill rates dropped over this period. For some occupations, this drop was substantial (for example, the fill rate for Diesel Mechanic fell from 48% to 21%).

Total enrolments have increased sharply...

- 19 The total number of trainees enrolled for qualifications related to the trade occupations under review doubled from slightly less than 8,000 in 2001 to almost 16,000 in 2005 (see Figure 1)³. The carpenter occupation was the largest contributor to this growth, with enrolments increasing more than three-fold, from about 2,360 to 7,900. All occupations showed an increase over the five year period, and all except one (fitter and turner) experienced growth in excess of 10%.

Figure 1: Total enrolments, 2001-2005



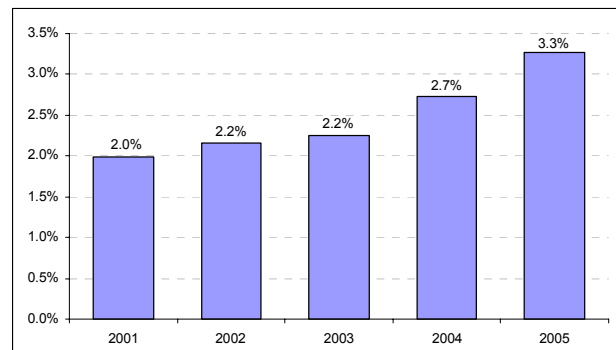
Source: Department of Labour estimates based on data from industry training organisations and Tertiary Education Commission.

- 20 This finding suggests that the number of trainees achieving qualifications in the selected trades should increase significantly in the future.

Training rates have increased significantly...

- 21 While low training rates have been identified as one of the historical contributors to trade shortages, the rate has been rising each year since the beginning of this decade. The trade training rate has risen from 2.0% in 2001 to 3.3% in 2005 (see Figure 2). The most impressive increase was for line mechanic – increasing from 0.5% to 9.6% over the five year period. Boat builders also showed an impressive increase from 2.0% to 6.8%. All occupations except printing machinist experienced a training rate increase.

Figure 2: Trade training rate, 2001-2005



Source: Department of Labour estimates based on data from industry training organisations and Tertiary Education Commission.

- 22 The trade training rate of 3.3% in New Zealand in 2005 somewhat exceeds the training rate in New South Wales, Australia (2.6%).
- 23 The strong growth in *participation* in industry training so far this decade has been well documented, but this finding that the trade training rate has risen sharply shows that increased participation is translating into greater numbers of qualification *achievement* at a high level.
- 24 If the training rate of 3.3% measured in 2005 were to be sustained in 2006 it will probably be adequate to cope with retirements (1.3% per annum), new demand

³ These totals exclude enrolments through the relevant industry training organisation for the line mechanic and plumbing qualifications.

from employment creation (which is likely to slow given the slowing of economic growth), as well as make some impact on existing shortages. However, it is less clear that this level of training would be adequate in the long term as long term employment creation in the trades will exceed that expected in 2006. The Department's analysis suggests that a training rate of at least 4.0% is necessary in the long term.

- 25 The upward trajectory in the training rate therefore needs to be maintained for coming years. This may be possible given the increase in enrolments over the last few years and higher budgeted expenditure for both Industry Training and Modern Apprenticeships. Funding for training through the Industry Training Fund will rise from \$118.3 million (all figures GST exclusive) in 2005/06 to \$141.7 million in 2006/07 (further increases are baselined and by 2009/10 funding will have reached \$156.4 million). Funding for Modern Apprenticeships is also increasing, with \$30.7 million in 2005/06 rising to \$37.9 million in 2006/07 and \$48.7 million in 2009/10 and outyears.

Immigration has made a positive contribution to the supply of trades workers over the past three years...

- 26 While net outward migration of trades workers in the late 1990s and early 2000s has been identified as one of the causes of the current shortage of trades workers, the flows have improved in recent years. A positive net inflow of trades workers was recorded in each year from 2003 to 2005. However, the recent net inflows have been insufficient to compensate for the large net outflows between 1998 and 2001.
- 27 Adjustments to immigration policy settings have contributed to the improved flow of trades workers into New Zealand. The addition of many trade occupations to the Long Term Skill Shortage List, and increased emphasis on employability in the selection of applicants for residency through the Skilled Migrant Programme, have made it easier for trades workers to obtain permanent residence in New Zealand. This is reflected in the growing proportion of trades workers who are approved for residence under the General Skills Category and its successor the Skilled Migrant Category. In 2002/03, 7% of principal applicants approved for residence in New Zealand through the General Skills Category were trades workers, while in 2004/05, 15% of principal applicants approved through the Skilled Migrant Category were trades workers.

Most of the 14 trades have experienced high real growth in wages...

- 28 The surveyed trades⁴ experienced an average growth in wages of 5.6% between June 2004 and June 2005⁵. This considerably exceeds the increase in the cost of living of 2.8%⁶ over the same period, and the growth in wages across all occupations (4.4%). Some trades showed exceptionally high wage growth; these include Plumber (9.4%), Boat Builder (9.2%), Cabinetmaker (8.0%) and Sheet-Metal Worker (7.8%).

⁴ No wage data is available for automotive electrician.

⁵ As measured by the unadjusted Labour Cost Index (LCI). The unadjusted index takes into account changes in pay related to the performance of individual employees.

⁶ As measured by growth in the Consumer Price Index.

- 29 The rapid growth in wages in these occupations indicates that employers are responding to skill shortages by raising wages. Only two of the trades, Bricklayer⁷ and Chef, did not experience growth in wages in excess of the cost of living. That chefs experienced growth in wages below the growth in the cost of living is of concern as they are one of the occupations which were identified as displaying recruitment and retention difficulties. A decline in real wages suggests that this problem is worsening.

While shortages are expected to persist in the short term, the outlook is improving...

- 30 Changes in both demand and supply conditions have markedly improved the outlook for shortages of trades workers.
- 31 The demand for trades workers is expected to slow due to the overall slowing of the economy. According to March 2006 consensus forecasts compiled by the New Zealand Institute of Economic Research, growth in gross domestic product is expected to slow to 1.4% in the year to March 2007 compared with 2.3% in the previous twelve months. Employment growth is expected to slow from 1.9% to 0.5% over the same time period. The slowdown in demand for trades workers is expected to be even more pronounced as the construction sector is likely to show no growth in 2006. The construction sector has considerable impact on the labour market for trades workers as half of all tradespersons are employed in the building trades and the sector has the ability to draw tradespersons from other sectors due to higher relative wages.
- 32 While demand growth is easing, supply conditions will continue to improve. It has already been noted that training levels have grown strongly over the past few years and this trend will probably be maintained given the rise in enrolments for the Level 4 qualifications and the projected rise in expenditure on industry training. The Department expects net migration to increase slightly in 2006 due to a forecast rise in arrivals, supported by high levels of residency and work permit approvals. This should result in another year with a net positive inflow of trades workers.
- 33 For most trade occupations surveyed, the increase in supply will not be sufficient to eliminate current shortfalls. So while shortages are expected to ease, they will remain severe in the short-term. As training levels increase, the long-term outlook for trade occupations will improve.

Conclusion

- 34 The skill shortage assessments of 14 trade occupations have shown that shortages were severe in these occupations in 2005. These shortages have deepened since 2003. Each of the trades was assessed as being in genuine skill shortage as growth in demand has exceeded the growth in supply. In two of the trades, genuine skill shortages were exacerbated by recruitment and retention difficulties.
- 35 This report has reiterated some of the historical causes of shortages in the trades. While the legacy of these factors is still being felt in today's labour market, there have been significant improvements in most problem areas. Qualification

⁷ The LCI measures wages of employees, and as a considerable proportion of bricklayers are self employed, a decline in the bricklayer wage rate does not imply a decline in earnings across the whole occupation.

achievements and enrolments have been lifted significantly, migration is making a net positive contribution to supply, and wages have risen sharply. These developments are contributing to growth in supply of tradespersons, which coupled with the expected slowing of growth in demand, means the outlook for shortages is much improved.

For queries regarding this report please contact andrew.whiteford@dol.govt.nz or info@dol.govt.nz.

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