



**ENGINEERING & AUTOMOTIVE
TRAINING COUNCIL INC.**

The Engineering and Automotive Trades in Western Australia

A SKILLS BASE AT RISK

Final Report | August 2014



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EXECUTIVE SUMMARY

This report is intended to provide solid research and analysis on current and future skills requirements in the engineering and automotive trades in Western Australia. It consolidates the findings from an extensive literature review, data analysis and market research and presents recommendations for consideration by the EATC Board.

Developments in the resources sector, particularly through the construction phase of various projects, have had a significant impact on demand for the engineering and automotive trades skills. Capital expenditure in the mining and construction sector has peaked and this has led to a changing labour market and an easing of some of the earlier shortages in certain occupations, including those in the engineering and automotive trades. In the past 12 months there have been less vacancies and more candidates for each vacancy.

Skilled migration

When employers make greater use of skilled migration and flexible visa arrangements, as a general rule, they also increase their apprentice intake. However, it is the level of apprentice intake when the business cycle is low that ultimately influences future availability of skilled labour. Low apprentice numbers in any given year can produce a skills gap years into the future. Employers fill the gap with offshore recruitment and the cycle continues.

The research undertaken for this project supports the notion that the engineering and automotive trades in Western Australia are likely to continue as importers of trade skills. There are, however, some worrying trends.

While the number of apprentices is dropping – reflecting the softening labour market – overseas born workers have increased as a proportion of the working population in both the engineering and automotive trades. In some of the occupational categories the increase in overseas born workers has been instrumental in maintaining employment levels. Western Australian employers also continue to make significant use of the 457 visa. The state's share of the national number of primary visas granted was 16.7 per cent in the quarter ending 31 March 2014. This would seem to indicate a growing dependence on overseas labour to the possible detriment of the development of the local skills base.

Engineering trades

In the engineering trades the proportion of Australian born workers fell from 66 per cent in 2006 to 63 per cent in 2011. The relatively high levels of overseas born workers suggest a growing dependence on imported skills and this situation needs monitoring.

The research found 76 per cent of employers of engineering tradespersons have or are employing overseas workers. At the same time employers also noted a preference for employing local workers and commented on the higher costs associated with importing labour. The fact that such a substantial number have turned to overseas workers to meet their trades skills requirements rings alarm bells.

Automotive trades

Without growth in overseas workers, numbers in the automotive trades would most likely have suffered a real reduction. The overseas born workforce increased considerably compared to those who were Australian born. The share of overseas born workers who arrived in the past 5 years grew from 12 per cent in 2006 to 31 per cent in 2011. The number of 457 visa holders in automotive trades continued increasing right through until late in 2013.

Skills shortages

As workers move from resource sector projects to other trade related employment, many skills requirements change.

Engineering trades

The recent challenges related to finding suitably qualified and skilled engineering trades workers are likely to continue into the foreseeable future. Even though the data shows an overall easing in areas of skill shortage and greater availability of tradespersons for vacant positions, there is a skills deficiency with gaps in specialised skills, such as welding and pipe fitting, and a lack of quality in the general engineering skills base.

While there is employer demand for higher level engineering skills, the research indicates insufficient levels of training delivery to meet such demand. Of all the reported training, only four per cent is in areas identified as critical by engineering employers.

Automotive trades

Skills shortages in the automotive trades largely abated in the past year with most occupations moving from shortage to no shortage, and most employers being able to fill their advertised vacancies. There is still, however, a critical skills shortage for diesel mechanics with the demand and shortage expected to increase over the next 12 months.

While there are many more applicants for jobs, it appears that qualified and experienced tradespersons with the specific skills required by employers are still in short supply. Employers are reporting that while there are qualified tradespersons, their skills are low calibre.

Apprenticeships

The research identified a number of issues with the current apprenticeship model:

- The number of apprentices being trained is too low and at a level that will not sustain the future, locally trained skills base;
- The apprenticeship model is not coping with the highs and lows of the business cycle;
- There is a need for a direct entry apprenticeship to a higher level skills pathway;
- Greater emphasis should be placed on continuous improvement of skills both during the apprenticeship and once trade status is achieved;
- Some of the apprentice delivery models are too narrowly focused, and are not developing a broad enough range of technical skill sets;
- There is limited opportunity to develop specialised skills within the apprenticeship program – higher level certified welding skills and electrical skills for mechanics were cited as examples;
- Training providers are perceived as lacking the capacity and flexibility to respond to rapidly changing industry technologies – a particular issue for the automotive trades;
- There is a need to build the notion of a trade as a career;
- Apprentices need to be suited to, and have an aptitude for, the trade they have chosen; and
- A divergence in training requirements suggests the current 'one size fits all' apprentice system may no longer be appropriate.

The apprenticeship model relies on the continuous supply of employment-based training places. A drop in supply reduces opportunities for people to develop trade skills and creates a gap in the future skills base. Future local supply of trade skills depends on the level of apprenticeship investment now.

This training model depends on the capacity of an employer to offer an extended training opportunity combined with full time employment. Although apprentice numbers typically increase during upturns, the locally developed trade skills produced are not available for a further four years – often when the business cycle is on a downturn.

The apprenticeship model requires time. When a skills shortage occurs, businesses cannot wait four years for an apprentice to be trained, so employers revert to immediate solutions like recruiting overseas skilled labour.

Generally, employers in both sectors value, and are committed to, training apprentices. Approximately two-thirds of employers surveyed for this project employed apprentices. However, their capacity to employ and train apprentices is very much driven by costs and the business cycle. A number of employers indicated they were reviewing the size of their apprentice workforce due to rising costs and/or not having enough work.

The cyclical nature of industry affects apprentice numbers and leads to the threat of a lack of skilled workers when the next upswing occurs.

Engineering trades

The current situation for engineering apprentices in WA appears to be more challenging than during previous business downturns. Commencements are lower than during the global financial crisis in 2009 and there is a non-completion rate of more than 30 per cent. Although most employers surveyed during the project supported apprenticeships and continue to employ apprentices, the number of apprentices employed is falling and employers report that the pressures on their businesses are leading them to re-think their investment in apprenticeships.

This poses a serious threat to the local supply of labour for these trades and for the state's engineering skills base in the future. Given that there is no other option available for the development of trade skills, something needs to be done to address the issues with the apprenticeship model. An examination of the apprenticeship situation in the engineering trades is a good starting point.

Automotive trades

Apprentice commencements and numbers in training in the automotive trades are starting to decline, in line with the broader labour market trends.

Nationally, apprenticeship completions across all automotive trades are significantly lower than those of the engineering trades, and are estimated at 58.4 per cent. If this trend holds true for the automotive trades in Western Australia, it would mean that more than 40 per cent of commencing apprentices do not finish. Further, while the decline in commencements is not as intense as that in the engineering trades, the fact that non-completions are so much higher for automotive apprentices could compound skills shortages in select trades.

Ongoing employer engagement with the apprenticeship system is mixed. Overall, the trend is quite stable for employers of heavy automotive tradespersons. However, in the light automotive and vehicle body apprenticeships, where there is a much greater loading towards smaller employers, there appears to be a significant drop in the numbers of employers with apprentices.

1. INTRODUCTION

Prompted by ongoing feedback from employers about continuing issues with finding suitably skilled workers, the Engineering and Automotive Training Council (EATC) has undertaken an investigation into labour market trends in the following trade occupations:

- engineering fabrication and mechanical;
- automotive heavy plant;
- heavy vehicle and light vehicle; and
- vehicle body repair.

This report is intended to provide solid research and analysis on current and future skills requirements in the engineering and automotive trades in Western Australia. It consolidates the findings from an extensive literature review, data analysis and market research and presents recommendations for consideration by the EATC Board.



1.1 Approach taken

The findings and recommendations in this report are based on:

- A) A literature review focused on research, reports and papers related to:
 - training and skills development (including apprenticeships, skills shortages and skilled migration);
 - the resources sector;
 - economic projections; and
 - the labour market.

- B) Analysis of a series of data sets, including:
 - Australian Bureau of Statistics (ABS) data from the 2006 and 2011 census years, specific to identified engineering and automotive trade occupations;
 - Publicly available data related to 457 visas from the Department of Immigration and Border Protection;
 - Apprenticeship data provided by the Department of Training and Workforce Development; and
 - Training delivery at Certificate IV from the engineering and automotive training packages.

- C) Qualitative and quantitative information from employers via survey and focus groups taking the following approach:
 - Survey questions were developed to address identified gaps in specific information about local employers' requirements for skilled workers.
 - Employers in the engineering and automotive sectors were invited to participate via an online survey, or through telephone or face-to-face interviews.

Direct quotes, typifying employer feedback, have been taken from the comments provided by survey and focus group participants and used throughout the report where they are pertinent to a particular discussion.

1.2 Initial findings

The literature review completed in the initial phase of the project led to a range of conclusions, which informed the later research and analysis. The major conclusions drawn from the literature included:

- a) Developments in the resources sector, particularly through the construction phase of various projects, have had a significant impact on demand for the engineering and automotive trades skills.
- b) While some resource projects are still in planning and may require further construction, most activity in the sector has shifted to production and the demand for engineering trade skills is diminishing in this part of the economy.
- c) Economic growth and the associated demand for skilled labour in Western Australia (and nationally) have been fuelled by the growth in the resources sector in recent times. While economic growth is cooling, the outlook for Western Australia for the foreseeable future is still strong.
- d) The labour market is changing and some of the earlier shortages in certain occupations, including those in the engineering and automotive trades, no longer exist.
- e) As workers move from working on resources sector related projects to other trade related employment, many specific skills requirements are different.
- f) Some skills are still in shortage and there is a particular need for higher level skills development for the engineering trades in Western Australia.

A summary of the most relevant literature scanned is shown at Appendix A.

Taking into account these conclusions, the later phase of the project has focused on researching and analysing the following issues:

- Employer requirements for higher levels of specialisation.
- Levels of reliance on imported labour to address demand for specific engineering and automotive trade skills.
- The skills base and levels for locally and overseas trained tradespersons.
- Levels of training occurring in higher level trade skills.
- Employer engagement with, and understanding of, the apprenticeship and vocational education and training (VET) system.
- Employers' perspectives on the effectiveness of the VET system and how best to address identified skill gaps.
- The most significant issues employers are facing with respect to their labour force in the nominated trades.
- Employer perspectives on long term trends for their own business and for their industry sector as it impacts on the labour force and skill requirements.

To address these issues, an on-line survey was administered, along with a series of face-to-face or telephone interviews using a structured interview guide, and three industry focus groups were conducted. The survey and focus group questionnaire and results are shown at Appendix B.

1.3 Data: context and analysis

Finding data that is sufficiently detailed and specific to enable meaningful analysis for the purposes of this project has been challenging. It has become apparent that an opportunity exists for the collection of publicly available data for engineering and automotive trades skills that would support workforce planning by employers, employer bodies and organisations such as the EATC.

The focus for this project has been on specific trades and there is little publicly available data at this level (ie ANZSCO¹). Discussions were held with a number of data collection agencies, including the Department of Immigration and Border Protection, the Department of Employment, and the Australian Bureau of Statistics (ABS). As a result, it was determined that the best available data sources for assessing changes to the labour force were the 2006 and 2011 population census data, using the Australian and New Zealand Standard Classification of Occupations (ANZSCO), country of origin and year of arrival.

ANZSCO, as the standard means of classifying occupations, is not always meaningful to the Western Australian context, does not match the trades nomenclature used in the state and does not adequately capture the detail of higher level trade skills that employers require.

Reliance on ABS census data has meant the project team worked with data that pre-dates the peak of demand for skilled tradespersons and as such does not fully reflect the current situation. Worth noting also is that the ABS census data includes apprentices in the count of persons employed within an occupation.

Notwithstanding the problems with the available data, a significant advantage of relying on the ABS census data has been the opportunity to consider the labour force figures as a whole and to assess comparative levels of Australian born versus overseas workers (something that does not seem to have been discussed to any significant extent in other labour force analyses).

Within this context, at various points throughout this report, references are made to the appropriateness or adequacy of data sources.

Before focusing more specifically on the engineering and automotive trades, an overview of some of the key commentary on the economy and the labour market has been included to describe the broader environment and context affecting the nominated trades.

¹ Australian and New Zealand Standard Classification of Occupations

2. WESTERN AUSTRALIA ECONOMIC OVERVIEW

...capital expenditure in the mining and construction sector has peaked...significant falls in engineering construction are projected for the medium term

Expanding and developing resource projects have driven strong employment growth and led to labour market shortages in recent years. At the height of the Western Australian mining boom in 2012, a third of all spending in the state's economy was due to investment in capacity expansion, mostly new mines and equipment.² As the resources sector moves from construction to operation and maintenance, employment growth is not likely to be as strong and the skills required by employers are likely to change.³

The general consensus of the literature reviewed for this project is that capital expenditure in the mining and construction sector has peaked. Consequently, it is expected that the resources sector share of employment in Western Australia will fall as the mining boom moves to a less labour-intensive operational phase. The outlook is for a 15.7 per cent fall in engineering construction in 2014-15, and a 20.5 per cent decrease in 2015-16.⁴

This does not mean there are no mining projects coming on line. There is still significant investment in Western Australia's resources sector. The peak is likely to come in 2015 and 2016 when it is expected about \$86.1 billion in projects will be completed.⁵ The level of future investment in major resource projects, and the associated establishment of major engineering construction projects, beyond this peak is unclear.

² *Western Australian Business Outlook*, February 2014, Deloitte Access Economics

³ *WA Resources and Economics Report*, KPMG and Chamber of Minerals and Energy, December 2013

⁴ *CAN Commonwealth Bank Economics: Update* 2 April 2014

⁵ *WA Resources and Economics Report*, KPMG and Chamber of Minerals and Energy, December 2013

3. WESTERN AUSTRALIA LABOUR FORCE TRENDS

Aligned with shifts in resource sector activity, the Western Australian labour market is softening, unemployment is increasing and skills shortages are less acute. In the past 12 months there have been less vacancies and more candidates for each vacancy.

Throughout the recent boom there were significant shifts in the labour market. Apprentice numbers increased, as did the number of skilled migrants, including 457 visa holders. Subsequently, apprentice numbers have dropped but indications are that at a national level the number of 457 visa holders has remained relatively stable – the subclass 457 quarterly report of 31 March 2014 shows a slight increase of primary visa holders compared to the same period a year ago⁶.

In Western Australia employers continue to make significant use of the 457 visa. The state's share of the national number of primary visas granted was 16.7 per cent in the quarter ending 31 March 2014. There were 22,502 primary visa holders (20.1 per cent of the national number of visa holders) in the state over the same period.⁷

Generally, changes occurring in the broader labour market are also reflected in many of the trades that are the focus of this report, where:

- the skills shortage status has shifted to 'no shortage';
- the growth in apprentice numbers has started to taper; and
- skilled migration has been critical to addressing identified gaps in the labour market.

⁶ *Subclass 457 quarterly report, quarter ending at 31 March 2014*, p2, Australian Government, Department of Immigration and Border Protection.

⁷ *Western Australian Government Submission to the Independent Review of Integrity in the Subclass 457 Programme*, WA Department of Training and Workplace Development, 22 May 2014

Feedback from employers indicates another effect of the resources boom on the engineering and automotive labour market is the erosion of specialist skills. Employers attribute this to either the low level of some tasks undertaken on mining projects, or the recruitment of lower skilled workers in the face of skills shortages.

These specific changes are discussed later in the report under each trade area.

3.1 Skilled migration

...Western Australia is likely to continue as an importer of trades skills...overseas born workers have increased as a proportion of the working population in both the engineering and automotive trades

There is little doubt that skilled migration has made an important contribution to addressing identified skills shortages. While there are mixed views about the effectiveness and sustainability of skilled migration, which were well described and summarised by a Senate Committee report in July 2012, it will continue to be a critical component in any strategy responding to identified and ongoing gaps in specific occupations within the labour market.

The Senate Committee report concluded that skilled migration may represent a short-term solution to skills shortages but it was not seen as a substitute for home grown skills in the longer term.⁸ The Western Australian State Training Board, however, has expressed a view that targeted skilled migration will continue to be an important “source of skills for the state’s labour market”.⁹ A recent report by the Australian Workforce and Productivity Agency also argues that there will continue to be a need to look overseas to meet identified shortfalls, particularly at times of peak demand.¹⁰

⁸ *The shortage of engineering and related skills*, p29, The Senate Education, Employment and Workplace Relations References Committee

⁹ *State Training Plan 2014 – 2017*, p28, Government of Western Australia, the Department of Training and Workforce Development

¹⁰ *Engineering workforce study, June 2014*, p8, Australian Workforce and Productivity Agency

The research undertaken for this project supports the notion that the engineering and automotive trades in Western Australia are likely to continue as importers of trade skills. This is due to:

- The cyclical and sporadic nature of work linked to a range of projects requiring engineering skills;
- The nature of the current apprenticeship model – it can take up to 4 years to develop a skilled tradesperson and when business is poor employers do not have the capacity to offer apprenticeship places; and
- Ongoing requirements for specialised and higher level skills that are not being delivered through the training system.

The reliance on skilled migration at times of high employment demand is evidenced by the fact that in recent times Western Australia has accepted applicants at well above its population share. For example, in the first half of the 2013-14 financial year (to 31 December 2013), 17.6 per cent of subclass 457 visa applicants were granted for positions in Western Australia¹¹, significantly above its total population share of just under 11 per cent.

While the number of 457 visas issued for Western Australia remains relatively high, it dropped to 16.7 per cent of the national total in the quarter ending 31 March 2014, reflecting a softening labour market. For the year ended 30 September 2013, Western Australia also recorded the largest number of net overseas migration departures at 4,600 people (15.3 per cent).¹² This is most likely reflecting a change in the categories of occupations required, for example, there was a 48.2 per cent reduction in primary applications in the mining sector in 2013-14 and the only increases were in accommodation and food services and arts and recreation services.¹³

¹¹ *Subclass 457 quarterly report, quarter ending at 31 December 2013*, p5, Australian Government, Department of Immigration and Border Protection.

¹² 3101.0 – *Australian Demographic Statistics, Sep 2013*, Australian Bureau of Statistics, 27 March 2014

¹³ *Subclass 457 quarterly report, quarter ending at 31 March 2014*, p47, Australian Government, Department of Immigration and Border Protection

Notwithstanding recent changes in the mix of 457 visa holders, for Western Australia both mechanical engineering technician and motor mechanic general feature in the top 15 occupations for which 457 visas were granted in the twelve months to 31 March 2014.¹⁴ This points to ongoing requirements for skills that are not available locally.

The available data on 457 visas is defined using ANZSCO. The Western Australian Government submission to the Independent Review of Integrity in the Subclass 457 Programme¹⁵ identifies a need for more regular reviews of the ANZSCO by the Australian Bureau of Statistics, in consultation with state and territory governments, to account for occupational changes. This view is supported by the research undertaken for this project, which has identified a need for more specific occupation-linked data.

Recommendation 1

Work with the relevant Government agencies on the most appropriate occupational classifications in the engineering and automotive trades to enable more effective data collection.

By linking occupation codes (ANZSCO) to the trades, the project team has used census data from the Australian Bureau of Statistics that identifies country of origin and year of arrival for identified trade occupations, and reasonable assumptions can be made about the contribution of skilled migration at the height of the boom.

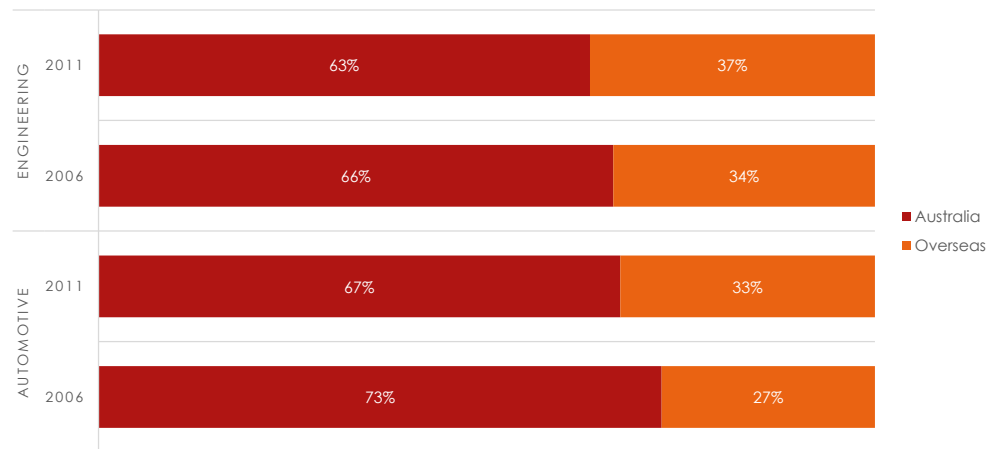
¹⁴ *Subclass 457 quarterly report, quarter ending at 31 December 2014*, Australian Government, Department of Immigration and Border Protection

¹⁵ *Western Australian Government Submission to the Independent Review of Integrity in the Subclass 457 Programme*, WA Department of Training and Workplace Development, 22 May 2014

.....the proportion of overseas born tradespersons in the selected engineering and automotive trades grew significantly

As the following chart (Figure 1) illustrates, overseas born workers have increased as a proportion of the working population in both the engineering and automotive trades. Further, in some of the occupational categories the increase in overseas born workers has been instrumental in maintaining employment levels within those trades. More detailed analysis of the ABS data is included in the focused discussion of each the broad trade areas.

Figure 1 - Population Share by Trade Area and Country of Origin



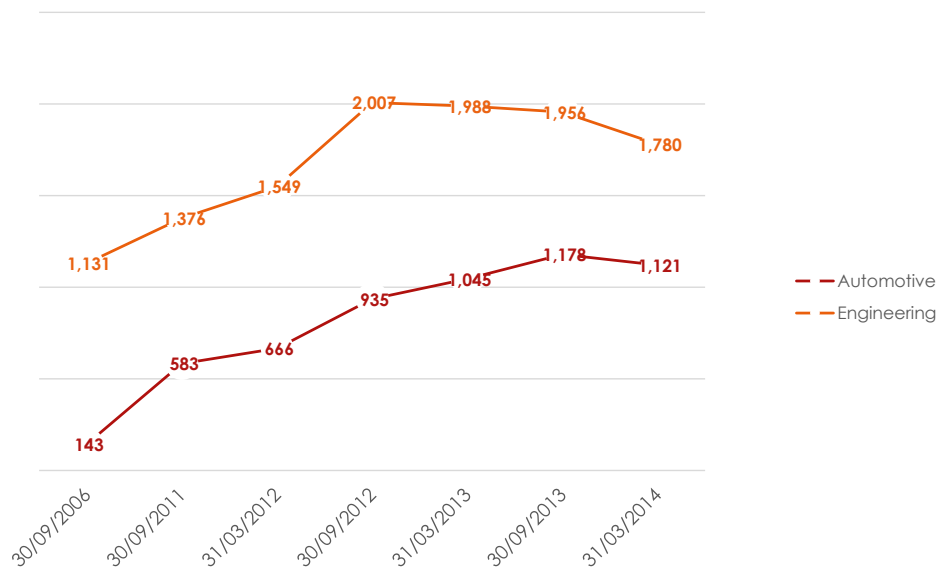
Based on ABS census data

Over the 5 year period from 2006 to 2011, the proportion of overseas born tradespersons in the selected engineering and automotive trades grew significantly, with the greatest shift occurring in the automotive trades.

Data on 457 visa holders at occupational level has recently become available on the Department of Immigration and Border Protection website¹⁶. Overall it shows a similar pattern to the ABS census data, although it is more current and provides more detail. Numbers of 457 visa holders grew for most of the occupations in the engineering and automotive trades from 2006 to 2008. Coinciding with the global financial crisis, numbers declined from 2009, with an upturn from 2012 until late 2013.

For the purposes of this project some of the 457 data has been extracted and compared to the ABS census data. Broad trends for the engineering and automotive trades are captured in Figure 2 (though the intervening period between the global financial crisis and 2012 is not captured here).

Figure 2 - Trend Data 457 Visa Holders in the Engineering and Automotive Trades



Based on Department of Immigration and Border Protection data

¹⁶ <https://www.immi.gov.au/media/statistics/statistical-info/temp-entrants/subclass-457.htm>

3.2 Apprenticeships

The apprenticeship system is the only pathway for entry to the nominated engineering and automotive trades covered by this report. Development of local trade skills depends on the continuous intake of people into apprenticeship positions. This model relies on the capacity of employers to offer extended training opportunities combined with full-time employment. The research has identified some worrying trends. While the specific details for each of the sectors are discussed in detail later in this report, there are some common themes.



Generally, employers in both sectors value, and are committed to, training apprentices. Approximately two-thirds of employers surveyed for this project employed apprentices. However, their capacity to employ and train apprentices is very much driven by costs and the business cycle. A number of employers indicated they were reviewing the size of their apprentice workforce due to rising costs and/or having insufficient work.

In the focus groups participants discussed the cyclical nature of their industries, the effect this had on apprentice numbers, and the likelihood of having insufficient skilled workers when the next upswing occurs.

The decline in apprentice numbers when work slows, together with an apprenticeship term of up to four years, presents a challenge to ensuring the availability of appropriately skilled workers when demand grows.

While cost and business capacity were influencing factors on the employment of apprentices, there were also comments about the quality and readiness of young people. A number of survey respondents and focus group participants commented on the attitudes and expectations of young people, pointing to an apparent lack of the broader, more generic skills required to succeed in the chosen trade. This might point to a need for better support, or different models for matching apprentices and employers, an argument made by AWPA in its recent report¹⁷.

Employers participating in the project research also identified a number of other issues with the current apprenticeship model, principally:

- Some of the apprentice delivery models are too narrowly focused, not developing a broad enough range of technical skill sets;
- There is limited opportunity to develop specialised skills within the apprenticeship program - higher level certified welding skills and automotive electrical skills for mechanics were cited as examples;
- A lack of capacity and flexibility in training providers to respond to rapidly changing industry technologies – a particular issue for the automotive trades;
- The need to build the notion of a trade as a career;
- The need to ensure apprentices are suited to, and have an aptitude for, the trade they have chosen; and
- A divergence in training requirements that suggests the current 'one size fits all' apprentice system may no longer be appropriate.

Discussion and recommendations related to some of the issues highlighted here are included elsewhere in this report. Apprentice suitability and aptitude, and the notion of a trade as a career were raised frequently by employers throughout this project.

¹⁷ *Engineering workforce study, June 2014*, p75, Australian Workforce and Productivity Agency

Tools developed by the Australian Apprenticeships and Traineeships Information Service, including career information and quizzes¹⁸, could prove useful in addressing this area of concern.

Recommendation 2

Define the issues associated with the existing apprenticeship model and develop alternative approaches (whilst maintaining the integrity of the apprenticeship system) to ensure the continued industry investment in the state's engineering and automotive skills base.

Recommendation 3

Strengthen involvement in career promotion and industry advice to the schools sector. Consider the suitability of materials available through the Australian Apprenticeships and Traineeships Information Service for prospective apprentice aptitude self-assessment.

¹⁸ <http://www.aapathways.com.au/Career-Resources/Industry-Career-Information---Quizzes>

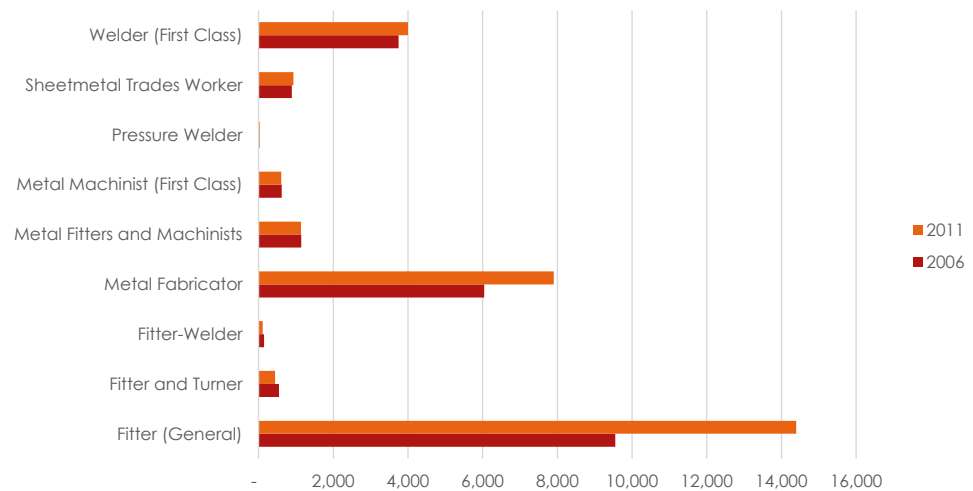


4 ENGINEERING TRADES

4.1 Overview

In Western Australia, the population of engineering trades workers has grown significantly. ABS census data for 2006 and 2011 shows growth in numbers of people working in the engineering trades of 23 per cent – well above the 14 per cent increase in the Western Australian population over the same period. However, there is a degree of variability in the individual occupational classifications, as shown below in Figure 3 and Table 1¹⁹.

Figure 3 - Engineering Trades Workers - Comparative Population (ABS Census 2006 and 2011)



¹⁹ Australian and New Zealand Standard Classification of Occupations (ANZSCO) is adopted by the Australian Bureau of Statistics to classify occupations. For the purposes of this project identified ANZSCO codes are used as a proxy for the trades in focus.

Table 1 - ABS Census Data - Engineering Trades Workers (ANZSCO)

Trade	2006	2011	% shift
Sheetmetal Trades Worker	891	933	5%
Metal Fabricator	6,044	7,907	24%
Pressure Welder	21	29	28%
Welder (First Class)	3,751	4,003	6%
Fitter (General)	9,554	14,397	34%
Fitter and Turner	547	439	-25%
Fitter-Welder	143	109	-31%
Metal Machinist (First Class)	618	607	-2%
Metal Fitters and Machinists	1,142	1,138	0%
Total	22,711	29,562	23%

Based on ABS data, which includes apprentices

....many employers are still reporting difficulties with finding suitably qualified tradespersons and some specialist skills

In recent years, the mining and resources sectors have had a significant impact on demand for engineering trades workers, particularly the engineering fabrication and mechanical trades. However, given the slowdown in construction, demand for these trades has slowed, with the result that many engineering/metal trade workers are returning to metropolitan Western Australia, increasing the pool of workers within the engineering trades cluster.²⁰

Despite the greater availability of labour, many employers are still reporting difficulties with finding suitably qualified tradespersons and some specialist skills, particularly welders. There is also some concern that the inevitable decline in apprenticeships associated with a downturn in business activity will mean continuing skills shortages and a need to again turn to overseas labour markets for the recruitment of skilled labour in the next upturn.

²⁰ Labour Market Research – Engineering Trades Western Australia, September 2013, Australian Government Labour Economics Office Western Australia Department of Employment

4.2 Skills shortages and trade skill requirements

The softening of the labour market in the engineering trades is reflected in Table 2. What is apparent from scanning this table is that skills shortages still exist in at least two of the engineering trades. Even where there are no shortages, employers are commenting about the difficulty in finding people with specialised skills.

Table 2 - Engineering Trades Labour Market Status

3222-11 Sheetmetal Workers	
Labour Market Status 2012: No shortage	Labour Market Status Sept 2013: Shortage
% of vacancies filled: 91% within 4 weeks	No. of applicants per vacancy: 23 with 3 considered suitable
Occupation in demand for WA skilled migration: Yes – Schedule 1	SPOL category: Priority 1
Issues: Some applicants unqualified and lacked relevant experience	
3223-11 Metal Fabricator	
Labour Market Status 2012: No shortage	Labour Market Status Sept 2013: No shortage
% of vacancies filled: 100% within 4 weeks	No. of applicants per vacancy: 23 with 6 considered suitable
Occupation in demand for WA skilled migration: Yes – Schedule 1	SPOL category: Priority 3
Issues: Some employers taking skills and experience without formal trade qualifications	

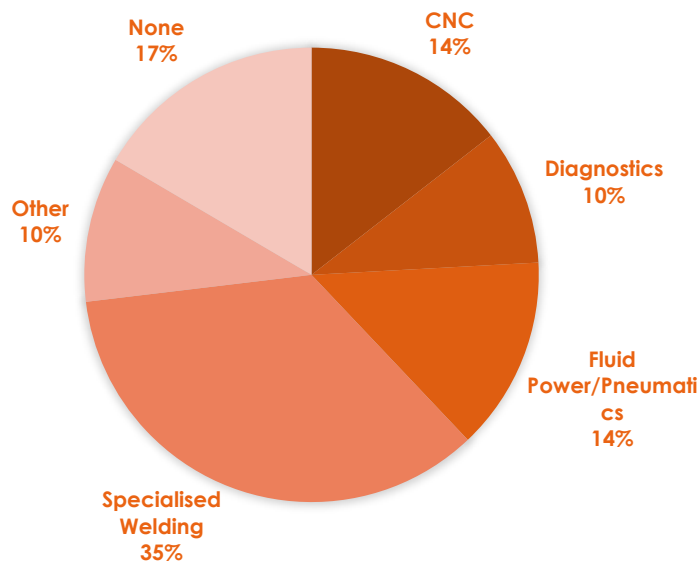
3223-13 Welder (First Class)	
Labour Market Status 2012: Recruitment difficulty	Labour Market Status Sept 2013: Regional recruitment difficulty
% of vacancies filled: 89% within 4 weeks	No. of applicants per vacancy: 37 with 5 considered suitable
Occupation in demand for WA skilled migration: Yes – Schedule 1	SPOL category: Priority 1
Issues: Market eased but hard to find experienced welders with specialised skills	
3232-11, 12 & 13 Fitters	
Labour Market Status 2012: Recruitment difficulty	Labour Market Status Sept 2013: Regional shortage only
% of vacancies filled: 50% within 4 weeks	No. of applicants per vacancy: 21 with 2 considered suitable
Occupation in demand for WA skilled migration: Yes – Schedule 1	SPOL category: Priority 1
Issues: Market has eased but hard to attract experienced fitters with relevant skills	
3232-14 Metal Machinist (1 st Class)	
Labour Market Status 2012: Shortage	Labour Market Status Sept 2013: Shortage
% of vacancies filled: 50% within 4 weeks	No. of applicants per vacancy: 17 with 2 considered suitable
Occupation in demand for WA skilled migration: Yes – Schedule 1	SPOL category: Priority 1
Issues: Many applicants had no machining tools experience or ability to use CNC technology	

Source: Information Sheets ANZSCO 3222-11 Sheetmetal Trades Worker, ANZSCO3223-11 Metal Fabricator, ANZSCO 3223-13 Welder (First Class), ANZSCO 3232-14 Metal Machinist (First Class), Australian Government, Labour Economics Office Western Australia, Department of Employment, September 2013, State priority occupation list (combined list) August 2013, Government of Western Australia, Department of Training and Workforce Development, Western Australian skilled migration occupation list 2013-2014, Government of Western Australia Department of Migration

The labour market information points to continuing skills gaps, so the project went directly to employers to gather information about their skill requirements. Employer feedback shown in Figure 4 echoes the findings of the Engineering Labour Market Status Report. There is a high demand for specialised welding, and a number of respondents chose more than one specific skill requirement. Those respondents who chose 'other' skills, identified:

- Fabrication – pipework (explained as work undertaken by pipefitters – another nomenclature example);
- Engine rebuilding;
- Specialist fabrication skills (described as boilermaking skills); and
- Other individual employer requirements such as equipment overhauling; brazing; higher level refrigeration skills; hydraulics; gas tungsten arc welding; instrumentation; electrical installation; and specialised boat building skills.

Figure 4 - Employer Identified Engineering Skill Requirements



Respondents to the EATC Skills Requirement Survey were almost evenly split between those who answered that they were experiencing problems recruiting suitably qualified tradespersons, at 51 per cent, and those who were not at 49 per cent. Many of those who said that recruiting was an issue seemed to be reflecting on past experiences, when demand for skilled tradespersons was much stronger. Many of the difficulties also related to what employers described as specialist skills or the specialised nature of their business. Comments were made in relation to:

- The need for specialists – welders, hydraulics, skilled fitter machinists, ship building, fluid power pneumatics, manufacturing skills; and
- The quality, expectations and attitudes of applicants.

A significant majority of respondents, 73 per cent, said they support the use of post-trade training to upskill employees. In subsequent focus group discussions, employers expressed concern about commitment to ongoing training and development, noting that many workers were not keeping their trades skills current. Post trade and higher-level training was identified as an important means of addressing some of the reported skills gaps and encouraging professionalism in their workforces.

It is clear that there is industry demand for higher level engineering skills. The Metals and Engineering training package (MEM05) is sufficiently flexible to support this demand. However, analysis of data provided by the Department of Training and Workforce Development indicates that the skills development needed at this level is not occurring. This may explain why employers are looking to overseas labour.

Of all the reported training, only four per cent is in areas identified as critical by employers. The following table illustrates the relatively low numbers of unit enrolments and training hours delivered in 2013.

Table 3 - Enrolments in Specialist Units Aligned to Skill Shortages

Unit code	Unit Title	Unit Enrolments	Student Contact Hours
MEM05016C	PERFORM ADVANCED WELDING USING MANUAL METAL ARC WELDING PROCESS	18	648
MEM05020C	PERFORM ADVANCED WELDING USING GAS TUNGSTEN ARC WELDING PROCESS	21	756
MEM05018C	PERFORM ADVANCED WELDING USING GAS METAL ARC WELDING PROCESS	6	216
MEM05048B	PERFORM ADVANCED WELDING USING FLUX CORE ARC WELDING PROCESS	6	216
MEM10010B	INSTALL PIPEWORK AND PIPEWORK ASSEMBLIES	16	576
MEM18020B	MAINTAIN HYDRAULIC SYSTEM COMPONENTS	140	5,040
MEM18021B	MAINTAIN HYDRAULIC SYSTEMS	114	4,104
MEM18022B	MAINTAIN FLUID POWER CONTROLS	31	2,232
Total		352	13,788
All Certificate IV in Engineering Delivery		8,338	340,667

Given the advice on demand provided during the project, overall figures for the units shown and for a broad range of other higher level skill units are very low compared to the size of the fabrication and mechanical trades population in the state. The reasons for the overall low level of engagement are unclear and warrant further investigation.

Recommendation 4

With the Department of Training and Workforce Development and other stakeholders, to investigate the reasons for low level enrolments in key higher level skill units in the fabrication and mechanical trades, and determine how skill sets may contribute to improved participation rates.

While employers in the focus groups reported good quality applicants currently available, their comments echoed those of employers in the Western Australian Labor Economic Office September 2013 survey that “Generally, unsuitable applicants had been working in the mining industry for an extended period and had no recent experience working with lighter gauge metals used in manufacturing.”²¹

“The quality of tradespersons who have worked in the north-west needs improving. Many cannot identify materials. They don't keep up with standards and they cannot identify symbols which means they make basic mistakes.”

Employers in the focus groups also noted a serious shortage of specialist welders and pipe fitters and commented on the poor quality of skills in these areas. This issue identifies the availability of suitably skilled tradespersons rather than the number of available tradespersons.

Employers advised that the skills required to interpret pipework drawings and welding symbols and the practical skills required to install pipework are not available, further, many current tradespersons in these skills areas were perceived as being unable to satisfy expected industry standards.

“During the boom there were few welding apprentices. It is still difficult to find welders and the numbers for welding training are too low.”

“There is a need for competent welders and huge benefits in having Certificate III and IV trained welders.”

²¹ *Labour Market Research – Engineering Trades Western Australia*, September 2013, Labour Economics Office Western Australia, Department of Employment

The employer feedback about the availability of the key fabrication skills for pipe-fitting and specialised welding was as follows:

- There has never been a specific pipe fitting apprenticeship in Western Australia and industry has relied on fabrication tradespersons who have completed a general heavy fabrication apprenticeship (boilermaking) to undertake pipe fitting work. As a consequence, many fabrication tradespersons undertaking high level pipework assembly and installation are skilled migrants from the UK where pipefitting is a recognised trade;
- Pipe-fitting skills are typically learned on-the-job by Australian trained fabrication tradespersons and this requires access to suitable work for this purpose;
- Most RTOs only offer a general combined fabrication/welding pathway (what is typically known as a boilermaker/welder program) and this has resulted in a diminution of local specialist welding skills;
- During the boom periods, many welders are sent by contractors to resource sector construction sites without a formal trade certificate and are simply trained to pass the site welding specifications. When work becomes scarce these welders are unable to apply a broader range or higher level of welding skills because they have not completed a full apprenticeship program;
- There are not enough welders trained to satisfy the requirements of Certificate 1 to 9 under Australian Standard 1796 Certification of Welders – this approach would formalise welding training and raise the overall skill standard.
- There is a need to promote and reposition welding as a full apprenticeship program separate from the general heavy fabrication trade. The trade of Engineering Tradesperson Fabrication – First Class Welding is already established but has very few enrolments. This will require RTOs to promote a welding pathway rather than the current combined fabrication/welding pathway.

Recommendation 5

Reposition welding as a full apprenticeship program, (including up to Certificate IV Advanced Welding), separate from the general heavy fabrication trade and train to the requirements of Certificate 1 to 9 under Australian Standard 1796 Certification of Welders.

Employers also reported that heavy fabrication skills were being lost due to the shift of major fabrication projects to large offshore fabrication yards as part of a shift to modularised construction.

The number of fabrication tradespersons in Western Australia has increased in recent years to support increased engineering construction activity. An increase in numbers does not necessarily mean an increase in the quality of the skills base.

Feedback gathered during the project suggested that much of the general fabrication construction work did not require higher level skills (other than the pipe-work and specialised welding areas) and that tradespersons focused on specific and often narrow project or contractor requirements.

4.3 Overseas workers

Much of the growth in engineering trade workers can be attributed to a significant increase in overseas born workers, including skilled migrants and 457 visa holders. Analysis of data from the 2006 and 2011 ABS census (see Table 4) shows increases in overseas born engineering trades workers at a much higher rate than the Australian born workforce. In some trades, without growth in overseas born workers the skills base would have shrunk – probably at a time when demand was reaching its peak.

Table 4 - Engineering Trades Workers: Australian and Overseas Born

Engineering Trades	Census Year 2006	Census Year 2011	% Growth
Fitter (General)	9,554	14,397	33.6%
Australia	6,728	9,657	30.3%
Other Countries	2,826	4,740	40.4%
Fitter and Turner	547	439	-24.6%
Australia	353	273	-29.3%
Other Countries	194	166	-16.9%
Fitter-Welder	143	109	-31.2%
Australia	74	56	-32.1%
Other Countries	69	53	-30.2%
Metal Fabricator	6,044	7,907	23.6%
Australia	4,164	5,231	20.4%
Other Countries	1,880	2,676	29.7%
Metal Fitters and Machinists	1,142	1,138	-0.4%
Australia	782	851	8.1%
Other Countries	360	287	-25.4%
Metal Machinist (First Class)	618	607	-1.8%
Australia	339	260	-30.4%
Other Countries	279	347	19.6%
Pressure Welder	21	29	27.6%
Australia	10	15	33.3%
Other Countries	11	14	21.4%
Sheetmetal Trades Worker	891	933	4.5%
Australia	591	572	-3.3%
Other Countries	300	361	16.9%
Welder (First Class)	3,751	4,003	6.3%
Australia	2,016	1,797	-12.2%
Other Countries	1,735	2,206	21.4%
Grand Total	22,711	29,562	23.2%

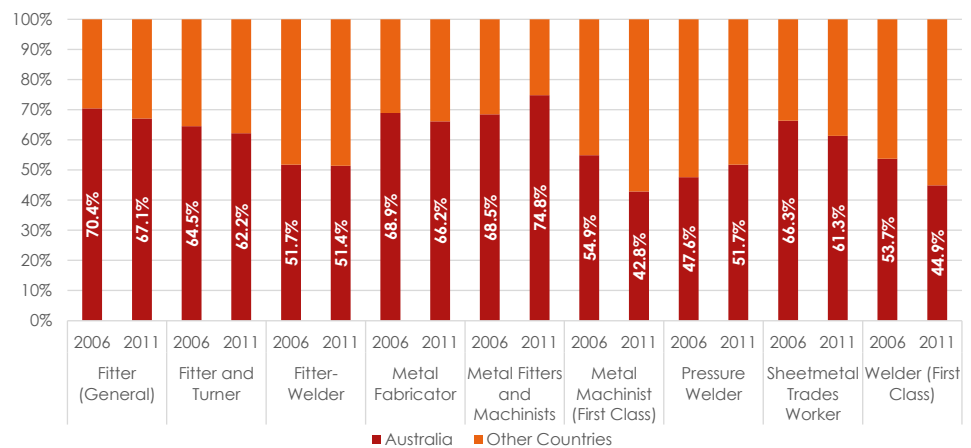
Based on ABS data, which includes apprentices

Over the five years from 2006 to 2011, Australian born engineering trades workers grew by 24 per cent, while the number of workers from other countries grew by 42 per cent. Noting that the data includes apprentices, some of the growth in Australian born workers could be associated with increases in apprentice numbers, (assuming that a majority of those apprentices would be Australians), so the differential may be more acute.

In effect, the proportion of Australian born workers fell from 66 per cent of engineering trades workers in 2006 to 63 per cent in 2011. The relatively high levels of overseas born workers suggests a growing reliance on skilled migration – this situation needs monitoring.

The impact of such a shift in the make-up of the workforce at occupation level is shown Figure 5.

Figure 5 - Engineering Trades Workers – Comparative Population at ABS Census 2006 and 2011



Based on ABS data

Caution must be exercised when considering this data because a significant proportion of workers from other countries have been in Australia for some time and are likely to be Australian citizens or permanent residents – many may even have done their apprenticeships here.

Fundamentally, the assumption cannot be made that all overseas born workers are temporary workers – it is likely that a significant proportion of them are part of the permanent workforce. However, by looking at the year of arrival, shown in the following charts, it is apparent that the numbers of recently arrived workers (ie those who arrived within five years of the census dates) grew dramatically, from 14 per cent at the 2006 census to 34 per cent in 2011.

Data from the Department of Immigration and Border Protection website indicates that most of the growth in overseas born workers across the engineering trades can be attributed to 457 visa holders. Figure 8 shows trends for the fabrication and mechanical trades since September 2006.

Figure 6 - Overseas Born Engineering Trades Workers by Year of Arrival (2006 ABS Census)

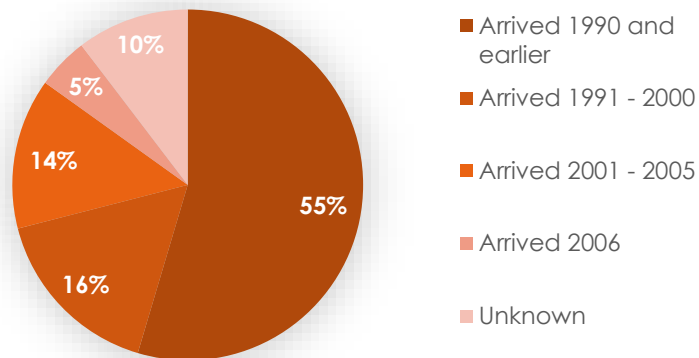


Figure 7 - Overseas Born Engineering Trades Workers by Year of Arrival (2011 ABS Census)

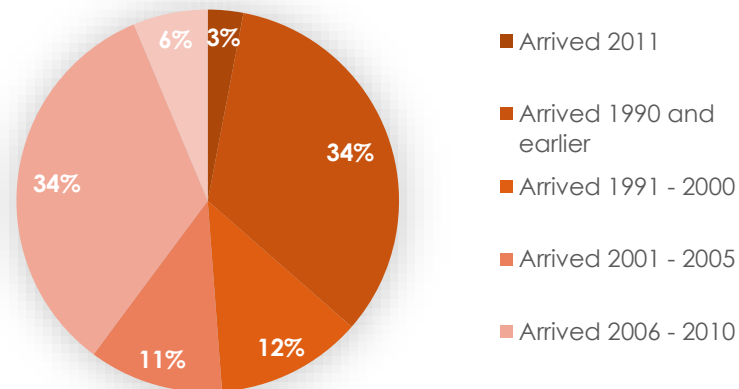
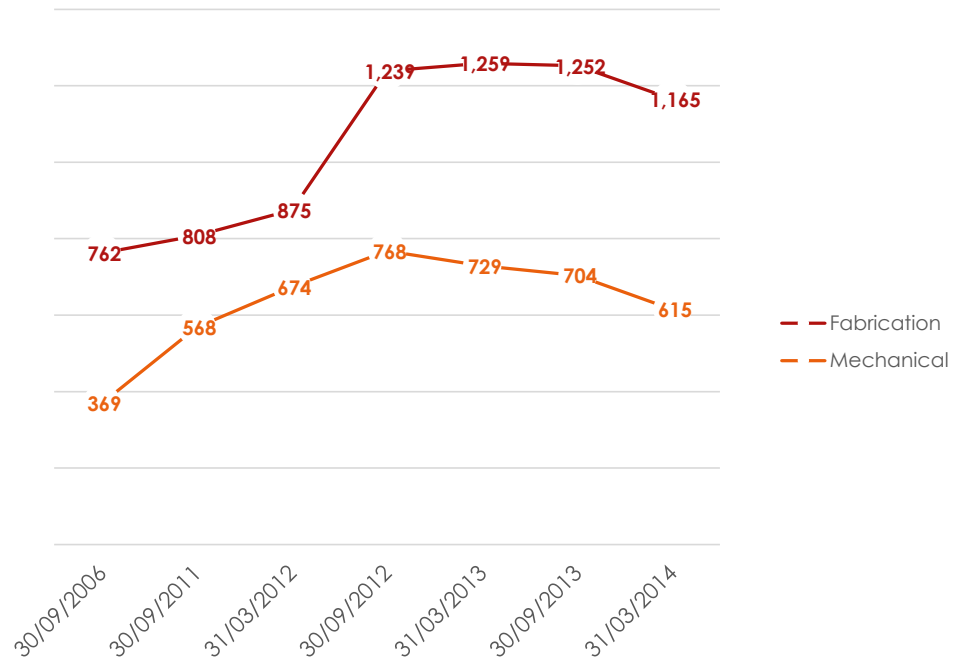


Figure 8 - 457 Visa Holder Numbers Working in WA in Select Engineering Fabrication and Mechanical Trades Occupations



Based on data from the Department of Immigration and Border Protection website. Note does not include data for trade occupations: fitter and turner; fitter welder; and pressure welder²²

Taking the information in figures 6, 7 and 8 as a whole, there appears to be at least a couple of occupational trade areas warranting closer attention.

- a) Metal Machinist (First Class): In this occupational category the proportion of Australian born workers declined, so that they made up less than half the working population. Machinist – metal apprentices in-training also declined from 31 December 2009 to 2013. Over the same period reliance on 457 visas holders rose significantly. Taking all of these factors together, it may be that this trade is at risk.

²² 457 intake numbers in these occupations are low and would not make a material difference to the data in the chart.

b) Welder (First Class): The proportion of Australian born workers declined and, here too, they made up less than half the workforce. The decline in fabrication (welding) apprentices in training is even more dramatic than that witnessed for the machinist-metal apprentices. Part of this decline may have been offset by a fairly dramatic increase in 457 visa holders in the welder (first class) occupational category, which points to the shortage of specialised welding skills.

Over the five years between the 2006 and 2011 census there was a noticeable shift in the countries of origin for overseas born engineering trades workers, as can be seen in Table 5.

Table 5 - Overseas Born Engineering Trades Workers – Top 10 Countries of Origin (2011)

Country of Origin	Census Yr 2006	Census Yr 2011	Growth
England	2,335	2,469	5%
New Zealand	1,140	1,754	35%
Philippines	248	1,028	76%
South Africa	533	844	37%
China	96	574	83%
Scotland	446	478	7%
India	133	442	70%
Zimbabwe	159	389	59%
Ireland	115	244	53%
Vietnam	150	167	10%
Other countries	1,835	2,125	14%
Unknown	464	336	-38%
Grand Total	7,654	10,850	29%

Based on ABS 2011 census data

Looking at employer feedback provided through the skills requirement survey, 76 per cent of employers of engineering tradespersons have or are employing overseas workers. Given that employers have also commented on their preference to employ local workers and the higher costs associated with importing labour, the fact that such a substantial number have turned to overseas workers to meet their trades skills requirements is worth noting. Further, employers reported variable experiences with overseas workers some of which is captured in Table 6.

Table 6 - Engineering Employer Perceptions of Comparative Skill Levels

Overseas Trained Perceived As...	Count	Comments
Better	19	Overseas trained workers tend to have a better attitude; it depends on where they are from – some are good and some are bad; they are better trained on working in high risk.
Same	42	Some are good, some are bad; they generally have a better work ethic; language can be a barrier
Worse	14	Communications issues; lack of independent thinking
Not applicable	25	

The data shows that during the recent times of increasing demand engineering employers have used the 457 visa arrangements to fill skills gaps. In some specialist trade areas such as metal machinist and welder (first class) the use of the 457 arrangements has been significant in maintaining the trade skills base.

Employer feedback during the project is that the use of 457 visa holders and the recruitment of overseas based tradespersons is a costly exercise and that it could be less prevalent if specific trade skills were available locally.

When employers make greater use of skilled migration and flexible visa arrangements, as a general rule, they also increase their apprentice intake. However, it is the level of apprentice intake during periods when the business cycle is at a low point that ultimately influences future skilled labour recruitment choices. Low numbers of apprenticeship commencements in any given year can produce a skills gap four, five and six years into the future. Employers fill the gap with offshore recruitment and the cycle continues.

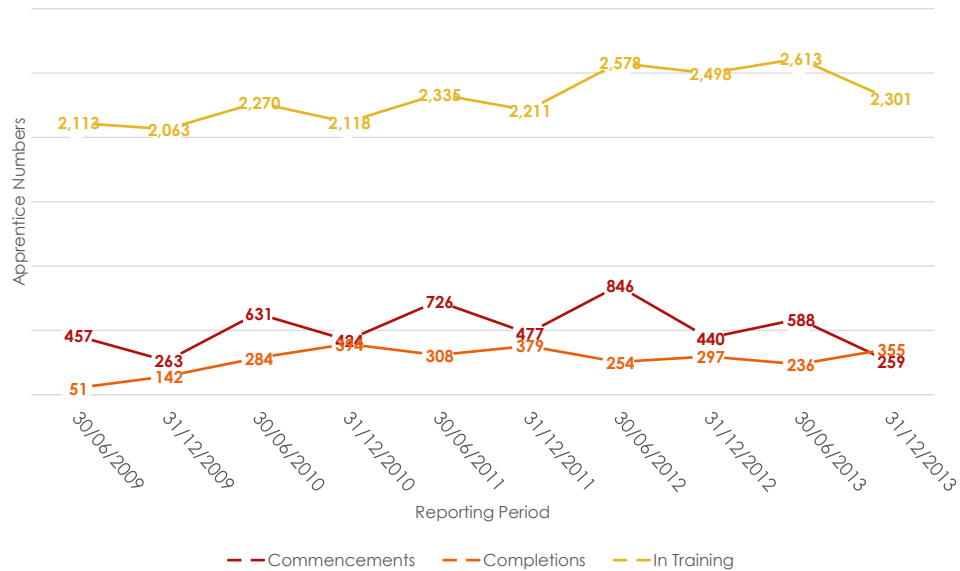
4.4 Engineering trades apprentices



Apprentice numbers often serve as a barometer for the health of the labour market and longer term supply of a skilled workforce. The following chart has been derived from data supplied by the WA Department of

Training and Workforce Development. It shows that after a period of steady growth from the beginning of 2010, the numbers of apprentices in the nominated engineering trades, started to decline in the second half of 2012.

Figure 9 - Engineering Trades Apprentices – Trend Data 2009 to 2013



Most worrying is the decline in apprenticeship commencements in the second half of 2013, where numbers have dropped to a level lower than the same period in 2009 (noting that the 2009 figures most likely reflect the after effects of the global financial crisis).

At a time when apprenticeship commencements are reducing, and with non-completion rates of almost 35%, it seems that in a few years' time there will be fewer locally trained tradespersons available.

Notwithstanding this potentially longer term trend, the decline for both reporting periods from 2012 to 2013 is in the order of 30 per cent.

More detailed information for each of the nominated engineering trades is included at Appendix C. An examination of the data at the individual trade level shows there may be particular cause for concern in the following areas:

- Engineering Tradesperson Fabrication (Heavy), where commencing numbers in 2013 show a 55 per cent reduction compared to the same periods in 2012.
- Engineering Tradesperson Fabrication (Heavy/Welding), where there was a marked decline in commencements in the December 2013 reporting period.
- Engineering Tradesperson Mechanical (Machinist – Metal), a highly specialist trade with very low numbers of apprentices – there were no commencements in the second half of 2013 and only 4 commencements in the first half of the year.

The longer term impact of lower commencements is compounded by relatively high apprenticeship attrition rates. Research undertaken by ACIL Allen Consulting and NCVET shows that there is a significant level of non-completion.

Western Australia has a completion rate of 65.6 per cent in the engineering trades.²³ While qualification completion rates in the engineering trades are higher relative to other trades, and WA is doing better than most other states, the data presented by ACIL Allen Consulting suggests that over one third of engineering trades apprentices in WA are not finishing their apprenticeship.

²³ Review of Qualification Completions in Engineering Trades Apprenticeships, ACIL Allen Consulting, 2013, p 17

Variability is evident across the trades within the engineering grouping, with the ACIL Allen Consulting report showing a 68.4 per cent completion rate for mechanical engineering trades (ANZSCO 323), compared to 61.3 per cent for fabrication engineering trades (ANZSCO 322).²⁴

Another factor reported as influencing qualification completion rates is the qualification level "...with students undertaking a Certificate IV qualification having completion rates approximately 5 percentage points higher than those studying a Certificate III".²⁵ Although the ACIL Allen Consulting report identifies the benefits of the Certificate IV completion rates, this does not apply in WA where the Certificate IV qualifications are not available for mechanical and fabrication engineering trades as a direct entry apprenticeship program.

The argument mounted by ACIL Allen Consulting is that a focus on improving apprenticeship completion rates could make a significant contribution to addressing skills shortages and their report suggests a number of strategies related to apprentice recruitment, information and mentoring, along with employer support and suitability.

Employers are signalling a lack of advanced and specialised skills in the engineering trades, as captured through the labour market surveys shown in Table 2. Such feedback indicates that the current decline in apprentice numbers may be compounded by the fact that there is no higher level apprenticeship option at Certificate IV in Western Australia.

The employer focus groups strongly indicated an appetite for Certificate IV trades as a direct entry apprenticeship program. It was also noted that there is a need to ensure supervising tradesmen have up-to-date skills too so that they can supervise apprentices.

²⁴ As above

²⁵ As above, p 18

The Metals and Engineering training package provides a clear training pathway for additional skilling and allows direct entry into a Certificate IV qualification so that an employer may choose an apprenticeship program that delivers a higher level skills outcome. This option is not available for mechanical or fabrication apprentices in Western Australia. By comparison, there is a direct entry Certificate IV in Engineering for electrical/instrumentation apprentices.

A scan of the websites of training authorities in other states, including New South Wales, Victoria and Queensland, shows there are advanced trade options offered at Certificate IV level and higher – which is not the case in Western Australia. While the numbers of higher level trades apprentices may not be high²⁶, the fact that the completion rates are significantly better for this cohort suggests there may be some benefit in exploring such an option locally.

Recommendations 6 and 7

Work towards the establishment of a direct entry Certificate IV apprenticeship program in the engineering trade.

Encourage continuous improvement by giving employers and individual Certificate III holders the option of accessing specific units to reach the Certificate IV outcome for trade up-skilling purposes in the engineering trade.

²⁶ The ACIL Allen Consulting report, on page 12, indicates that approximately 6 per cent of engineering trades apprentices are at Certificate IV level.

Data (Table 7) related to the number of employers of apprentices reveals reasonably steady levels of engagement with the apprenticeship system over the past 5 years, noting a peak in 2012.

Table 7 - Sum of Employers of Engineering Apprentices by Employer Size

Year	Engineering Trades			All Engineering
	Large	Medium	Small ²⁷	Total
2009	163	170	241	574
2010	161	189	247	597
2011	163	178	247	588
2012	185	206	268	659
2013	160	183	253	596

Looking at the data in more detail indicates the following factors may be significant:

- Generally the number of small employers has remained steady. However, in the Mechanical (Machinist-Metal) engineering trade the apprentice employer numbers have halved and were down to just five employers across the state in 2013.
- In the Fabrication (Heavy) engineering trade there has been a significant fall in the number of medium-sized employers in the mining sector.
- Most of the decline in the large-sized employer category can be attributed to employers in the mining sector, which in recent years has recorded the most employers of apprentices (though not the most apprentices).

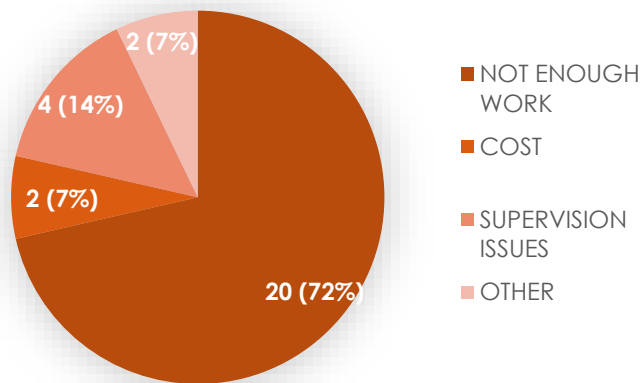
The detailed data (supplied by the Department of Training and Workforce Development) that informed this analysis was provided in the interim report and can be provided on request.

²⁷ Large employers are categorised as those with 100 or more employees, medium employers have employee numbers between 20 and 99, and small employers have less than 20 employees.

Results from the EATC Skills Requirement Survey show strong commitment to the employment of apprentices in engineering, given that 72 per cent of respondents replied that they were employing apprentices. A few of those respondents commented on the fact that rising costs were causing them to review their apprenticeship arrangements. Those who don't employ apprentices mainly identified the issue of not having enough work and/or an appropriate spread of work.

The following chart summarises the reasons respondents identified for not employing apprentices.

Figure 10 - Reasons for not Employing Engineering Apprentices



In response to the question "Would you employ apprentices if the cost of wages and on-costs were subsidised or shared with other employers?" 62 per cent of engineering employers indicated that it would make a difference, while 34 per cent replied 'no', which would suggest that cost is not the sole consideration for a substantial number of employers.

4.5 Future requirements

While the proportion of vacancies filled has improved significantly in recent times, employers are still reporting shortages for first class welders, fitters and metal machinists (first class). Although metal machinists are still considered to be in shortage, employers are not committing to taking on apprentices. In focus group discussions employers commented that, ideally, now is the time to be training more apprentices. However, the lack of work, and associated income, makes it neither possible nor practical.

“...training in hydraulics and mechanics should be happening now, ready for the upturn but we simply do not have the work to take on the apprentices required. We will have to rely on overseas workers again in the next upturn.”

An interesting trend reported by some focus group participants was the globalisation of the labour market. One company recruited workers from its workshops in the Philippines to meet demand here in Western Australia. The probability of using their Australian workforce in the United States given the downturn here was also mentioned. Having a flexible and mobile workforce means the peaks and troughs can be managed more efficiently and effectively. Not all companies have the resources to manage this level of global reach but it is a development worth noting.

Employers in the regular Department of Employment ‘Survey of Employers who have Recently Advertised’ commented that despite receiving multiple applications from trade qualified applicants, they were still getting a number of unsuitable applicants. Issues identified by employers included:

- currency and relevance of skills;
- lack of specialised skills specific to the business;
- insufficient certification, for example welding; and
- poor communication and customer service skills²⁸.

²⁸ *Labour Market Research – Engineering Trades Western Australia*, p.3 Labour Economics Office Western Australia, Department of Employment, September 2013

These comments were echoed in the EATC Skills Requirement Survey and in the focus groups. Remedies identified in the focus groups included:

- Driving professionalism through the apprenticeship system – looking on a trade as a career, not a job;
- Upskilling workers by enrolling them in certificate IV to increase levels of expertise;
- A Certificate IV apprenticeship program;
- Certificate III and Certificate IV trained welders;
- Ensure supervising tradesmen have up-to-date skills; and
- More flexible RTOs;

A recent trend towards more offsite and off shore construction, resulting from the use of more modular fabrication in the construction phases of resource projects, is likely to continue.²⁹ As a consequence, local companies will lose opportunities, which will impact on their skills and labour force requirements. The diminishing of specific fabrication skills, such as pipefitting, and the lack of skills in the welding trade were cited in the focus groups, (as well as the Department of Employment survey) as evidence of this phenomenon.

The Department of Employment's Occupational Employment Projections to November 2017 predict a fall in employment of engineering trades workers Australia-wide over the five years to November 2017, with a slight increase of 1400 for Structural Steel and Welding Trades Workers and a decrease of 3700 for Metal Fitters and Machinists.³⁰ This means the lack of welding training described by employers in the EATC Skills Requirement Survey, along with the difficulties identified with recruiting welders with specialist skills are likely to be ongoing issues.

“Most of the work is welding related to installation of offshore constructions.”

²⁹ *Modular Fabrication in the Resources Sector in Western Australia: Current Practices and Strategies for Improvement*, Report for the Department of Commerce and the Industry Capability Network, Dr Martin West, November 2011

³⁰ *Employment Outlook to 2017*, Australian Government Department of Education, Employment and Workplace Relations, Labour Market Research and Analysis Branch August 2013

"The skills are not available anywhere near demand."

Modeling undertaken for the Australian Workforce and Productivity Agency suggests that employment of structural steel and welding trades workers and metal fitters and machinists will grow in resource project construction, mining operations and oil and gas operations between 2013 and 2018. The modeling suggests the strongest jobs growth will be in Oil and Gas Operations with an undersupply of appropriately skilled workers, particularly technical and trades, in the second half of this decade.³¹

Activity levels in construction are subdued but showing signs of recovery, which may boost demand for engineering trade workers to a small extent. Although the value of annual civil construction activity in Western Australia is set to fall by about \$10 billion between 2013-14 and 2016-17, the total sum of construction work done in Western Australia over that period is estimated at \$170 billion.³²

The recent challenges related to finding suitably qualified and skilled engineering trades workers are likely to continue into the foreseeable future. Even though the data shows an overall easing in areas of skill shortage and greater availability of tradespersons for vacant positions, the research suggests that there is a skills deficiency, particularly specialised skills, and a lack of quality in the general engineering skills base.

In relation to the industry investment in apprenticeships, the research suggests that:

- The number of apprentices being trained is too low and at a level that will not sustain the future, locally trained skills base;
- The apprenticeship model is inadequate in coping with the highs and lows of the business cycle;
- The need to refocus on certain trade areas, particularly specialised welding, and consider the strengthening of welder certification requirements;

³¹ *Resources sector skill needs*, Australian Government Australian Workforce and Productivity Agency, December 2013

³² *WA Business News – Engineering construction set to fall* – Michael Ramsey, 14 April 2014

- There is support for a direct entry apprenticeship to a higher level skills pathway such as the Certificate IV in Engineering; and
- Greater emphasis should be placed on continuous improvement of skills both during the apprenticeship and once trade status is achieved.

There would be great value in further work focused on:

- a. the overall quality of engineering trade skills in this state,
- b. the reasons why specialist skills such as pipefitting and higher level welding are in short supply, and
- c. what could be done to deliver a rapid skills development response during times of strong demand.

5. AUTOMOTIVE TRADES



5.1 Overview

The strong Western Australian economy and population growth in recent years has not translated into boom times for the automotive industry with total industry employment of 37,018 people in 2012-13, down 970 over the previous year.³³

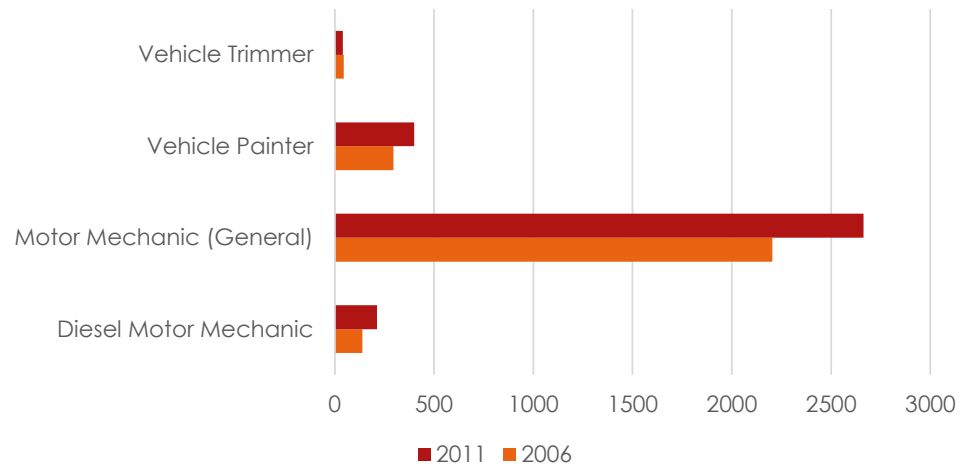
The industry has also been hit by the slowdown in the resources sector with a marked decline in commercial truck sales and servicing activity together with a decline in trend sales of new motor vehicles.³⁴

For the particular trades in focus, ABS census data indicates minimal growth over the 5 year period 2006 to 2011, shown in Figure 11.

³³ *Automotive Environmental Scan 2014*, Auto Skills Australia

³⁴ As above

Figure 11 - Automotive Trades Workers: Comparative Population (ABS Census 2006 and 2011)



Taking the four trades as a whole, the number of automotive trades workers increased by 3 per cent, well below the overall population growth of Western Australia for the same period. This may be explained by the fact that business closures in Western Australia are increasing, particularly in the repair and maintenance sector, with 90 per cent of closures being sole proprietor businesses with no employees. Automotive body, paint and interior repair businesses are closing in greatest numbers and these numbers are expected to escalate.³⁵

Table 8 provides the detail about what has happened in the individual trades and it is evident that at least two of those trades may need further consideration.

Table 8 - ABS Census Data - Automotive Trades Workers (ANZSCO)

Trade	2006	2011	% shift
Motor Mechanic (General)	7,985	8,115	2%
Diesel Motor Mechanic	524	623	16%
Vehicle Trimmer	216	201	-7%
Vehicle Painter	1,049	1,172	10%
Total	9,774	10,111	3%

³⁵ Automotive Environmental Scan 2014, Auto Skills Australia

Motor Mechanic (General) – Clearly, numbers of general motor mechanics have increased only minimally, and it is questionable whether the 2% growth between 2006 and 2011 was sufficient to meet demand. Apprentice numbers since then have remained relatively stable, with a very slight decrease from 2012 to 2013. Looking at the 457 visa data, it appears that employers are increasingly turning overseas to meet their labour force requirements for this trade.

Vehicle Trimmer – there are relatively few people employed in this occupation, and the numbers declined between 2006 and 2011. It appears that this is a niche occupation, which given the already low levels of tradespersons, may be at risk.

5.2 Skills shortages and trade skill requirements

...skills shortages in the automotive trades have abated, though some still exist in specialist areas...employment and skills needs are changing

The move to the production phase of the mining cycle requires fewer workers on site, resulting in many of the automotive trade workers, recruited for their generic skills base, returning to metropolitan Western Australia and increasing the pool of workers available in the automotive cluster.³⁶

This means skills shortages in the automotive trades have largely abated in the past year with most occupations within the automotive trades moving from shortage to no shortage, and most employers being able to fill their advertised vacancies.³⁷ There is still, however, a critical skills shortage for diesel mechanics with the demand and shortage expected to increase over the next 12 months.

³⁶ Labour Market Research – Automotive Trades Western Australia September 2013, Australian Government, Labour Economics Office Western Australia, Department of Employment

³⁷ As above

Table 9 - Automotive Trades Labour Market Status

3211-11 Automotive Electrician	
Labour Market Status 2012: No shortage	Labour Market Status Sept 2013: Shortage
% of vacancies filled: 92% within 4 weeks	No. of applicants per vacancy: 10 with 3 considered suitable
Occupation in demand for WA skilled migration: Yes – Schedule 1	SPOL category: Priority 1
Issues: Increase of app 3.5% in vehicle registrations in 2012-13 – slowdown in resources sector increased pool	
3212-11 Motor Mechanic (General)	
Labour Market Status 2012: No shortage	Labour Market Status Sept 2013: Shortage
% of vacancies filled: 82% within 4 weeks	No. of applicants per vacancy: 14 with 4 considered suitable
Occupation in demand for WA skilled migration: No	SPOL category: Priority 3
Issues: Some applicants had unreasonable pay expectations. Servicing competition from dealerships affecting small businesses	
3241-11 Panelbeater	
Labour Market Status 2012: Shortage	Labour Market Status Sept 2013: Shortage
% of vacancies filled: 63% within 4 weeks	No. of applicants per vacancy: 5 with 1 considered suitable
Occupation in demand for WA skilled migration: Yes – Schedule 1	SPOL category: Priority 1
Issues: About 17% received no applications. Some applicants had unreasonable pay expectations. Negative perceptions of the work involved	

3243-11 Vehicle Painter	
Labour Market Status 2012: No shortage	Labour Market Status Sept 2013: No shortage
% of vacancies filled: 80% within 4 weeks	No. of applicants per vacancy: 9 with 2 considered suitable
Occupation in demand for WA skilled migration: Yes – Schedule 1	SPOL category: Priority 1
Issues: Some applicants lacked work ethic and experience. Others had unrealistic pay expectations. WA demand relatively stable over past two years, possibly due to 5.5% decrease in accidents.	

Source: Information Sheets Automotive Electrician, ANZSCO 3212-11 Motor Mechanic (General), ANZSCO 2341-11 Panel Beater, ANZSCO 3243-11 Vehicle Painter, Australian Government, Labour Economics Office Western Australia, Department of Employment, September 2013, *State priority occupation list (combined list) August 2013*, Government of Western Australia, Department of Training and Workforce Development, *Western Australian skilled migration occupation list 2013-2014*, Government of Western Australia Department of Migration

Table 9 provides a summary analysis of automotive trades labour market research published by the Department of Employment along with information drawn from the skilled migration list. The analysis shows that, some of the automotive trades have shifted from a status of 'no shortage' to 'shortage' in the 12 months to September 2013.

Both the labour market data and the skilled migration list report at six digit ANZSCO level, which does not capture the level of specialised and higher level skills that employers are saying they need. It is possible that ANZSCO, as it currently works, is not the most suitable mechanism for identifying and reporting skills shortages, particularly where advanced and specialised skills are required.

The misalignment of the ANZSCO classifications with the nomenclature used by employers to describe trade positions created problems during the research phase of the project (an issue already highlighted in the engineering skills section of this report).

Qualified and experienced tradespersons with the specific skills required by employers are still in short supply, despite the fact that there are now many more applicants for jobs. Employers are saying that while there are qualified tradespersons, their skills are low calibre.³⁸

In 2013, Automotive Skills Queensland undertook a workforce development project focused on heavy automotive skills. The project report³⁹ identified shortages in a range of heavy automotive occupations across Australia, many of which crossed into the engineering trades. However, the specialised nature of the skills required was not fully identified or discussed.

Findings from the Queensland project that are similar to the Western Australian experience include:

- given a choice, employers would prefer to employ local workers over 457 visa holders;
- in the key heavy automotive occupations there is a 'very small pool of skilled people'⁴⁰; and
- employer concerns about the capacity of the training system to 'match new equipment models and technology'.⁴¹

The fact that the Queensland Government invested in this specialised workforce development project shows how important these trades are to the economy of resource based states.



³⁸ *Automotive Environmental Scan 2014*, Auto Skills Australia,

³⁹ *Heavy Automotive Skills: Moving earth with the right people*, Automotive Skills Queensland, May 2013

⁴⁰ *Heavy Automotive Skills: Moving earth with the right people*, Automotive Skills Queensland, May 2013, p23

⁴¹ As above, p22

When asked whether they were experiencing problems recruiting suitably qualified tradespersons, more than 60 per cent of respondents in the EATC Skills Requirement Survey answered 'yes'.

Employer comments indicate that they are still mindful of and reflecting on their experiences in the recent past, at the height of the mining boom. However, respondents also mentioned:

- A lack of broad-based, general trade skills or a narrow range of skills;
- Poor training and skills, and unsuitable applicants;
- Difficulties in finding a good tradesperson and/or dealer trained technicians;
- A misalignment between what tradespersons expect to be paid and their skill levels; and
- The challenges of attracting good staff to the regions.

Almost all respondents, 89 per cent, replied that they would use post-trade training. It is interesting that employer support for post-trade training is so much higher for the automotive trades, compared to feedback from employers of engineering trades. In focus group discussions employers reported a need for more specialised training, and expressed the view that employers tended not to invest in post-trade training due to the risks associated with losing higher skilled staff to other employers in the industry.

“Post-trade training isn't seen as a priority – many don't think they need any further training and if they do, the employer will pay.”

Despite strong industry support for higher level and specialised training, there is little evidence of it occurring. Data provided by the Department of Training and Workforce Development, related to part-time enrolments in the Certificate IV in Automotive Technology (AUR40205 and AUR40208), shows 3,000 hours of delivery in 2013, which is negligible. Approximately half of that delivery was in generic, non-specialised units.

It appears that there is a severe lack of higher and specialised training in the VET system – it may be falling back to employers to fill this gap.

“Industry has to say a Certificate IV is useful to them and say it's worth doing and the industry has to market the good result.”

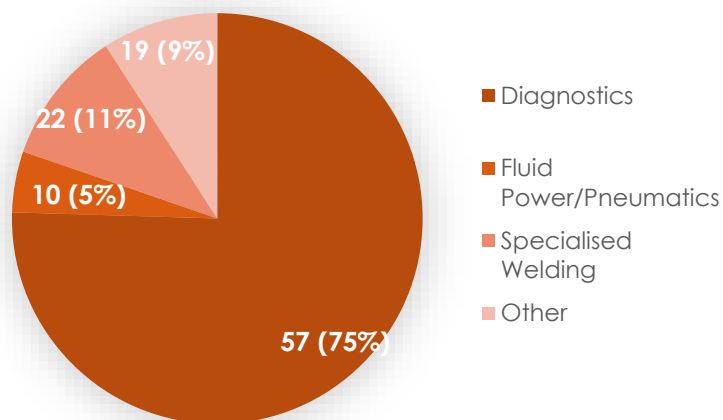
“The Certificate IV needs to be recognised as attracting higher wages and status.”

An overwhelming majority of survey respondents indicated a need for diagnostic skills, when asked about requirements for specific skills. Figure 12 shows the identified skill requirements, noting that a number of respondents chose more than one specific skill. In some instances, other skills were identified as follows (and in order of frequency):

- Basic/practical skills;
- Automotive electrical and electronics;
- Airconditioning;
- Hybrid vehicles; and

Other individual requirements such as overhauling; panel beating; skills associated with different marques; new service requirements for cars; and mechanical skills.

Figure 12 - Employer Identified Automotive Skill Requirements



A common theme in the focus groups was an additional requirement for either mechanics who can also do automotive electrical work, or a new role for people with both mechanical and automotive electrical skills. The increasing use of technology in vehicles, particularly in commercial and agricultural machinery, has led to a significant change in the skill set required to maintain and repair these vehicles. Representatives of both the agricultural and mining sectors in the focus groups identified a need for mechanics with automotive electrical training or vice versa.

“We need people with four discrete skills: mechanics, hydraulics, electric, electronics. We can accept people skilled in 2 or 3 skills and train them in others, but we can't accept anyone with only one skill.”

Recommendation 8

Identify and introduce mechanisms to capture automotive electrical/electronic skills within the automotive trades.

Employers in the regular Department of Employment 'Survey of Employers who have Recently Advertised' commented that despite receiving multiple applications from trade qualified applicants, they were still getting a number of unsuitable applicants. Employers considered applicants unsuitable because they had:

- unrealistic remuneration expectations and some issues with work ethic;
- lack of required specialist skills;
- no recent experience working in their trade because of having worked in the mining industry using skills outside the mainstream tasks common to their trade;
- lack of additional certificates or licenses required, eg police clearance; or
- lack of 'soft skills' such as workplace communication.⁴²

⁴² Labour Market Research – Automotive Trades Workers, September 2013, Australian Government, Labour Economics Office Western Australia, Department of Employment

Similar comments were reflected in the EATC Skills Requirement survey in both the on-line and face-to-face surveys and in the focus groups.

The demand for skills and labour in the automotive trades is driven by the traditional mechanical retail sector and the transport industry. Although there has been a decline in the motor vehicle retailing sector, the 2013 ABS Motor Vehicle Census shows Western Australia had the second largest growth (17.3 per cent) rate for vehicle registrations. The annual average increase was 3.4 per cent over the five year period of 2008 to 2013.⁴³

The drop in demand for skills and labour may be attributed to the modest decrease (about 4.7 per cent) in the number of motor vehicle accidents in the state between January to September 2012 and 2013 compared to the same months in 2011 and 2012⁴⁴ and improvements in motor vehicle paint technology and paint protection products.⁴⁵

5.3 Overseas workers

By comparison to the relatively modest growth in the overall numbers of automotive trades workers, the numbers of overseas born workers increased considerably compared to those who were Australian born, as can be seen in the following table.

While the numbers of overseas born diesel mechanics and vehicle painters grew quite dramatically between the census dates, overseas born vehicle trimmers decreased at an even higher rate than the Australian born workforce, and has contributed to the overall reduction in workers noted earlier.

⁴³ As above

⁴⁴ As above

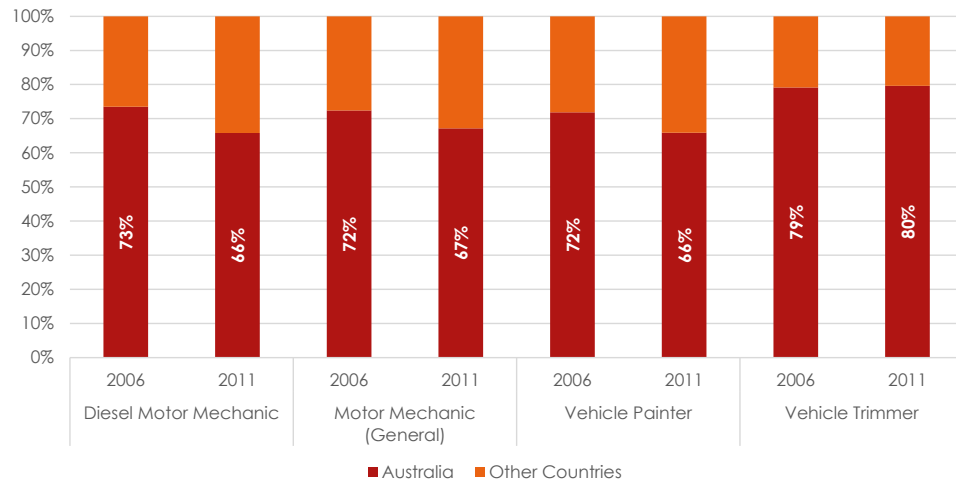
⁴⁵ ANZSCO 3243-11 *Vehicle Painter Western Australia September 2013*, Australian Government, Labour Economics Office Western Australia, Department of Employment

Table 10 - Automotive Trades Workers by Country of Origin

Auto Trades	Census Year 2006	Census Year 2011	% Growth
Diesel Motor Mechanic	524	623	15.9%
Australia	385	410	6.1%
Other Countries	139	213	34.7%
Motor Mechanic (General)	7,985	8,115	1.6%
Australia	5,780	5,452	-6.0%
Other Countries	2,205	2,663	17.2%
Vehicle Painter	1,049	1,172	10.5%
Australia	754	772	2.3%
Other Countries	295	400	26.3%
Vehicle Trimmer	216	201	-7.5%
Australia	171	160	-6.9%
Other Countries	45	41	-9.8%
Grand Total	9,774	10,111	3.3%

Worth noting is the reduction in real terms of the number of Australian born motor mechanics. Fortunately, the overseas born trades workers grew by over 17 per cent, which served to at least maintain the total numbers of motor mechanics working in WA. However, the growth in this trade is comparatively lower than levels seen for diesel mechanics and vehicle painters.

Figure 13 - Automotive Trades Workers – Comparative Population at ABS Census 2006 and 2011



Again, it is important to be mindful of the fact that many overseas born workers have been here for a number of years and may be Australian citizens or permanent residents.

The following figures are drawn from the 2006 and 2011 ABS Census and show the dates of arrival of overseas born automotive trades workers.

Figure 14 - Overseas Born Automotive Trades Workers by Year of Arrival (2006 ABS Census)

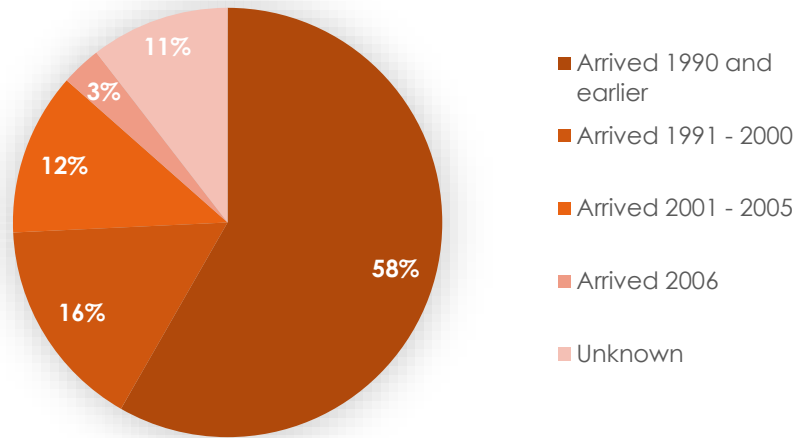
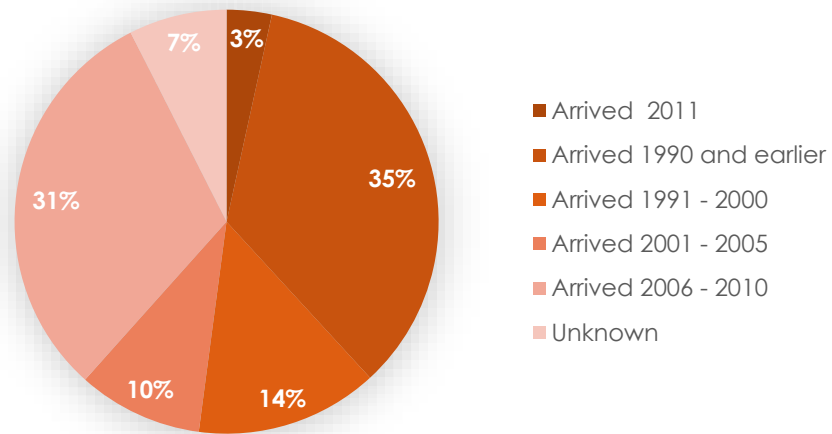


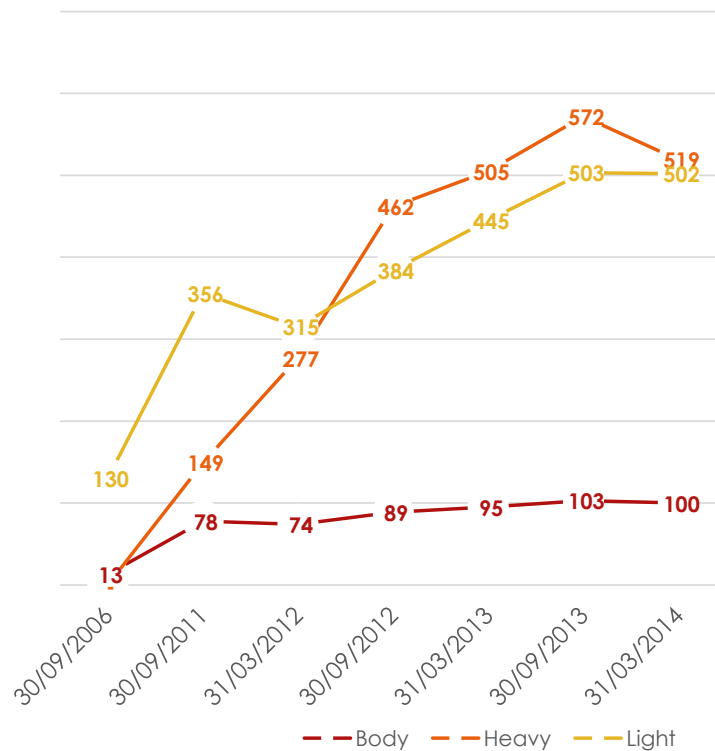
Figure 15 - Overseas Born Automotive Trades Workers by Year of Arrival (2011 ABS Census)



Consistent with trends in the engineering sector, the share of overseas born workers who arrived in the past 5 years grew from 12 per cent in 2006 to 31 per cent in 2011. Without this growth the automotive trades would most likely have suffered a real reduction in the number of workers.

Figures from the Department of Immigration and Border Protection website, suggest that the number of 457 visa holders in automotive trades occupations continued increasing right through until late 2013. Notably, 457 visa holders in the motor mechanics (general) occupational category have held steady for the first quarter of 2014. Comparing the ABS census and the 457 visa data sets indicates that approximately 70 per cent of the growth in overseas born workers can be attributable to 457 visa holders. Figures for 457 visa holders in the vehicle trimmer category are not included because the intakes have been quite low (less than 10) and until 2012 were not specified.

Figure 16 - 457 Visa Holder Numbers Working in WA in Select Automotive Trades Occupations



Over the period between the 2006 and 2011 ABS census there was a shift in the countries of origin of overseas born workers (captured in table 11), possibly as a result of the significant increases in 457 visa holders. Proportionally, and in real terms, the growth in workers from the Philippines is notable, particularly given the increased levels growth in numbers of 457 visa holders, after 2011. Trades workers from India and Ireland also grew to a remarkable extent.

Table 11 - Overseas Born Automotive Trades Workers – Top 10 Countries of Origin (2011)

Country of Origin	Census Year 2006	Census Year 2011	Growth
England	913	965	5%
New Zealand	339	432	22%
Philippines	30	272	89%
South Africa	126	197	36%
Scotland	99	113	12%
Italy	118	98	-20%
Zimbabwe	75	91	18%
India	37	87	57%
Malaysia	72	69	-4%
Ireland	39	65	40%
Other countries	653	796	18%
Unknown	183	132	-39%
Grand Total	2,684	3,317	19%

Based on ABS census data

A little over half the employers responding to the skills requirement survey have had experience with overseas workers, which is interesting within the context of the proportion of the workforce who are overseas born and/or hold 457 visas. Employers' experiences with their overseas workers varied and, like the engineering sector, their preference for local workers.

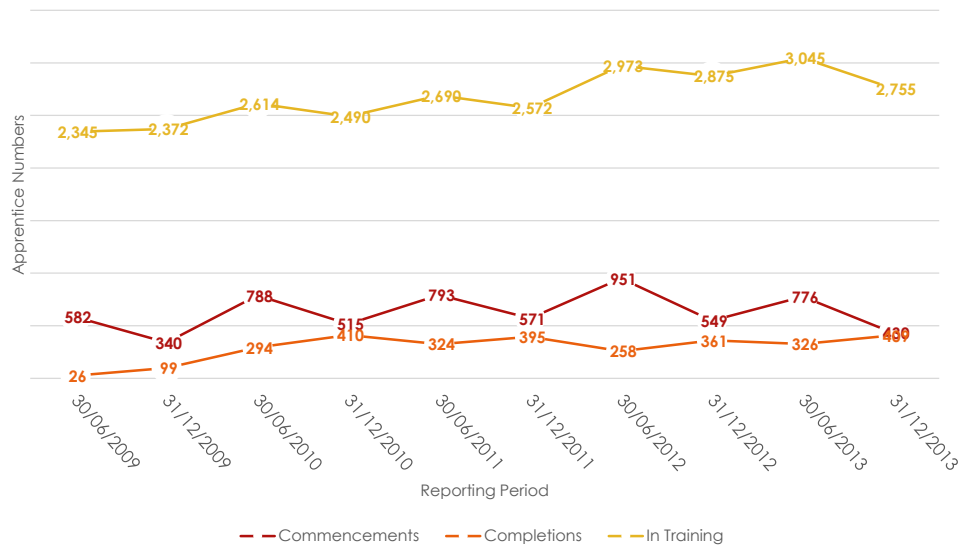
Table 12 - Automotive Employer Perceptions of Comparative Skill Levels

Overseas Trained Perceived As...	Count	Comments
Better	31	Overseas trained have better skills and attitude; better on European vehicles; standards/skills are higher from nominated countries; better now that I go overseas to interview the tradespersons myself.
Same	48	It depends or varies according to the individual; it depends on the country of origin; some are good, some are bad, like those trained in Australia; they generally have a better work ethic; their experience is better but their skills are poorer
Worse	19	Overseas trained need more supervision; bad experience with 457 visa holders – never again; better work ethic but skills not as good
Not applicable	97	

5.4 Automotive Trades Apprentices

Apprentice commencements and numbers in training are starting to decline, consistent with the broader labour market trends. This does not augur well for the future supply of trained tradespersons and is particularly acute in the heavy automotive trades. Figure 17 has been derived from apprenticeship data provided by the Department of Training and Workforce Development.

Figure 17 - Automotive Trades Apprentices – Trend Data 2009 to 2013



While automotive apprentice numbers have declined from 2012 to 2013, the reduction, which sits at approximately 20 per cent, is not quite as steep as that showing for the engineering trades.

More detailed information about the trends in each of the individual trades is included at Appendix D. Taking each of the trade areas individually it is apparent that:

- The sharpest decline seems to have been in heavy automotive trades apprentices, where commencements fell by approximately 40 per cent from December 2012 to December 2013. This is consistent with the slowdown of major resource construction activity.

- The reduction in light automotive trades is not as sharp as can be seen in many other trades.
- In both panel beater and vehicle painter trades, there was a reasonably sharp decline in numbers from 2011 to 2012 but the decline steadied out to some degree in 2013.

According to the ACIL Allen Consulting report apprenticeship completions across all automotive trades (ANZSCO 321) are significantly lower than those of the engineering trades, and are estimated at 58.4 per cent.⁴⁶ If this trend holds true for the automotive trades in Western Australia, it would mean that more than 40 per cent of commencing apprentices do not finish. Further, while the decline in commencements is not as intense as that witnessed in the engineering trades, the fact that non-completions are so much higher for automotive apprentices could compound skills shortages in select trades.

Ongoing employer engagement with the apprenticeship system is mixed. Overall, the trend is quite stable for employers of heavy automotive tradespersons. However, in the light automotive and vehicle body apprenticeships, where there is a much greater loading towards smaller employers, there appears to be a significant drop in the numbers of employers with apprentices, as indicated in the following table.

Table 13 – Employers of Automotive Apprentices by Employer Size

Year	Auto Tech (Heavy)			Auto Tech (Light)			Vehicle Body		
	Large	Medium	Small	Large	Medium	Small	Large	Medium	Small
2009	117	76	98	60	73	372	20	36	235
2010	146	76	107	58	73	366	20	30	242
2011	159	84	114	63	68	361	21	34	243
2012	187	99	128	71	68	377	17	32	207
2013	216	114	125	78	81	371	20	31	190

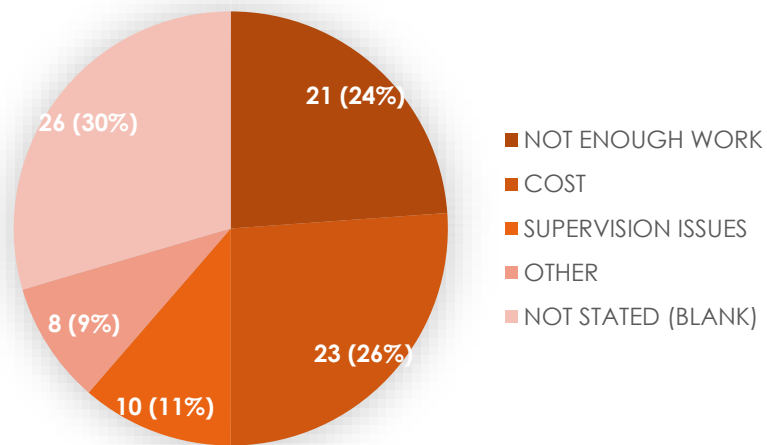
Based on data provided by the Department of Training and Workforce Development

“One of the largest employers of apprentices in the state had no intake this year. Only 2 mining companies put on apprentices this year, everyone else is down.”

⁴⁶ Review of Qualification Completions in Engineering Trades Apprenticeships, ACIL Allen Consulting, 2013, p17

When canvassed in the EATC Skills Requirement Survey as to whether or not they currently employ apprentices, 62 per cent of respondents answered in the affirmative. Those who did not have apprentices were asked to identify the factors that influenced their decision. Interestingly, a number of respondents chose more than one reason and many also took the time to provide additional information to explain their decision. The following chart summarises reasons given for not employing apprentices.

Figure 18 - Reasons for not Employing Automotive Apprentices



The cost of employing apprentices and not having enough work were the major factors influencing the non-employment of apprentices. However, analysis of the comments provided by respondents (including some who do employ apprentices) reveals that employers are also concerned about:

- Not being able to find a suitable person and/or the quality of applicants for apprenticeships;
- A lack of alignment between the business need and the apprenticeship system. The issues here ranged from the business being too small; the owner not being qualified; only wanting mature and experienced staff; contractors not wanting to work with apprentices; or having a limited range of work
- The attitudes and expectations of young people;

- Bad experiences with apprentices in the past, such as apprentices leaving or being too much trouble; and
- Other factors, such as the amount of red tape or employer obligations.

“Money is not the issue, it is more important to get the right person”

“Apprentice attitude is important”

“When we advertise for an apprentice position, it is surprising how many people from other industries apply (70% of applicants in one instance). This indicates poor decision making on the part of the apprentices. Many have no mechanical aptitude at all.”

Employers in the focus groups felt an aptitude test would be useful to help identify whether prospective apprentices were likely to be compatible with the trade and complete the training, as well as establishing literacy and numeracy levels.

The difficulty in keeping up with technological change was also discussed, with comments that it was hard to get technicians to undertake further training. Employers are reluctant to invest in training because highly skilled employees tended to get poached. It was felt there is a need to see the trades as a profession that involves keeping up with skills and developments in the industry. This also needs to be reflected in the standard of training and trainers.

There has been a move in recent times to specialise and segregate automotive skills in the apprenticeship program and this was supported by employers in the focus groups, although they reported that there were insufficient registered training organisations with access to the new technologies. Given, the rapid rate and complexity of technological change across the industry, and such great diversity in marques, employers recognised that no single RTO could be expected to meet their ever-changing needs.

“The agricultural automotive sector has evolved such that it has outstripped the ability of the VET sector to serve its needs.”

There are 64 different marques across manufacturers and models, which require knowledge and skills specific to each marque. Employers recognised that Certificate II level training provides the core and generic skills needed to work in the industry and that this could be delivered off the job. Given that no RTO has the capacity to deliver the more specialised and marque specific knowledge, this would be better delivered fully on the job at Certificate III level. The apprenticeship would thus be achieved after specialised on the job training more specific to employer requirements.

A Certificate IV apprenticeship is seen as a useful option. Training at this level is currently done in the individual's own time and after hours. A Certificate IV apprenticeship would give employers who want broader skills the option of enrolling an apprentice into a higher qualification on commencement of the apprenticeship, as already happens in other states. It may also be possible to allow employers and individual Certificate III holders access to specific units to reach the Certificate IV outcome for trade upskilling purposes.

Some employers in the focus groups also commented on the need for flexible training that most RTOs were unable to deliver such flexibility. There needs to be a genuine partnership between the employer and the RTO.

Recommendation 9

Review the current automotive apprenticeship pathways to capture intakes at Certificate levels II, III and IV, thereby more appropriately responding to industry requirements.

5.5 Future requirements

...employers have expressed concern about future supply of skilled workers, given the low levels of training...the automotive industry is undergoing significant change and there are questions about the capacity of the training and qualifications frameworks to reflect that change

The Automotive Environmental Scan notes the potential for further skills shortages down the track, in view of:

- a rapidly aging workforce;
- low levels of apprentice employment; and
- signals that over the next 12 months even fewer employers intend to hire an apprentice⁴⁷.

The situation could be exacerbated by what some employers believe the automotive trades have an 'image' problem, with perceptions of working conditions being difficult and dirty, making it challenging to attract people to these trades.⁴⁸

Results from the EATC skills requirement survey, show that there is a higher proportion of employers (62 per cent) engaged with the apprenticeship system in Western Australia than the national Automotive Environmental Scan would indicate. However, employers here reported similar issues and the decline in apprenticeship numbers signals that future skills shortages, as predicted nationally, are also likely in Western Australia across all of the automotive trades that have been the focus of this report.

⁴⁷ *Automotive Environmental Scan 2014*, Auto Skills Australia

⁴⁸ *Labour Market Research – Automotive Trades Workers, September 2013*, Australian Government, Labour Economics Office Western Australia, Department of Employment

Some employers expressed concern about future supply of skilled workers, given the low levels of training. The new supply of automotive trades workers to the labour market has been constrained by a plateau in apprenticeship and traineeship completions in recent years.⁴⁹ Fewer employers taking on apprentices and a significant decline in the Australian born workforce, present considerable challenges to the automotive industry. It is not clear at this stage how these challenges will be resolved.

The Australian Motor Industry Federation, in its *An Industry at Crossroads* paper highlights the fact that the automotive industry is undergoing significant and ongoing change and questions the capacity of the training and qualifications frameworks to reflect that change.⁵⁰ Some of these changes are technologically driven, while others relate to societal factors and industry restructuring. The federation has identified education, training and skills development as having an important role in helping the industry to adapt.

The 2014 Automotive Environmental Scan Survey of 550 automotive businesses Australia-wide found variable business conditions across most automotive sectors.

The key issues facing automotive businesses in order of magnitude were:

- maintaining profitability;
- economic conditions;
- government policy/regulation; and
- technological change.⁵¹

Concerns about technological change focused on access to OEM repair and servicing information which businesses report is controlled through OEM dealership networks. This affects many independent and unincorporated service and repair businesses.

⁴⁹ *Automotive Environmental Scan 2014*, Auto Skills Australia

⁵⁰ *An Industry at Crossroads, Automotive 2018*, Australian Motor Industry Federation

⁵¹ As above

Key labour issues, in order of importance, were:

- attracting skilled workers;
- achieving productivity improvements with current staff and skills base; and
- workforce retention and skills utilisation⁵².

There has been rationalisation in the Automotive Repair and Maintenance industry over the past decade with the closure or consolidation of some smaller motor vehicle repair workshops, a large decline in service station based workshops and the growth of generalist and specialist chains and franchised repairers and dealer-associated workshops.⁵³

The EATC Skills Requirement Survey responses identified business downturn and technological change as the major issues in relation to employing either qualified tradespersons or apprentices.

“It is patchy at the moment. Some businesses are doing well, such as commercial vehicles, heavy on-road vehicles, 4 wheel drive and recreational vehicles, but it is very variable outside those areas. Optimism is low at the moment.”

⁵² As above

⁵³ As above

6. CONCLUSION AND RECOMMENDATIONS

Evidence collected during the project highlights serious concerns about the range, specialisation and quality of skills in the nominated trades. Problems with apprenticeship training were also identified.

Although these skills and apprenticeship difficulties are causing recruitment and retention issues, and associated operational difficulties for employers, the scale of these problems is tempered by the slowing down of business activity, particularly associated with the completion of major engineering construction projects.

The recommendations provided are focused on alleviating the effects of the current skills and apprenticeship dilemmas on the future skills base. Without action, the state is likely to experience a significant skill shortage in certain engineering and automotive trades and a continuing decline in the overall quality of locally trained tradespersons.

Lack of quality and shortage of skills will not just affect future major resource construction projects, but will extend to the general engineering and automotive workforce. There are already signs that employer's involved in general manufacturing, maintenance, servicing and construction are finding it hard to recruit the range, type and quality of skills they require.

The project has identified a gap in local skills development in both apprenticeships and up-skilling of existing workers. There is also an over-reliance on skilled overseas labour that has the potential to adversely affect local skills development.

Recruiting skills from other states and other countries has been an integral part of the state's engineering and automotive labour market and will continue to be an important part of the skills mix.

Apprenticeship commencements have dropped significantly in the nominated trades, in some cases to lower than during the global financial crisis in 2009, which does not augur well for the future of local skills development. This is compounded by an unacceptably high non-completion rate for engineering and automotive apprenticeships of around 35 and 40 per cent respectively.

Employers report being unable to find tradespersons with the range of necessary skills, which has affected the capacity of business to provide the trade supervision required for apprenticeships. In many of the companies surveyed, a significant reduction in the number of employed tradespersons had affected the capacity of the business to offer apprenticeship places. Employers also noted that sourcing tradespersons from new overseas labour markets has resulted in cultural and communications difficulties.

The level of ongoing training in higher skills seems to be very low. There seems to be minimal interest in up-skilling within the trade population which may be affecting overall skill development. Finally, employers state that the quality of applicants for apprenticeship positions is low and this contributes to poor quality outcomes and the high non-completion rate.

While there is a commonality associated with the skills and apprenticeship issues in the automotive and engineering trades there are differences that need to be considered.

The strong demand for skilled labour to support resource sector expansion affected both sectors, but the engineering sector felt the biggest impact. Tradespersons who have been employed on resource projects for any period of time are often unable to demonstrate the broader range and higher quality of skills required for general trade work when they return to the general workforce.

For both mechanical and fabrication trades, most engineering construction work is routine, repetitive and does not require the broader trade skills needed in general jobbing, manufacturing, maintenance and servicing work. This is not to suggest that engineering construction projects do not need highly skilled tradespersons, only that the range and application of skills is different from those required in the general engineering trade workforce.

Specific skills demanded on construction projects and in the mainstream trade area, such as fabrication pipe work and specialised welding, appear to be in short supply and depend too much on the use of overseas labour. Training of local people in these specific skill areas – at both the apprenticeship and post-trade levels – appears to be minimal. Employers specified a need to re-focus specialised welding training and to encourage use of Australian Standard 1796 – Welder Certification within apprenticeship and post-trade training.

The project has identified a need for a broader skills base and higher skill sets for both apprenticeships and trade up-skilling. There is also a demand for direct entry to a Certificate IV in Engineering for mechanical and fabrication apprentices. Such a program currently exists for electrical/instrumentation apprentices and should be available for other engineering trade areas.

A greater focus is needed on the up-skilling of existing tradespersons in higher level mechanical and fabrication skills. Although there is some public investment in Certificate IV in Engineering outcomes for existing tradespersons, the level of enrolment is low, particularly in relation to specialised welding, pipe-fitting and a range of mechanical skill areas.

The actual training and development needs for the engineering and automotive trades are sufficiently divergent to warrant different entry level training models.

Employer feedback points to the desirability of moving away from a 'one size fits all' apprenticeship system to one that:

- a. accommodates multiple models,
- b. enables ongoing, higher level and specialised skills development,
- c. is customised to the unique requirements of identified trade or industry areas, and
- d. is able to support a rapid response to emerging skill demand.

The automotive sector is undergoing significant structural change. The data indicates a contracting workforce in relation to the state's overall population and an increasing dependence on skilled migration to fill gaps in the general trades workforce. At the same time, rapid technological change is moving ahead of the apprenticeship training on offer and the increase in the number of brands and models is driving a move to greater skill specialisation.

Employers surveyed for the project were clear that the skills required to service many automotive proprietary brands and models cannot be addressed within the current Certificate III apprenticeship, suggesting that many of the core level skills could be developed at Certificate II level.

Under such an approach, the generic skills required at the apprenticeship level could be provided through training to the Certificate II level under current on-the-job and off-the-job arrangements, while the Certificate III outcome should be completed fully on-the-job. This alternative apprenticeship model would deliver basic core skill sets and enable the development of workplace skills aligned to specific models and brands.

Automotive employers also reported that consideration needs to be given to developing a new trade occupation and apprenticeship combining automotive mechanic and electrician skills. Apprentices in this program would get direct entry to a Certificate IV. This arrangement would address some of the problems currently being encountered in the mining and agricultural sectors where they have to allocate two different trades to service and repair complex computerised civil and agricultural machinery.

In the engineering sector, recruiting and training apprentices now to ensure skills are available in the near future for both general trade activity and for new engineering construction projects is critical.

The decline in numbers and the high attrition rates for engineering apprentices will undermine the supply of skilled tradespersons. Employers are keenly aware of this likelihood but feel constrained by the existing apprenticeship model that requires access to real work, qualified tradespersons to provide workplace supervision and a commitment to a four year training contract.

The reality is that the current apprenticeship model is unable to guarantee local engineering skills development during low points in the business cycle. Low levels of business require less tradespersons and this nearly always results in lower investment in apprentice training – as is the case currently.

Although the engineering and automotive sectors have suggested different approaches, employers from both sectors are interested in the same outcome – how to ensure that there is a sufficient supply of high quality, skilled workers in the future.

6.1 Recommendations

1. Work with the relevant Government agencies on the most appropriate occupational classifications in the engineering and automotive trades to enable more effective data collection.
2. Define the issues associated with the existing apprenticeship model and develop alternative approaches (whilst maintaining the integrity of the apprenticeship system) to ensure the continued industry investment in the state's engineering and automotive skills base.

3. Strengthen involvement in career promotion and industry advice to the schools sector. Consider the suitability of materials available through the Australian Apprenticeships and Traineeships Information Service for prospective apprentice aptitude self-assessment.
4. Work with the Department of Training and Workforce Development and other stakeholders, to investigate the reasons for low level enrolments in key higher level skill units in the fabrication and mechanical trades, and determine how skill sets may contribute to improved participation rates.
5. Reposition welding as a full apprenticeship program, (including up to Certificate IV Advanced Welding), separate from the general heavy fabrication trade and train to the requirements of Certificate 1 to 9 under Australian Standard 1796 Certification of Welders.
6. Work towards the establishment of a direct entry Certificate IV apprenticeship program in the engineering trades.
7. Encourage continuous improvement by giving employers and individual Certificate III holders the option of accessing specific units to reach the Certificate IV outcome for trade up-skilling purposes in the engineering trades.
8. Identify and introduce mechanisms to capture automotive electrical/electronic skills within the automotive trades.
9. Review the current automotive apprenticeship pathways to capture intakes at Certificate levels II, III and IV, thereby more appropriately responding to industry requirements.

APPENDIX A – LITERATURE REVIEW SUMMARY

The following matrix encapsulates the most relevant findings from key source documents.

Source Document	Author
<i>A Revision of Skilling WA – A Workforce Development Plan for Western Australia, Discussion Paper 2, Skilled Migration – A Western Australia Perspective</i>	Department of Training and Workforce Development
Summary:	Discusses the impacts and importance of skilled migration in addressing skills shortages. Provides high level data on the numbers of migrant workers, including 457 visa holders, and sectors in which they were employed.
<i>An Industry at Crossroads, Automotive 2018</i>	Australian Motor Industry Federation
Summary:	Developed as a discussion paper to inform government and industry policy. Focuses on the retail, service, repair and recycling sectors of the automotive industries. Identifies three strategic priorities for those sectors.
<i>2014 Automotive Environmental Scan</i>	Auto Skills Australia
Summary:	Provides national and state level analysis related to the automotive workforce. Key issues include withdrawal of auto manufacturers, aging workforce, decrease in businesses, moderate employment growth projected.
<i>Engineering workforce study, June 2014</i>	Australian Workforce and Productivity Agency
Summary:	Prepared partially in response to a Senate standing committee report, provides an overview of the engineering workforce (including trades) nationally and globally and makes a series of recommendations to address perceived challenges.

<i>Heavy Automotive Skills: Moving earth with the right people,</i>	Automotive Skills Queensland, May 2013
Summary:	Recognising the importance of the heavy automotive industry to the Queensland's economy, explores the workforce development needs of that sector.
<i>Labour Market Research – Automotive Trades Workers Western Australia September 2013</i>	Australian Government Labour Economics Office Western Australia, Department of Employment
Summary:	Summarises key trends and issues in 6 automotive trades, including outcomes from a survey of vacancies. Some commentary on suitability of applicants' skills at individual trade level.
<i>Labour Market Research – Engineering Trades Western Australia September 2013</i>	Australian Government Labour Economics Office Western Australia, Department of Employment
Summary:	Summarises key trends and issues in 7 engineering trades, including outcomes from a survey of vacancies. Some commentary on suitability of applicants' skills at individual trade level.
<i>Review of Qualification Completions in Engineering Trades Apprenticeships,</i>	ACIL Allen Consulting, 2013
Summary:	Report on work commissioned by the Australian Workplace Productivity Agency looking at the factors related to apprentice non-completions in the engineering trades. Interesting findings about the impact of various apprentice, employer and qualification characteristics.
<i>State priority occupation list (combined list) August 2013</i>	Government of Western Australia, Department of Training and Workforce Development
Summary:	Lists identified skills shortage occupations in WA, which informs priorities for state government purchase of accredited training. All trades are priority one.

<i>Skill Shortages – Statistical Summary 2013</i>	Australian Government Labour Market Research and Analysis Branch, Department of Employment
Summary:	Identifies key issues re proportion of vacancies filled and average number of applicants per vacancy, 2008 to 2013, nationally and by State and Territory
<i>Skill Shortage List Western Australia 2013</i>	Australian Government, Department of Employment
Summary:	Shows occupations for which shortages or some recruitment difficulty is evident in Western Australia.
<i>The shortage of engineering and related employment skills 2012</i>	Senate Standing Committee on Education, Employment and Workplace Relations
Summary:	High level summary of the impact of skills shortages across the gamut of engineering occupations. Little of value in terms of the engineering and automotive trades labour markets. Notes poor completion rates in VET but relevance to the areas of focus for this project not apparent at this point
<i>Vacancy Report February 2014</i>	Australian Government Department of Employment
Summary:	Shows distribution of vacancies Australia and State-wide, including regional WA
<i>Western Australian Business Outlook, February 2014</i>	Deloitte Access Economics
Summary:	Summarises issues relating to WA's transition from mining construction to production and trends in WA's planned project investment
<i>Western Australian Government Submission to the Independent Review of Integrity in the Subclass 457 Programme</i>	Western Australian Department of Training and Workplace Development
Summary:	Provides feedback and input on issues relevant to Western Australia for consideration by the Commonwealth Government's independent review into issues on non-compliance and regulatory framework of the 457 visa program.

<i>State and Territory migration summary report, 31 December 2013</i>	Australian Government Department of Immigration and Border Protection
Summary:	Reports migration outcomes for 2013-14 to December 2013. Data provided at national, state, territory and regional level, including skilled migration numbers by visa categories, including 457. No data available at occupational level
<i>A Revision of Skilling WA – A Workforce Development Plan for Western Australia</i>	Government of Western Australia, Department of Training and Workforce Development
Summary:	Background paper and 5 discussion papers, looking at economic, policy, population, labour market and skilled migration trends in WA to inform a new state workforce development plan.
<i>State Training Plan 2014-2017</i>	Government of Western Australian, Department of Training and Workforce Development
Summary:	Comprehensive analysis of WA economy and labour market, occupations and qualifications, industry intelligence and wide range of other research reports. In contrast to senate report, notes importance of skilled migration to addressing skills shortages in WA.
<i>Crowding out: competition for skilled labour in WA</i>	ACIL Tasman
Summary:	A highly technical, econometric analysis of the impact of competition for skilled labour resulting from the resources boom.
<i>Prospect Magazine</i>	Western Australian Government Department of Mines and Petroleum and Department of State Development
Summary:	Provides an overview of WA resource projects that have commenced operations; committed projects; and projects under consideration

<p><i>Modular Fabrication in the Resources Sector in Western Australia: Current Practices and Strategies for Improvement</i></p>	<p>Report for the Department of Commerce and the Industry Capability Network, Dr Martin West</p>
<p>Summary:</p>	<p>Examines the impact of modular offsite construction for resource projects in WA</p>

APPENDIX B – EATC SURVEY AND FOCUS GROUPS

ENGINEERING & AUTOMOTIVE TRAINING COUNCIL INC.

Skills Requirement Survey

1. **ENGINEERING** What is your industry sector?

- Sheet Metal Fabrication
- Heavy Metal Fabrication
- General Engineering (Fitting and Machining)
- Marine Engineering
- Refrigeration/Air Conditioning
- Other Industry Sector

AUTOMOTIVE What is your industry sector?

- Light Vehicle
- Dealership
- Vehicle Body Repair
- Heavy Vehicle Repair (Road Transport)
- Auto Electrical
- Heavy Vehicle Mobile Equipment
- Motorcycle
- Other Industry Sector

2. Do you currently employ apprentices?

- Yes
- No

Comments

3. If no, what are the reasons for not employing apprentices?

- Not Enough Work
- Supervision issues
- Cost

4. Would you employ apprentices if the cost of wages and on-costs were subsidized or shared with other employers?

Yes

No

Comments

5. Are you currently experiencing problems recruiting tradespersons with the specific skills you require?

Yes

No

Comments

6. **ENGINEERING** Do you require specific skills in any of the following areas?

Fluid Power/Pneumatics

Diagnostics

Specialised Welding

CNC Machining

Other areas

AUTOMOTIVE Do you require specific skills in any of the following areas?

Fluid Power/Pneumatics

Diagnostics

Specialised Welding (if applicable)

Other areas

7. Would you utilise post-trade training in specific skill areas to up-skill existing tradespersons?

Yes

No

8. Do you currently employ or have you employed tradespersons trained overseas?

Yes

No

9. If yes, how do the skills of these overseas trained tradespersons compare with the skills of tradespersons that have completed an apprenticeship in Australia?
- Better
 - Same
 - Worse
- Comments

THANK YOU FOR COMPLETING THIS SURVEY

Engineering and Automotive Training Council

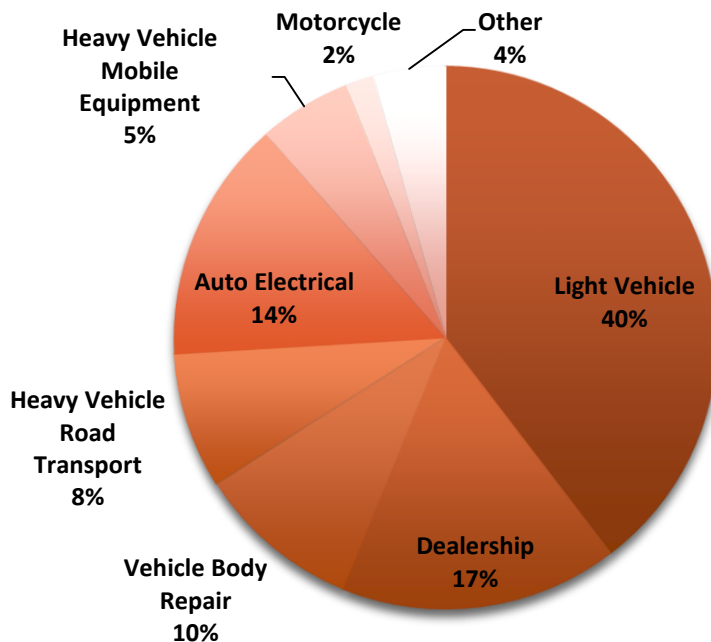
Skills Requirement Survey – June/July 2014 Report

1. AUTOMOTIVE SKILLS REQUIREMENTS

There were a total of 196 respondents. Forty were completed online and the remainder were surveyed via a face to face or telephone interview. Only the face to face or telephone surveys captured the respondents' location, with 40 percent, or 61 of 156 respondents, based in the regions.

The following chart shows the distribution of the sectors in which the respondents identified as operating. Almost 15 percent of businesses operate in more than one sector.

Chart Automotive Survey Respondents by Sector



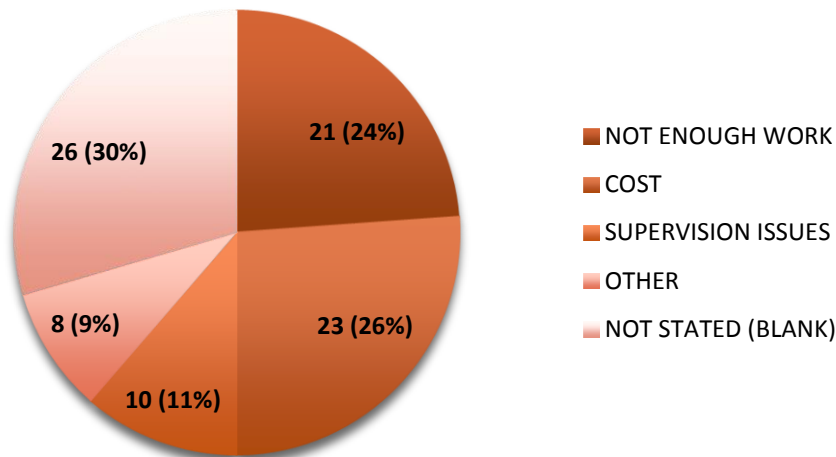
1.1 Employment of Apprentices

Sixty two per cent of respondents employed apprentices. The major factors identified for not employing apprentices were the cost and not having enough work. However, an analysis of the comments provided by respondents (including some who do employ apprentices) shows that employers are also concerned about:

- Not being able to find a suitable person and/or the quality of applicants for apprenticeships (11 employers made comments along these lines).
- A lack of alignment between the business need and the apprenticeship system. The issues here ranged from the business being too small, the owner not being qualified, only wanting mature and experience staff or contractors not wanting to work with apprentices, or having a limited range of work (10 employers commented).
- The attitudes and expectations of young people (7 employers commented).
- Bad experiences with apprentices in the past, such as apprentices leaving or being too much trouble (7 employers commented).
- Other individuals identified factors, such as the amount of red tape or employer obligations.

The following charts summarises the reasons respondents identified for not employing apprentices.

Chart - Reasons for not Employing Automotive Apprentices



Of those that answered the question “Would you employ apprentices if the cost of wages and on-costs were subsidised or shared with other employers?”, a substantial minority (45 percent of those who answered the question) indicated that it would not influence their decision. The following table summarises the answers to the question and the comments made by respondents.

Table - Sharing Automotive Apprentice Costs

Answer	No of Responses	Summary comments
Yes	104	Would employ anyway but extra assistance would help; depends on the system; but apprentice attitude is important; would help to employ an extra apprentice; perhaps government could meet costs of apprentices' holidays
No	86	Money is not the issue; it is more important to get the right person; the business is not big enough; the negative impact on productivity; apprentices' lack of customer focus and care for vehicles; wants better recognition of the investment made by the employer and greater incentives
Blank	6	

1.2 Automotive Trade Skill Requirements

When asked whether they were experiencing problems recruiting suitably qualified tradespersons, over 60 percent of respondents answered 'yes'. Some of the comments indicate that employers are reflecting their recent experiences during the mining boom. However, respondents also mentioned:

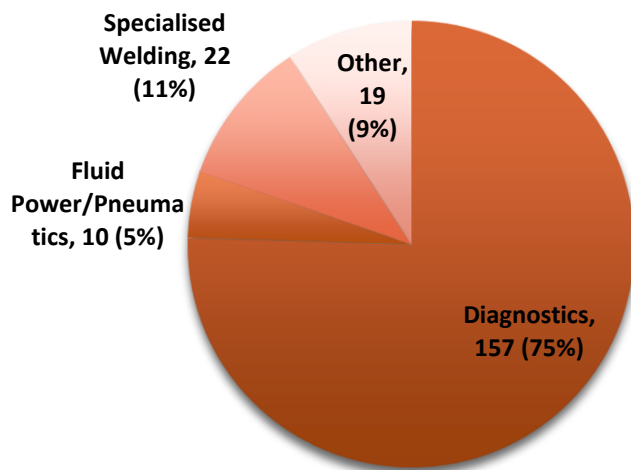
- A lack of broad-based, general trade skills or a narrow range of skills;
- Poor training and skills, and unsuitable applicants;
- Difficulties in finding a good tradesperson and/or dealer trained technicians;
- This has been a long term problem for the industry – over 20 years;
- A misalignment between what tradespersons expect to be paid and their skill levels; and
- The challenges of attracting good staff to the regions.

Almost all respondents, 89 percent, said they would utilise post-trade training.

Chart 3 shows the response to the question about requirements for specific skills. The overwhelming majority of survey respondents identified a need for diagnostic skills, with a number of respondents choosing more than one specific skill. Where respondents chose 'other' skills, they identified, in order of frequency):

- Basic/practical skills;
- Automotive electrical and electronics;
- Airconditioning;
- Hybrid vehicles; and
- Other individual requirements such as overhauling; OTR tyres; panel beating; skills associated with individual marques; new service requirements for cars; and mechanical skills.

Chart - Specific Automotive Skill Requirements



1.3 Prevalence of Overseas Workers in the Automotive Industry

The survey sought information about current and/or past experience with overseas trained tradespersons, along with comparisons of the skill levels of these workers to those trained in Australia.

On the basis of the answers provided it appears that a little over half of the employers in the automotive industry currently employ, or have employed, overseas workers. This phenomenon is interesting when considering the fact that in the broader workforce approximately one third of workers are overseas born. The possible relationship between the proportion of overseas born workers in the automotive trades and the proportion of businesses employing them will be explored elsewhere in this paper (within the context of the ABS census data related to overseas born workers in identified automotive trades).

As shown in below, there is very little difference between metropolitan and regional employers in the employment of overseas trained workers.

Table - Do/have you Employed Overseas Trained Tradespersons - Automotive

Locale	Yes	No	Locale Total	% Yes
Metropolitan	43	52	95	45.3%
Regional	29	32	61	47.5%
Online (unknown)	29	11	40	72.5%
Total	101	95	196	51.5%

Employers who did have experience with overseas trained tradespersons were asked to compare skill levels to those trained in Australia. Many respondents were equivocal indicating that it really depended on the individual and, in some instances, their country of origin. Others commented on their limited experience with overseas trained workers. The following table summarises the answers to the questions.

Table - Automotive Employer Perceptions of Comparative Skill Levels

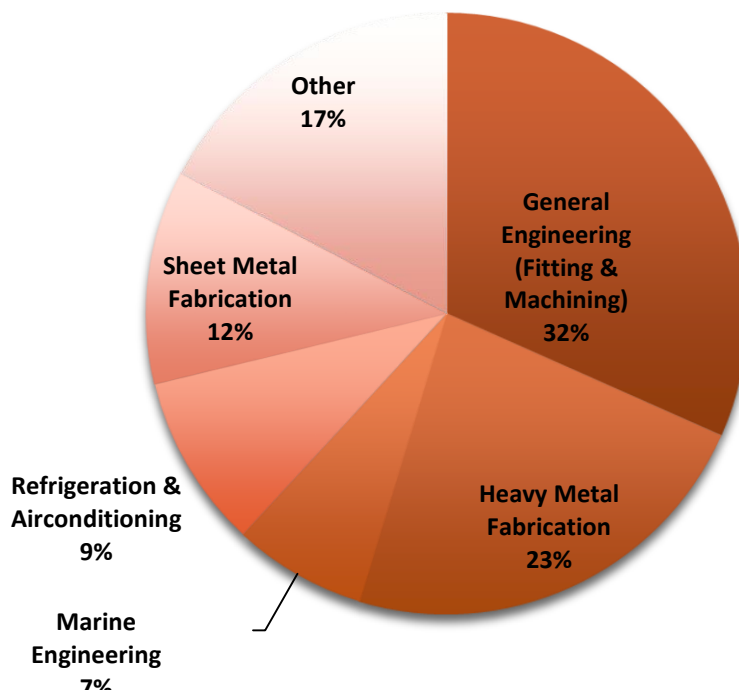
Overseas Trained Perceived As...	Count	Comments
Better	31	Overseas trained have better skills and attitude; better on European vehicles; standards/skills are higher from nominated countries; better now that I go overseas to interview the tradespersons myself.
Same	48	It depends or varies according to the individual; it depends on the country of origin; some are good, some are bad, like those trained in Australia; they generally have a better work ethic; their experience is better but their skills are poorer
Worse	19	Overseas trained need more supervision; bad experience with 457 visa holders – never again; better work ethic but skills not as good
Not applicable	97	

2. ENGINEERING SKILLS REQUIREMENTS

One hundred employers from the engineering sector participated in the survey, with 44 completing the online survey and the remaining 56 interviewed face to face or via the telephone. Most of the respondents were based in the metropolitan area – only 4 regional employers participated in this process.

The following chart shows the distribution of employers across the various engineering sectors. Compared to the automotive respondents, there would appear to be greater diversity in engineering businesses, with 50 percent operating in more than one sector.

Chart - Engineering Survey Respondents by Sector



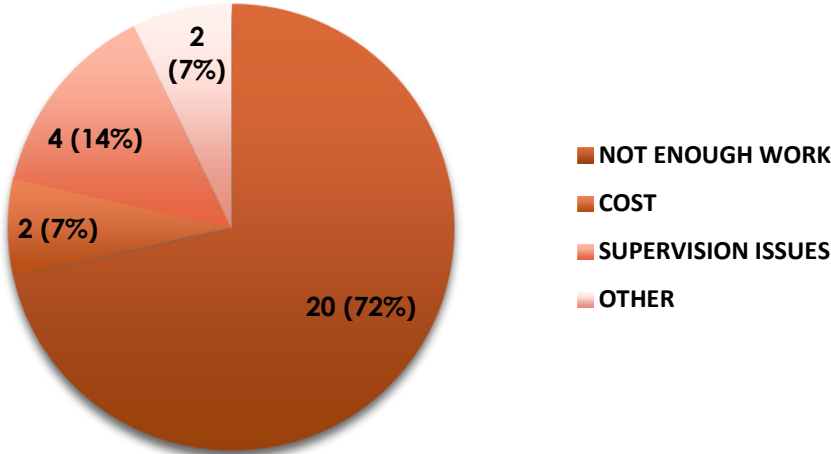
2.1 Employment of Apprentices

There appears to be a strong commitment to the employment of apprentices in engineering, given that 72 percent of respondents replied that they were employing apprentices. Interestingly a few of those respondents commented on the fact that rising costs were causing them to review their apprenticeship arrangements. Those who don't employ apprentices mainly identified the issue of having enough work and/or an appropriate spread of work.

In contrast to the automotive respondents, there was very little commentary about the suitability of applicants or the training. One respondent noted that the rules and obligations associated with employing an apprentice served as a barrier to their employment, while another commented on the attitude of young people.

The following charts summarises the reasons respondents identified for not employing apprentices.

Chart - Reasons for not Employing Engineering Apprentices



In response to the question “Would you employ apprentices if the cost of wages and on-costs were subsidised or shared with other employers?”, 62 percent of engineering employers indicated that it would make a difference, while 34 percent replied ‘no’. The table below provides a summary of the responses and comments.

Table - Sharing Engineering Apprentice Costs

Answer	No of Responses	Summary comments
Yes	62	Only if the work was available (a number of respondents made comments to this effect); extra assistance would help; depends on the system;
No	34	Traineeships are far better to manage; rules and obligations; cost is not the issue, the need for apprentices is driven by business need and workload; limited by workforce/business size; use labour hire/contractors; the extra costs associated with apprentices, such as insurance and tools.
Blank	4	

2.2 Engineering Trade Skill Requirements

Respondents were almost evenly split between those who answered that they were experiencing problems recruiting suitably qualified tradespersons, at 51 percent, and those who were not at 49 percent respondents answered 'yes'. Interestingly, many of those who said that recruiting was an issue seemed to be reflecting on past experiences, when demand for skilled tradespeople was much stronger. Many of the difficulties also related to what employers described as specialist skills or the specialised nature of their business. Comments were made in relation to:

- The need for specialists – welders, hydraulics, skilled fitter machinists, ship building, fluid power pneumatics, manufacturing skills; and
- The quality, expectations and attitudes of applicants.

A significant majority of respondents, 73 percent, said they would utilise post-trade training.

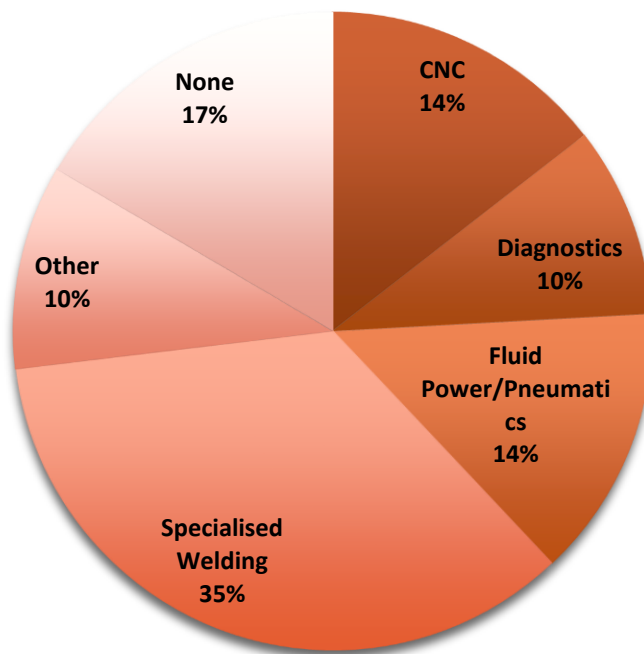
Chart 6 shows the response to the question about requirements for specific skills. There was a high demand for specialised welding, and a number of respondents chose more than one specific skill. Where respondents chose 'other' skills, they identified:

- Piping;
- Engine rebuilding;
- Boilermaker; and

- Other individual requirements such as overhauling; brazing copper tube; high level refrigeration; hydraulics; TIG welding and polishing and TLC; Milspec electrical terminations and installations; and boat building.

Worth noting here is that almost a quarter of the engineering respondents indicated there were not specific skill requirements.

Chart - Specific Engineering Skill Requirements



2.3 Prevalence of Overseas Workers in the Engineering Industry

The survey sought information about current and/or past experience with overseas trained tradespersons, along with comparisons of the skill levels of these workers to those trained in Australia.

A much larger proportion of engineering employers do or have employed overseas trained tradespersons – 76 percent, compared to 51 percent for automotive employers.

Employers who did have experience with overseas trained tradespersons were asked to compare skill levels to those trained in Australia and the following table summarises the answers to the questions.

Table Employer Perceptions of Comparative Skill Levels

Overseas Trained Perceived As...	Count	Comments
Better	19	Overseas trained workers tend to have a better attitude; it depends on where they are from – some are good and some are bad; they are better trained on working in high risk.
Same	42	Some are good, some are bad; they generally have a better work ethic; language can be a barrier
Worse	14	Communications issues; lack of independent thinking
Not applicable	25	

ENGINEERING AND AUTOMOTIVE TRAINING COUNCIL

Notes from Focus Groups

Focus groups were held as follows:

- 4 July 2014 EATC Boardroom – 10 attendees (6 from the automotive trades and 4 representing engineering trades)
- 11 July 2014 Naval Base – 8 attendees representing engineering trades
- 4 August 2014 EATC Boardroom – 7 attendees representing automotive trades

Trade skills – 1

Tell me about the trade skills used in your company. What trade occupations do you employ?

Example: Boilermakers, welders, panel beaters, light auto mechanics etc.

This question was only asked in the 4 August Focus Group with representatives from the automotive trades. Skills and trades employed included:

- Panel beaters and spray painters
- Light and heavy mechanics
- Service technicians.

Trade skills – 2

Tell me about the quality of the trade skills currently available. Has there been a drop-off or an improvement in the skills of tradespersons in the recent past?

Engineering:

- Quite good at moment, there are good quality applicants walking through the door.
- Tradespersons working in the north-west in the iron ore sector are not highly skilled. They make fundamental mistakes, cannot identify materials and don't keep up with standards, which means they cannot identify symbols and make basic mistakes.
- Trades aren't keeping their skill levels up and there are even lower skill sets up north.
- Since the GFC the marine industry has been very depleted however now the offshore work is going off the boil, the marine industry is picking up.
- There are opportunities for new training that hasn't been done for years.
- Shipwright moved to fabrication and cabinet making but is moving back to shipwright.
- There are more opportunities for fabricators and cabinet makers.
- Reference was made to an article in an industry journal which reported that for a project in Gladstone, there was a 60 percent fail rate for workers taking the weld test.
- There are real issues with pipefitters and welders. Most are not up to scratch. The welding standards in Australia are very, very poor.
- 1796 Australian Standards: there are not enough 1-9 standard welders.

- Should be offering welders a chance to fulfill field standard and setting them up for success by enabling them to continue to more study.

Automotive:

All agreed there has been a significant drop off in skills and more particularly a drop off in attitude. Other comments included:

- Good range but skills and competencies will soon be irrelevant given the technological changes coming.
- It is difficult to get technicians to do further training.
- Particular issues were noted with Gen Y recruits who “expect to be paid just for turning up”.
- Skills are waning and there is a reluctance to do dirty work.
- Most tradespersons have the technical capacity but are reluctant to change.
- Spray painters are reasonably well skilled, the panel shop is where they struggle. Skills are far short of where they were 10 or 15 years ago.
- Some skill sets for contractors are very good but why have them on contract rates when you can employ a local?
- Older employees can't physically do the work anymore – instead of the company finding a way to use their skills base and their knowledge, they take on new people with nowhere near the work ethic or knowledge.
- Expectations are big and this has an effect over time with workers not always able to keep up with the amount of work required.
- Older employees have the mechanical skills while younger employees have more of the automotive electrical skills the company needs but neither has the particular skill set the company requires.
- A lot of skills were lost during the mining boom.
- Wouldn't look at anyone from construction or mining, they train their own.

Trade skills – 3

Do you employ tradespersons that were trained overseas? If yes, how do the skills of these employees compare with Australian trained tradespersons?

Engineering:

The general consensus was that it really depends on the person. Some workers are good, others are bad, no matter where they come from. The majority preference was to employ local workers where possible. This was because it is not only cheaper, it also minimises any problems with cultural and communication differences.

Other comments included:

- South African workers are good industrial electrical fitters.
- Cultural differences are an issue and sometimes the most appropriate recruit is simply someone with local knowledge.
- A level of local understanding is important when recruiting overseas workers.
- Communication is essential, especially when it comes to safety.
- UK recruits are better.
- The Phillipinos are hard workers but they have poor communication skills.
- The literacy and numeracy test for 457 workers is an issue as it has implications for OH&S.
- South Africans have comparative skills but won't be told what to do.
- One company working for Western Power had its contract terminated in 2006/07 and had to retrain its workforce because of the cultural differences. Things have improved since then.
- Several people commented that fabricators from overseas are no good. In one instance every boilermaker had been sent home – they had mainly recruited from Asia but also from South Africa. Perhaps they had not recruited appropriately – may have been better to recruit from countries that work to a like standard.
- In the case of fitters, overseas workers were generally CAT or Komatsu trained fitters so they worked out OK.
- While no one looked overseas for fabricators – they only recruit from Australia, they do go overseas for a lot of coded welders. This is done through specialist overseas recruitment companies.
- Overseas machinists have to be upskilled, especially those from India and Asia.
- One global company transfers people from different countries as their skills are needed. For example, they import Phillipinos for advanced specialist class welders, especially pipe fitters, as these skills are not available in Australia. They have workshops in the Philippines and import the best workers from there. They do a lot of training in Australia but have use graduates of the college system in the Philippines by sending people from Australia over to test and select suitable candidates. This is only used, however, once all local talent is exhausted.
- Some companies have imported women welders from the Philippines and they were very good but the number was only small – 15.

Automotive:

The general consensus was that as with locally recruited people, it depends on the person.

Other comments included:

- Overseas tradies can strip an engine, locals can't.
- If they're dealer trained, eg CAT or Komatsu, they're fine, if it is boilermakers or welders, it's a different story.
- UK, European workers OK to really good.
- Phillipino workers reasonable, can be upskilled and are hard workers.
- The experience with European workers has been good but workers from Asia lack the high level diagnostic skills.

- Have had poor results from the sub-continent, some UK workers and some Singaporeans.
- The communication issue is important, particularly with cultures that will say 'yes' to everything even if they don't understand. This has the potential to be dangerous.
- Need to look for high skills sets and the least amount of cultural difference.
- People have been employed from every part of the world. Generally poor outcomes are related to cultural mores/differences (eg experience with Vietnamese employees, where they aim to please)
- Overseas trained workers have good skill sets but poor practice around safety.
- One company has kept a lot of their 457 workers, 3 of whom have no English, and they are some of their best workers. They would go back to recruit overseas if they could but can't do it anymore. The big difference is attitude.

Trade skills – 4

Do you have a need for higher level or specialist trade skills in your company? If yes, what are these skills?

Engineering:

- Biggest challenge finding Indigenous workers trained up and ready to go – some companies have diversity targets but it is a big challenge because there aren't the people trained and job ready.
- Access to training during out of work time is a difficulty – some apprentices only have time off during the weekend but there are no providers open then.
- There are no trainers who can cover all the new technologies.
- Need to give apprentices base skills.
- Marine engineering is a niche and competing in an export market, which needs a higher standard to compete. Therefore providers need to train to a higher standard.
- Manufacturing, fabrication skill sets are available from overseas but are not always compatible with Australian standards and are not familiar with OH&S.
- Need to start training now for hydraulic engineering, electrical, manufacturing, to prepare for the upturn.
- Plant mechanic should be Cert IV – to ensure coverage of hydraulics, electrical higher level diagnostic skills.
- No RTOs offer Cert IV in mechanical trades. They were willing to do it but the numbers weren't there and all the employers wanted something a little different. Businesses may need to become their own RTO in niche markets such as coded welding.
- Higher level mechanic has also become niche and therefore most likely to be delivered via fee for service.
- No RTOs deliver a straight machinist certificate (they only offer fitter machinists). The Cert IV allows for this but no-one offers. It is believed this is a funding issue.
- One company has machinists on residential sites because they tend to stay. If they were to leave, however, the company would be in trouble because there are no replacements. They are starting to do more upskilling to account for this.
- The shift to 'repair by replacement' is having an impact on skills requirements – eroding the skills base? However, maintenance is occurring in house

- There is a new rail training package and industry is working with RTO on branching into low voltage electrical but some key areas not used any more have dropped off.

Automotive:

All participants agreed there should be direct entry for a Certificate IV apprenticeship training rather than restricting it to Certificate III.

- There is a need for a Certificate IV apprenticeship for heavy duty work.
- One company does a Certificate IV for boilermakers so it can get coded welders.
- The move to more electronic systems in vehicles and more electric vehicles means there is a need to have people who know about electrics as well as mechanics. The electric drives mean you have to hire an electrician but they don't know about mechanics and vice versa. They are finding they have to recruit electricians and train them to work on cars.
- The advent of hybrid cars will make electrics even more important to mechanics and the training is nowhere near reflecting this at the moment.
- There is no need for higher end apprenticeships in panel and paint.
- Tradespersons are reluctant to train. In New Zealand people are constantly training but that is not the case here. It could be a reflection of the fact that people don't need to compete for work.
- Within the context of the number and differences across manufacturers and models (there are 64 different marques) and the fact that there is no trainer out there that has access to the new technologies, it may be better to train more Cert II replacement technicians, rather than repair at Cert III. The achievement of Cert III, apprenticeship equivalent, could come directly on the job and after an appropriate amount of experience. Cert II to give the basic core skills sets only.
- Cert III apprentice level for some automotive trades is too high – this becomes the specialist training.

Trade skills – 5

Have you had or are you having difficulty finding tradespersons with the higher level or specialist trade skills you need? If yes, why do you think this is? If yes, what do you think should be done to ensure these higher level or specialist skills are available?

Engineering:

- The need for welders hasn't changed but the training has disappeared. During the boom there were only 6 welding apprentices. There is still difficulty finding welders and the numbers for welding training are too low.
- Welder was a specialist trade a few years ago (used to be Cert III) but RTOs only offer the general certificate now and some specialist skills are being lost.
- There is some welding in training but it is not appropriate for all jobs. The situation is the same with electrical. The skills required depend on what the project demands or what a contractor requires.
- The issue appears to be that welders can be mobilised to site without a certificate, all they have to do is pass a welding test. They only get the Cert III when jobs start becoming scarce. Some clients now won't let welders on site unless they are certified – testing is no longer sufficient.
- There is a need for competent welders and huge benefits in having Cert III and IV trained welders.
- There is a need to resell trade of welder (not boilermaker) with the emphasis on welding, so probably need to be a welder first then a boilermaker, so the training should be welder/boilermaker.
- The apprenticeship and trade skills are there but employers need to tell RTOs what they want. On the other hand, RTOs need to have sufficient numbers of students to make delivery viable.
- There were comments that the boilermaking trade is dying in this country with most fabrication being done overseas now.
- One person mentioned a case where a RTO had been asked to run a course but it would have cost \$52,000.
- It was acknowledged that RTOs are getting out of thin markets as they are not profitable, but this needs to be balanced with what is needed in the economic interest of the State.
- It was agreed that welding is probably the most expensive training to run.
-

Automotive:

- Not getting the right calibre of apprentice – many have no aptitude for the trade. There is not enough focus on the end requirement so recruitment is not getting the right people.

- The old mindset was that tradies were not very smart. Smarter people are now undertaking trades, mainly because of higher wages, but automotive trades are not seen as an industry of choice.
- There are a lot of applicants for jobs but it is still hard to find the skill sets.
- The skill level required in the ag sector has changed considerably, mainly due to technological advances like on-board computer systems and GPS and tracking systems. Someone from their sector who goes to another sector now would be considered over-qualified.
- Need to shore up general knowledge and top up with specialist skills.

Apprentices – 1

Do you employ apprentices or have you employed apprentices in the past? If currently employing, how many and in what trades? If no longer employing, why?

Engineering:

All participants were committed to the apprenticeship model and to employing and training apprentices. Where they weren't employing apprentices, it was mainly due to a business downturn rather than any other reason. Other comments included:

- Apprentices need to be trained for the future so the industry can continue.
- The Cert IV needs to be recognized as attracting higher wages and status.
- It's important that people see trades as a profession/career – that they hold a very important job.
- Employers who treat apprentices well turn out good apprentices.
- Going to competency-based training was a mistake.
- It was suggested that this was not a good slice of industry to answer at the moment because they only look and plan 12 months ahead.

Automotive:

All participants employed apprentices, mainly in a yearly intake because they want a consistent flow. Apprenticeships were in HD, HD mechanics, auto electricians and boilermakers. While one participant was employing more apprentices, everyone else was employing less. Comments included:

- It is easiest to take current technicians and train them to what they want – a continuous development approach.
- One large employer didn't put any apprentices on this year. Only 2 mining companies put on apprentices this year, everyone else is down.
- A fall in apprenticeship completions is an issue of career versus job and wages.

- There is an issue with difference in expectations, for example some apprentices say they won't go to a mining site even though they're in the mining sector (although this is different with girls who are better at going on-site). These days, if the apprentice is too much trouble, they let them go.
- One company needs 43 apprentices. It is putting 20 on at the end of the year. It wouldn't hire 457s and if it loses a technician it would employ 2 apprentices.

Apprentices – 2

Tell me about your experiences with the apprenticeship training system. What RTOs do you have a relationship with? Have RTOs been helpful or not in ensuring your apprentices are trained in the skill areas you need.

Engineering:

Generally participants commented that they while they had had some positive experiences with RTOs, there were issues with flexibility and specialist training. A significant number undertook in-house training themselves so they got the standard of training required.

Comments included:

- Buy in from employers is varied – some are not very engaged.
- Sometimes employers can't supply the skills they've signed up for.
- If employers dictate, they get skills, but the skills are limited to those required by that employer.
- A lot of RTOs can't cope with the flexibility needed to meet employer needs.
- The employer perspective can be too narrow and the RTO has responsibility for making training broader.
- RTOs are helpful when you have the numbers.
- There is only 1 RTO delivering rubber and belt splicing.
- One company that provided in-house training had a problem when it sent workers to site. The problem is six are sent to site but often only four come back.
- Some things are done better in house by employers – that way they can train to their standards, others are done better through RTO.
- The usual experience is the company gets given a pathway and is then asked to sign on the dotted line. Ultimately, the training meets employer needs but it needs to go to Cert IV to meet employers' skill requirements.
- It was agreed that in general they are delivering, but there are not enough points in Cert III for requirements.
- There is a need for Cert IV or more for what's required on site. WA is the only State offering Metal trades – air conditioning and refrigeration Cert III engineering and only 1 RTO delivers it.
- WA has different system from other states – every other state is offering the UEE cert III.
- MEM electrician with electrical licence attached is what industry wants but not what it's getting.

Automotive:

As with the engineering trade participants, representatives from the automotive trades commented on issues with lack of flexibility with RTOs and the need for specialization.

Comments included:

- One company started its own RTO because of problems arising from some block releases happening on mining sites. They found this was a detriment to the training and decided to run their own, which works very well because they have direct input into the training.
- Another company partners with an RTO. It has issues but is a successful partnership. It means they can control what their apprentices are learning and how often they are learning.
- The ag sector has evolved to where it has outstripped the ability of the VET sector to serve its needs. The sector now heavily relies on automotive electrical skills.
- Another company was sending auto electricians to TAFE but now sends them to a private RTO. To illustrate the problems they have encountered with TAFE inflexibility, they mentioned the example of the NAP program, which was aimed at training mature age workers through Polytechnic West. As the trainees were mature age, they had a range of skill levels. The program was too rigid to accommodate this with the result that more than 2 years later some workers still have not completed an 18 month course. More flexibility is needed.
- Other participants commented that RTOs are not flexible with how they set up their programs. Some of the electives are not available. Companies need to dictate what they want.
- Everyone wants something different for Certificate IV. RTOs are not flexible enough – sometimes the numbers aren't there for a class.
- The training contract needs to be a genuine contract. There needs to be a genuine partnership between the employer and RTO. AUR 12 offers good flexibility.

Apprentices – 3

Tell me about the overall quality of apprentice skills. Does the off-the-job training provided to apprentices give them the skills they need to do the work you want them to do?

Engineering:

- Need to go back to an initial streaming assessment to ensure kids have aptitude and get into the right stream
- All felt the quality of apprentices at the moment is very good. It doesn't matter when they advertise, they are attracting good quality apprentices.
- There is a need for supervising tradesmen to have up-to-date skills too, ie existing workers need to be upskilled as well so that they can supervise apprentices.

Automotive:

The automotive trade representatives felt that in general the quality of apprentice skills is not there. Comments included:

- It is the employer's job to provide on the job training but many employers expect kids to go to TAFE and come back and make money.
- All apprentices are regularly assessed over a 12 month period. A decision on the apprenticeship is made at the end of 12 months.
- TAFE is part of the learning but the employer has to take some of the responsibility.
- When they advertise for an apprentice position, it is surprising how many people from other industries apply (70 percent of applicants in one instance). This indicates poor decision making on the part of the apprentices. Many have no mechanical aptitude at all.
- They train their own apprentices to their standards and for their own needs.
- If they hire a qualified mechanic it only brings them grief, eg one couldn't put in a gearbox, so they train their own and that works well.

Apprentices – 4

Is there a need to broaden and expand the current apprenticeship training to ensure that all the necessary skills required are covered during the apprenticeship period?

Engineering:

All participants agreed the option for a certificate IV trade was needed, especially in higher level electrical and mechanical. Comments included:

- It's about collaboration across the board.
- There is a need to convince industries they need to work to train people up now to minimize 457s in the future.
- Look at models around the world that are working.
- It's up to industry to say it's a valuable qualification for the individual. Keep the Cert IV separate but treat it appropriately – recognise the additional expertise attached to its attainment (like a masters at uni level)

Automotive:

All participants agreed there needs to be a certificate IV apprenticeship.

- Yes, for specialists. The Cert IV is important but not for everyone.
- Engine reconditioning, etc are now much more specialised. Previously mechanics were more generally trained but has no become too specialised.
- General apprenticeships no longer apply.
- It requires collaboration between government and big industry people.

Future employment – 1

What are your current employment needs? Are you currently recruiting tradespersons? How likely is it that you will recruit tradespersons in the next 12 to 18 months?

Engineering:

The majority were not currently recruiting and they commented that they only plan 12 months ahead so they couldn't answer the question about recruiting in the next 12 to 18 months.

Automotive:

As with the engineering trades, recruitment in the automotive trades is not likely to increase in the next 12 to 18 months. Most commented that they were not recruiting but would keep apprentices. Comments included:

- If they lost a technician, they would be more likely to recruit two apprentices rather than replace the technician.
- Only looking for someone with 10 years' experience. If they can't find the skills they need locally, they will go overseas

Future employment – 2

What are your current apprentice employment needs? Are you currently recruiting apprentices? How likely is it that you will recruit apprentices in the next 12 to 18 months?

Engineering:

- All employ and are recruiting apprentices.
- One employer commented that they have nothing because they have no work, but they are planning to take on new apprentices next year.
- It was suggested that this was not a good slice of industry to answer at the moment because they only look and plan 12 months ahead.
- All the other companies are currently recruiting, although it is minimal for some.
- One of the large metropolitan manufacturers has halved their apprenticeship intake – this is more about available work than fees.
- There is no mining contract work so they are cutting back and just using apprentices.

Automotive:

- not recruiting but will keep apprentices – frequency will decline as business need evolves.
- Recruiting very few now but it is likely they will take on apprentices in 2017.
- No increase in tradespeople employed but will put on apprentices.

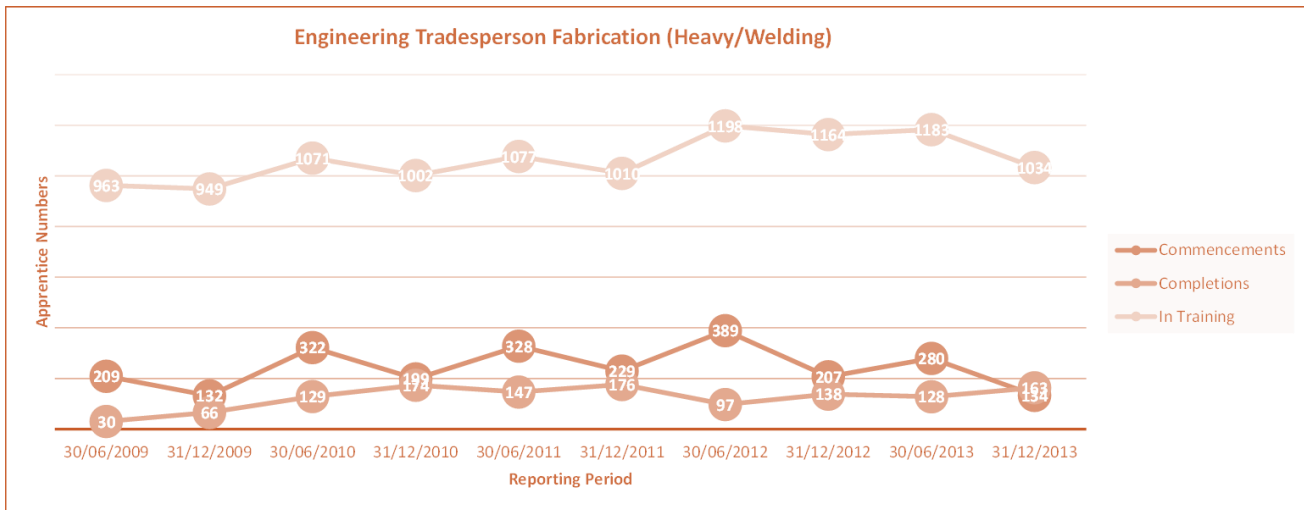
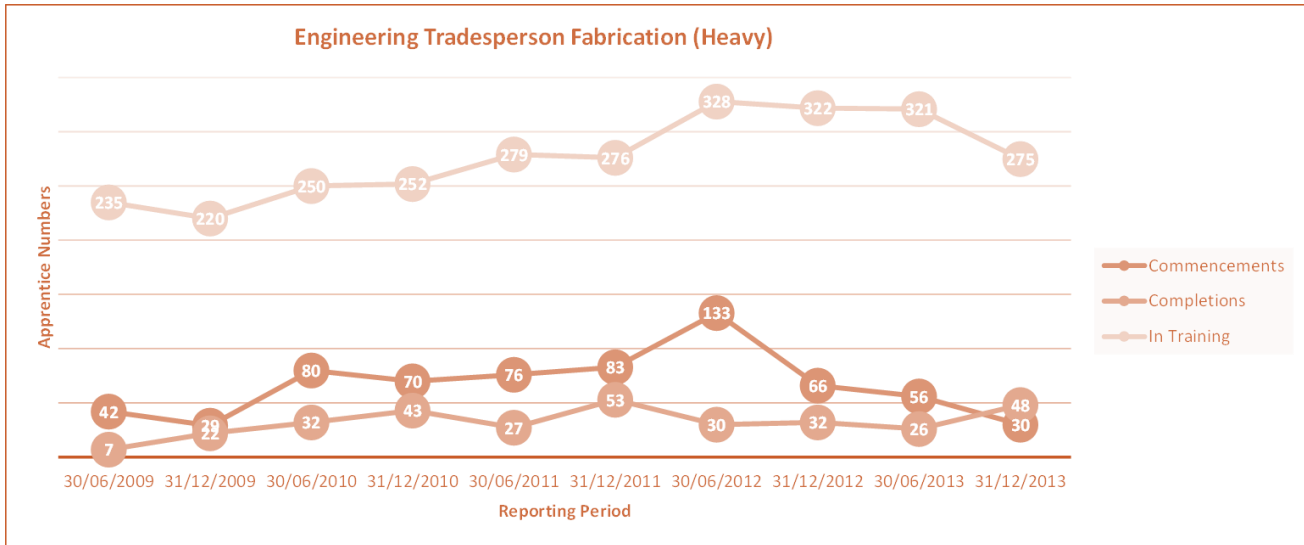
- The ratio of supervision in some areas is becoming an issue. It is patchy at the moment. Some businesses are doing well, e.g. commercial vehicles, heavy on-road vehicles, 4 wheel drive and recreational vehicles, but it is very variable outside those areas. Optimism is low at the moment.

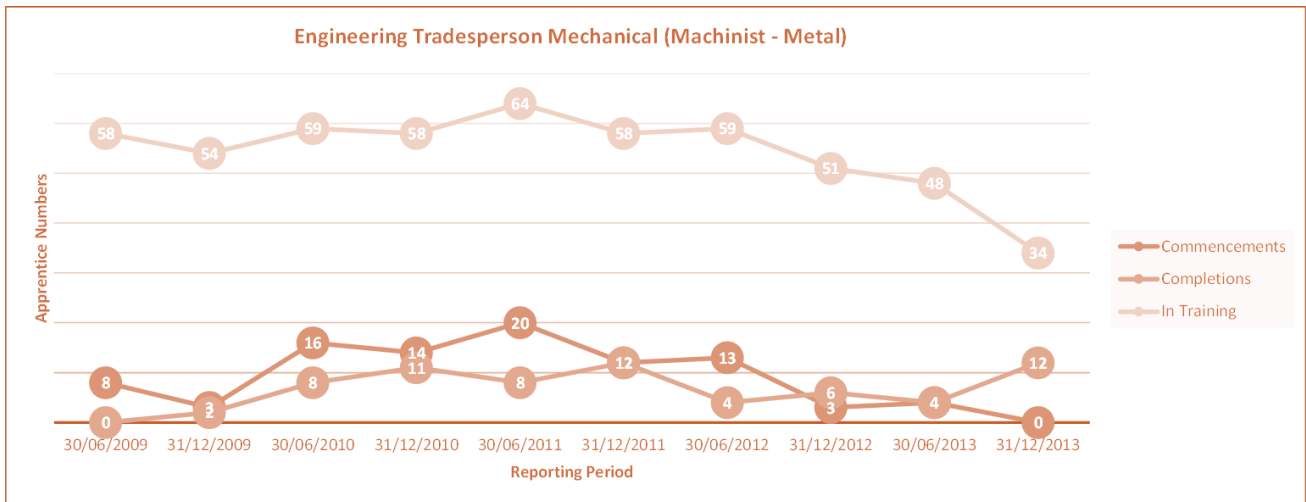
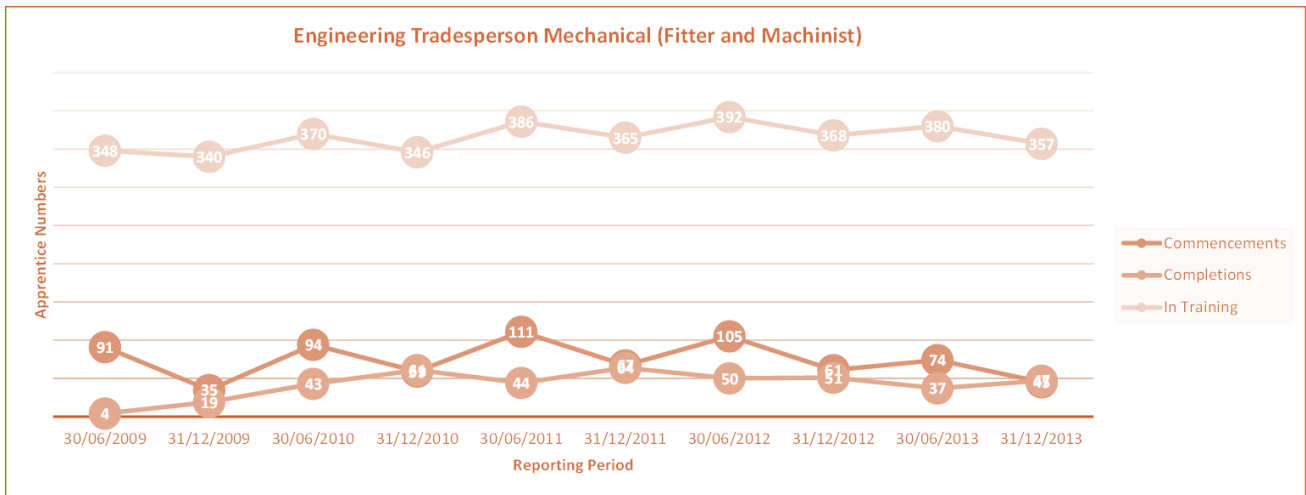
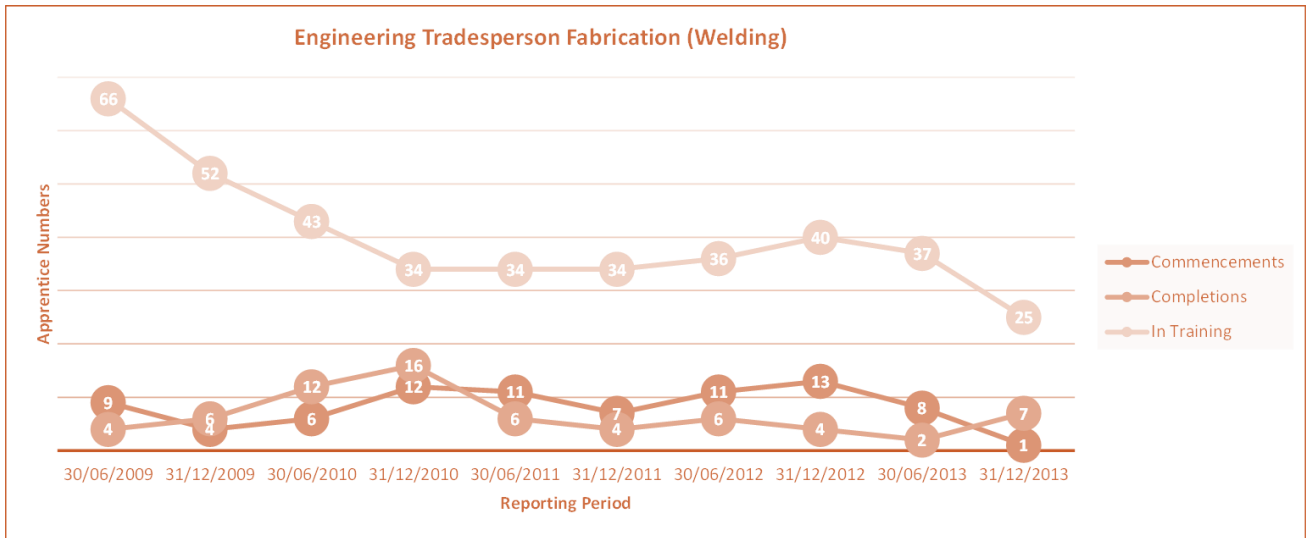
General comment

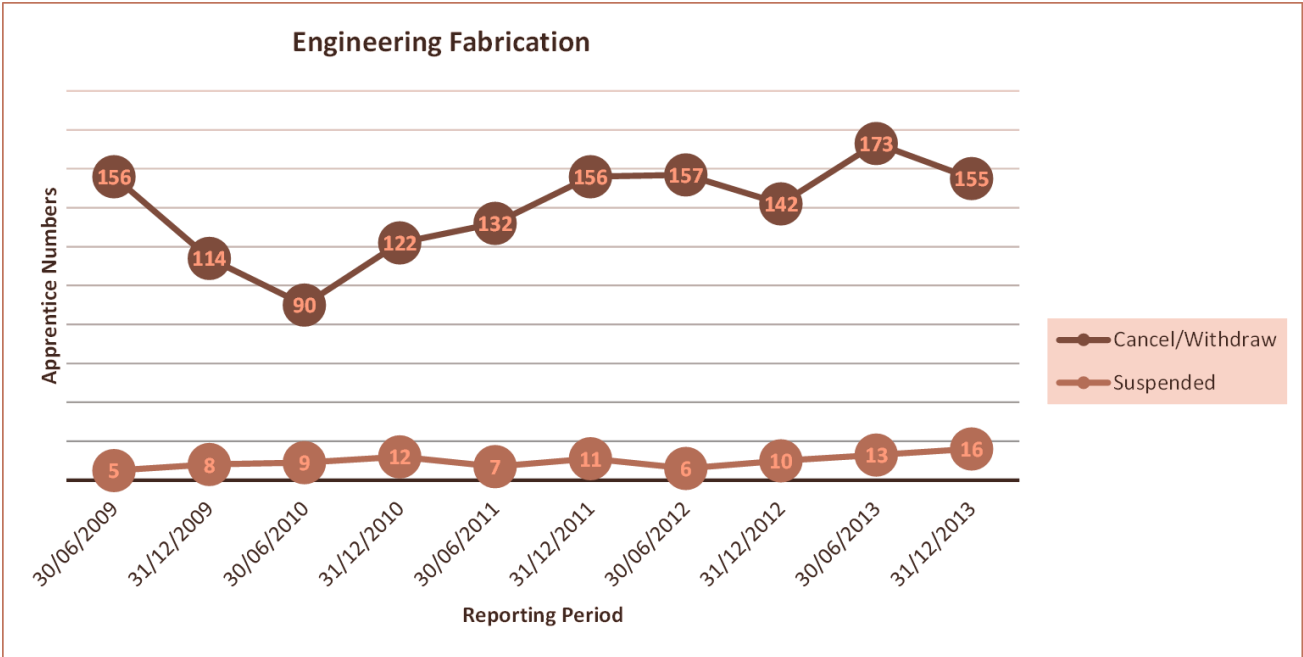
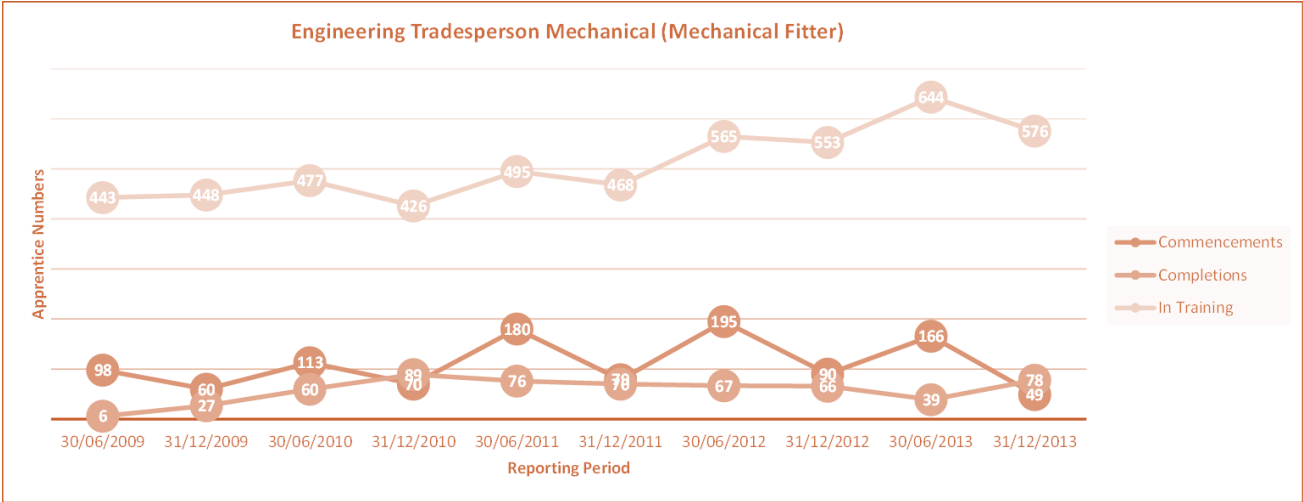
- The increase in training fees under Future Skills from \$800 to \$2400 and the withdrawal of the tools of trade allowance are likely contributors to the decrease in apprenticeship completions.
- Image problems with the automotive industry. It is not viewed as an attractive career option among school leavers even though wages and conditions have improved dramatically in recent years.
- Concern at the introduction of the apprentice loan scheme which will allow apprentices under 18 years of age to sign up for a loan without the consent of a parent or guardian. It was felt the money would be spent on things other than training and the young person would be left with a debt they would be paying off for many years.

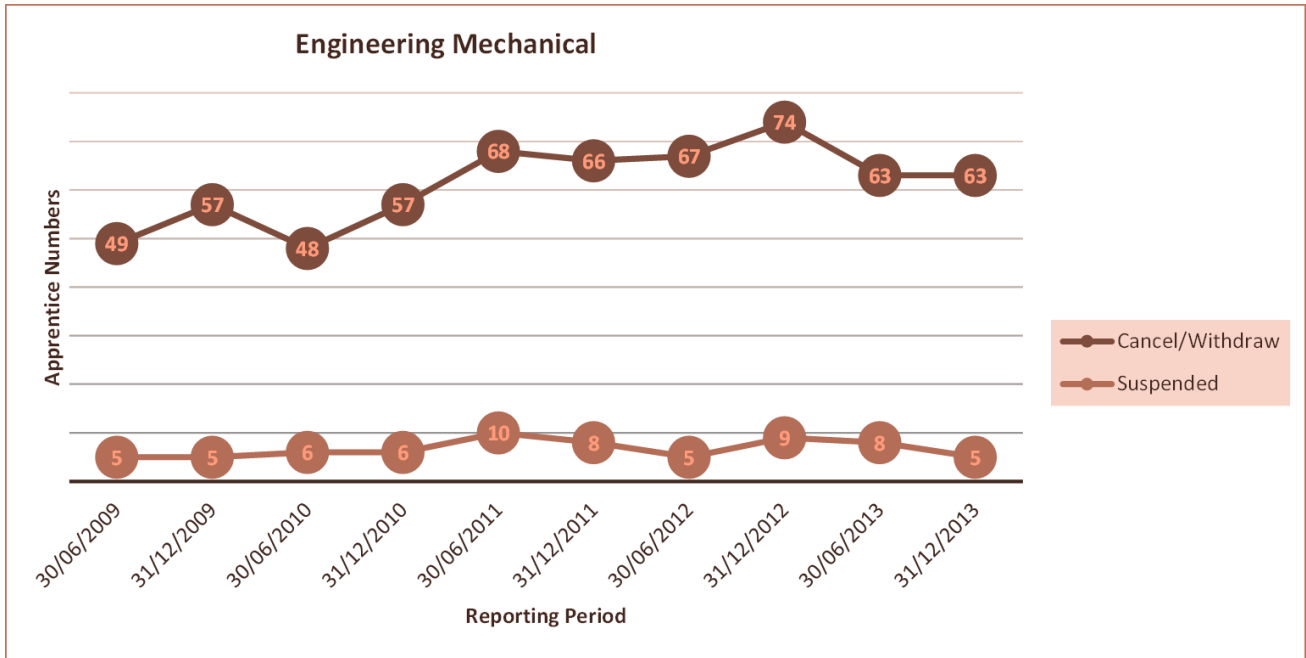
APPENDIX C – ENGINEERING APPRENTICE DATA

Engineering Trades – Apprentice Commencements, In-Training, Completions (and Consolidated Cancellations, Withdrawals, Suspensions)





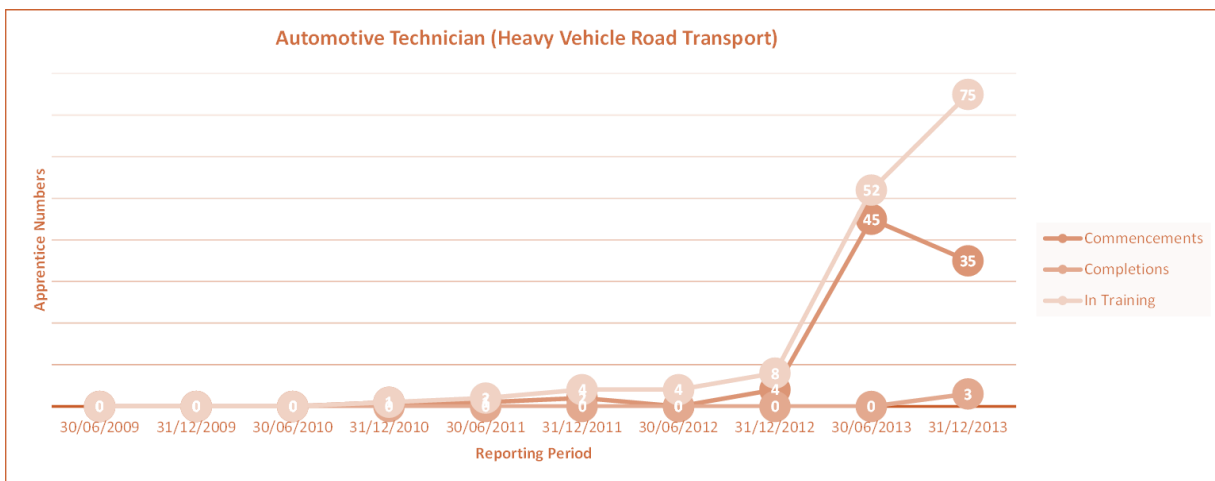
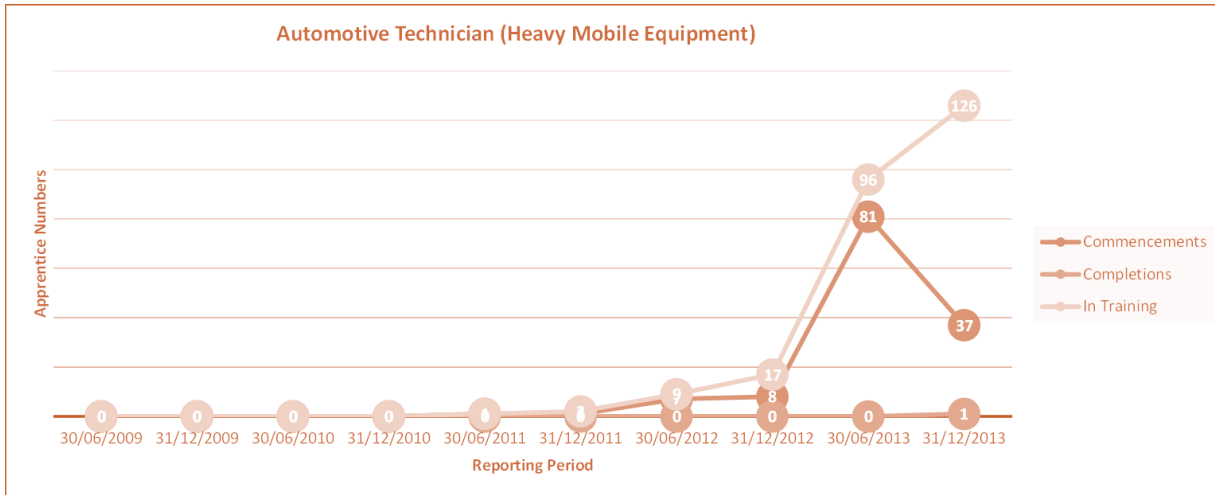


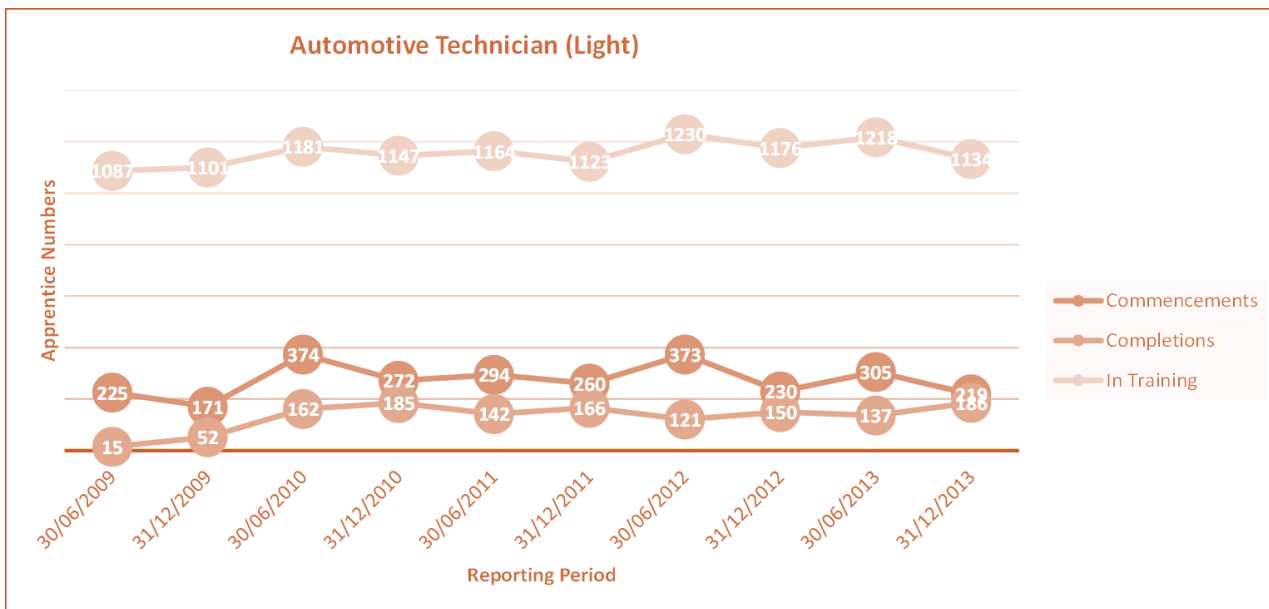
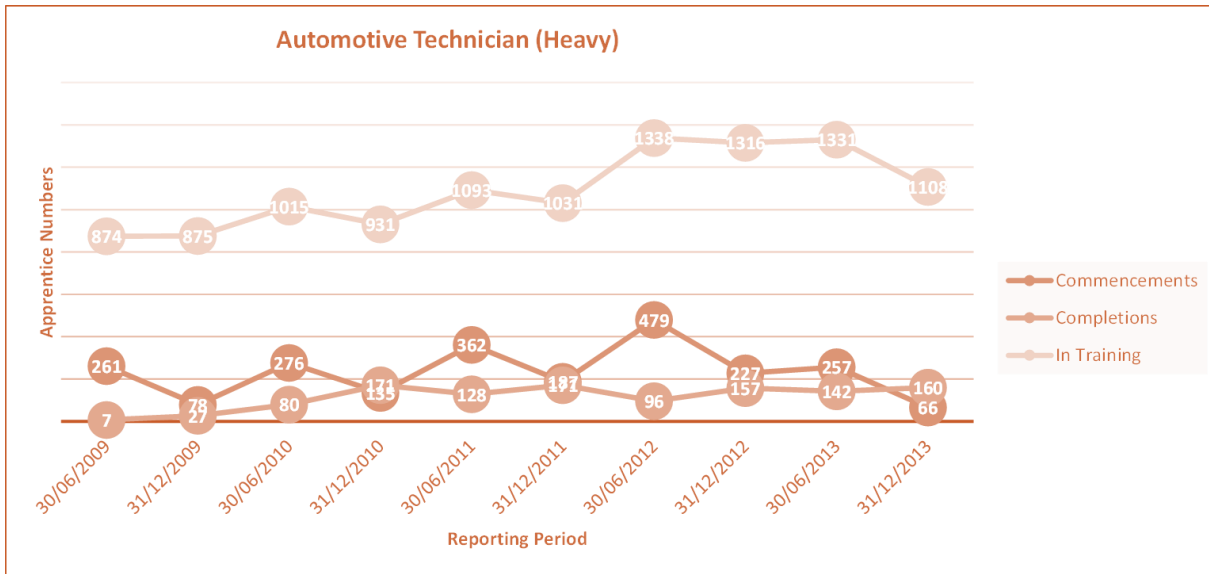


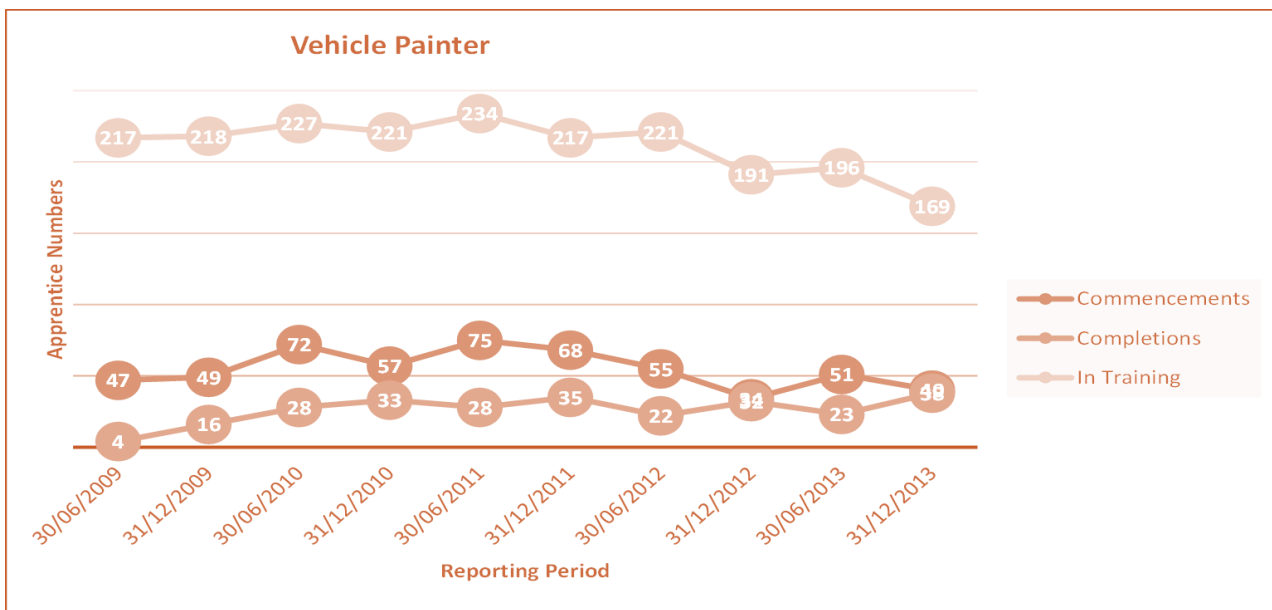
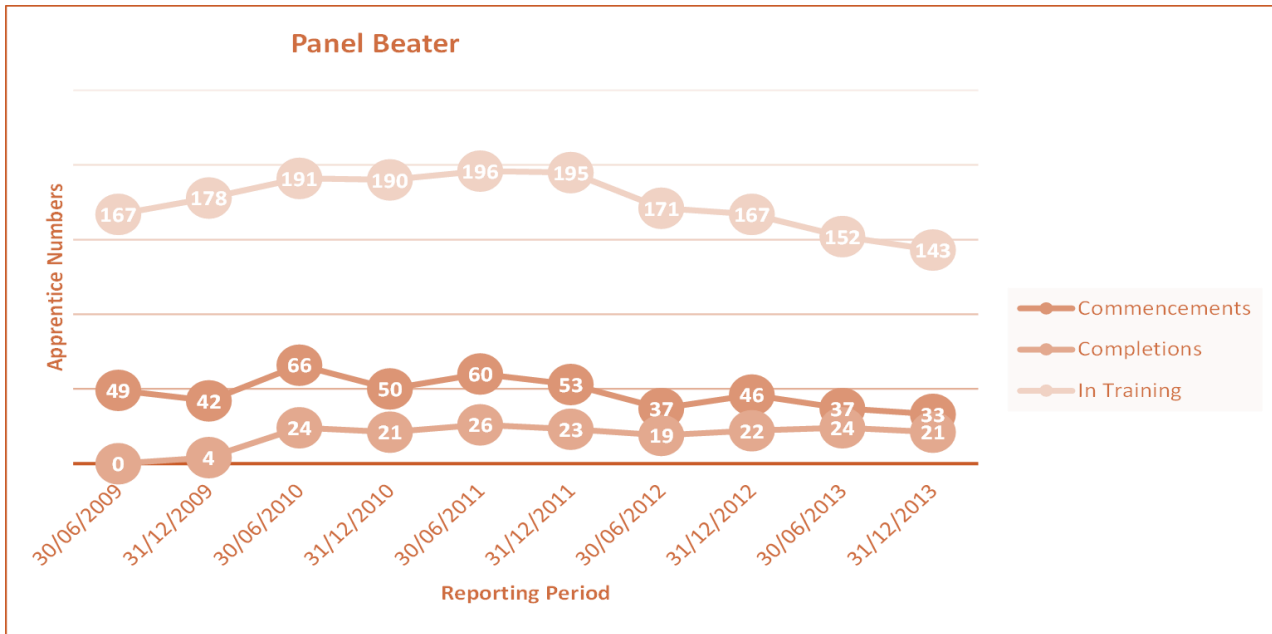
All charts in this appendix are based on data provided by the Department of Training and Workforce Development

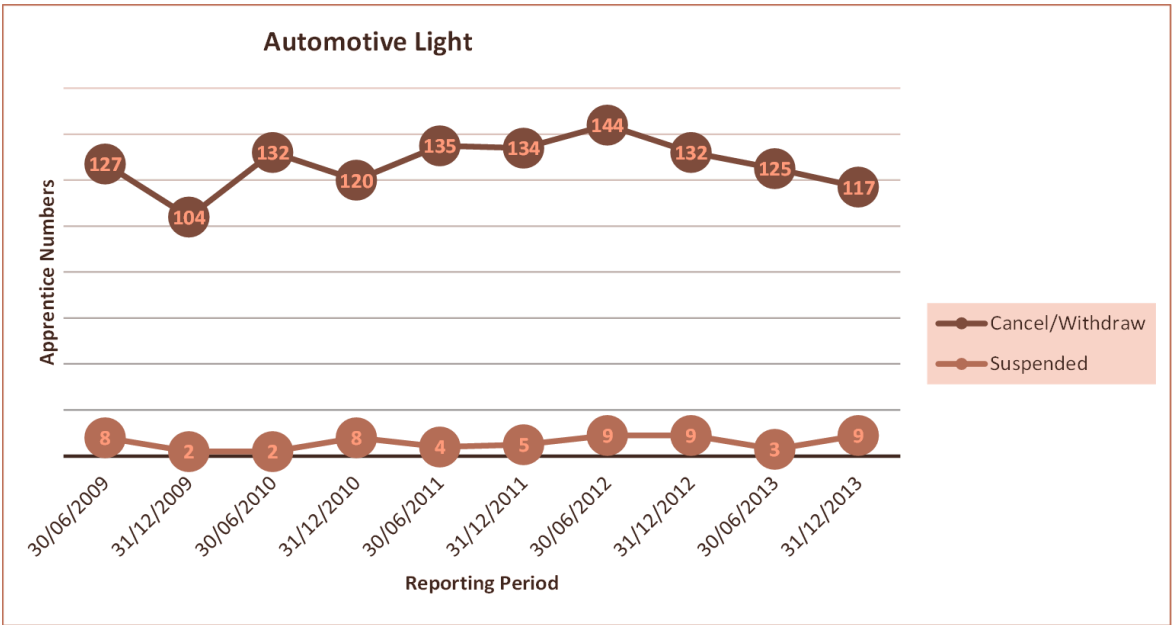
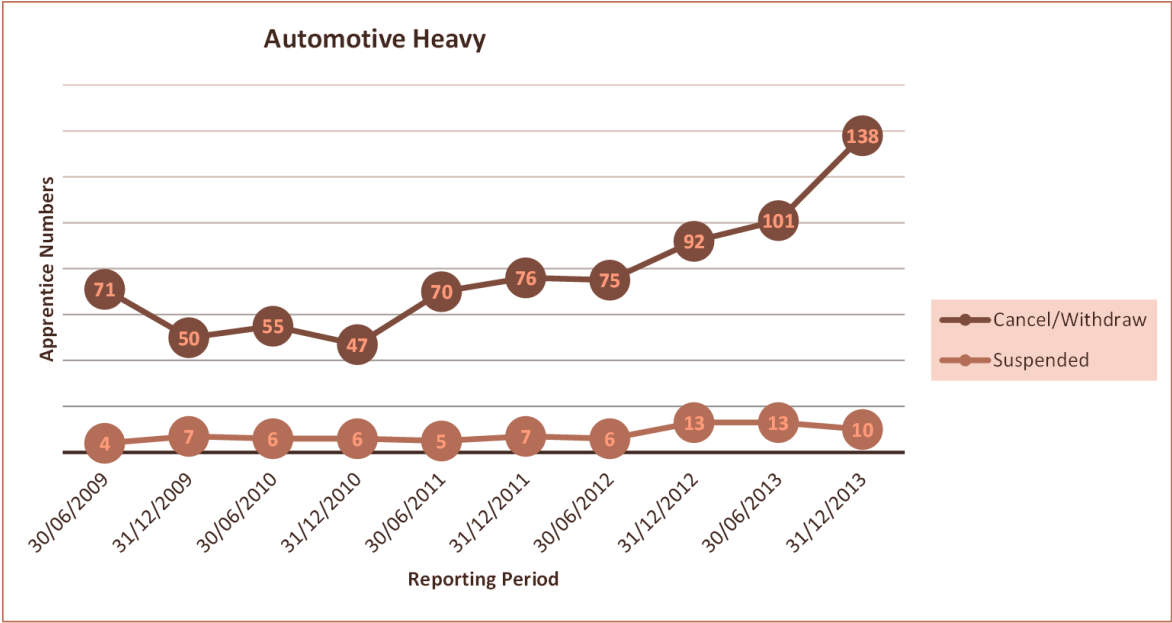
APPENDIX D – AUTOMOTIVE APPRENTICE DATA

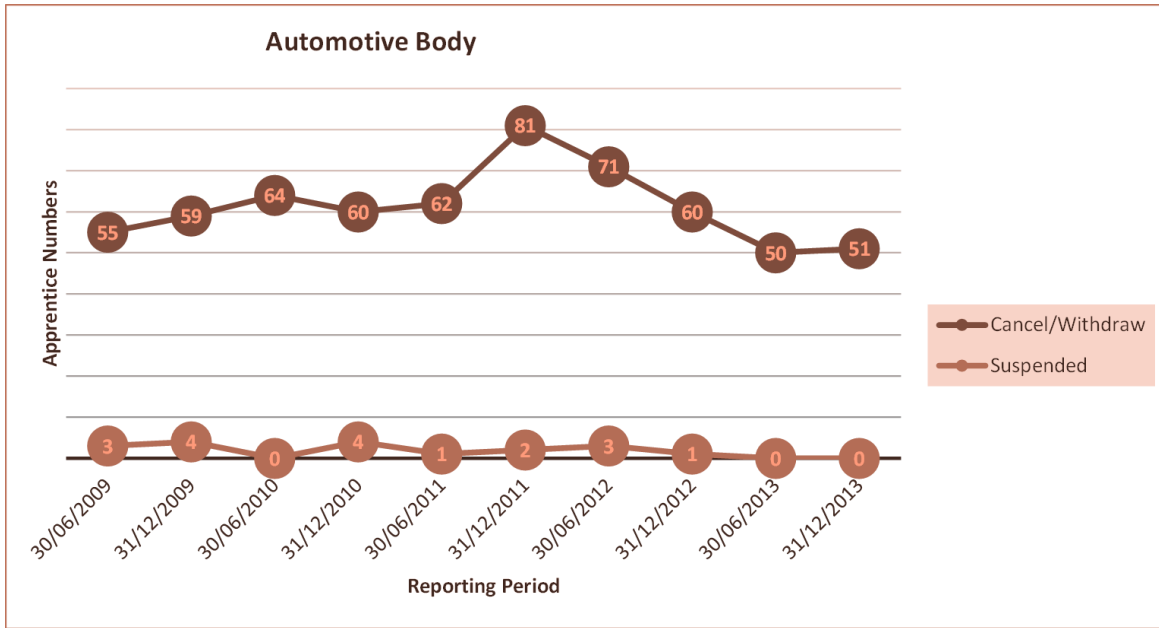
Automotive Trades – Apprentice Commencements and In-Training, Completions (and Consolidated Cancellations, Withdrawals, Suspensions)











All charts in this appendix are based on data provided by the Department of Training and Workforce Development

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