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| Mechanical Engineering Associate Professionals | New South Wales (NSW) |
| ASCO Code: 3125 | March 2007 |
| Labour market rating | Shortage |
| Comment: <i>Shortages are evident for associates with at least two years experience in design drafting, detailing, HVAC drafting, 2D and 3D modelling and machinery design.</i> | |

Occupational demand

Census and labour force survey data suggest that employment of mechanical engineering associate professionals in NSW has declined over the last decade. More recently, the Australian Industry Group / Price-Waterhouse Coopers *Survey of Manufacturing* shows that manufacturing production in NSW increased for the third consecutive quarter in March 2007, following three quarters of decline from December 2005. Non-residential construction has also been solid in NSW, with the Construction Forecasting Council (CFC) forecasting its value to increase by 9.3 per cent in 2006-07 (not adjusted for inflation) following growth of 13.4 per cent in 2005-06. The DEEWR Skilled Vacancies Index (SVI) shows that vacancies for the occupation have stabilised at a low level since mid-2006. The consensus of employer and industry contacts surveyed for this report was that demand for the occupation was firm.

Occupational supply

The number of persons completing relevant apprenticeships and diplomas has been fairly stable at 100 to 120 persons a year over the last five years. While this indicates a high training rate of 10 per cent a year (based on an estimated employment of 900), many persons who complete relevant training may move into other drafting occupations. Net overseas immigration to the occupation was 39 persons in 2005-06 which was above the average of 22 persons a year over the previous five years.

Employer and industry comments/current labour market

A DEEWR survey of employers who had recently advertised for mechanical engineering associate professionals showed that 19 per cent of advertised vacancies were filled within six weeks of advertising. Shortages were evident in Sydney and regional NSW, particularly in the Hunter and the Illawarra. Although some advertisements attracted a large number of applicants, there was an average of less than one suitable applicant per vacancy. Employers and recruitment agencies reported that a large majority of applicants either did not have relevant qualifications or had poor communication skills or did not have experience in the employer's area of specialisation. The minority of employers who did attract suitable applicants often found that the remuneration expectation of these applicants was beyond their capacity to pay, which they attributed to the high remuneration on offer in mining and infrastructure projects in Western Australia and Queensland.

Vacancies proved difficult to fill across a number of industry sectors including building services, consulting, light manufacturing and heavy industry. Skills which employers found difficult to source included design drafting, detailing, HVAC drafting, 3D modelling and machinery design. One small employer based in Sydney reported that it had a vacancy for an air conditioning draftsman which had not been filled for eight months. Other employers had been advertising repeatedly for between two and six months without success. Most employers were seeking mechanical associates with at least two years of relevant experience.

Labour market outlook

Demand for mechanical engineering associates is likely to remain firm over the short term. The CFC expects growth in non-residential construction in NSW to remain at nine per cent in 2006-07 and 2007-08. The March quarter *Survey of Manufacturing* found that production was expected to increase in 2007. No significant increase in supply from course completions is expected over the short term. Therefore shortages should continue in 2007.

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| Mechanical Engineering Associate Professionals | | Victoria |
| ASCO Code: 3125 | March 2007 | |
| Labour market rating | Recruitment difficulty | |
| Comment: <i>Recruitment difficulties restricted to vacancies requiring specific knowledge and experience.</i> | | |

Occupational demand

Demand for mechanical engineering associate professionals in Victoria is largely determined by the level of activity in the manufacturing sector. Most of Victoria's manufacturing companies make components that are turned into a range of goods, including motor vehicles. Nationally, transport equipment manufacturing is continuing to decline (*Survey of Australian Manufacturing, September Quarter 2006*). Manufacturing employment in Victoria has also seen a downturn from 2004-2005, a fall of 2.5 per cent. The Survey of Australian Manufacturing forecast an ease in production growth in the next three months. DEEWR Skilled Vacancies Index data suggests demand for mechanical engineering associate professionals has continued to decline since 2001, 2006 vacancies compared to 2000 show a decrease of approximately 82 per cent.

Occupational supply

ABS Education and Work figures suggest around 48 per cent of employed mechanical engineering associates nationally have Certificate III or IV qualifications. DEEWR estimates the percentage of persons in Victoria who have completed a traineeship relating to mechanical engineering increased by approximately 25 per cent from 2004-05 to 2005-06. The percentage of persons in 2004-05 is similar to those of 2003-04. Supply to the profession from net immigration has significantly increased, up by around 140 per cent from last year. Net immigration to Victoria during 2005-06 was approximately 36 mechanical engineering associate professionals.

Employer and industry comments/current labour market

The Survey of Employers who Recently Advertised (SERA) found approximately 40 per cent of mechanical engineering associate professional vacancies were filled. The average number of suitable applicants per vacancy was 6.2 and the average number of unsuitable applicants per vacancy was 42. Some employers had a large number of suitable applicants and were able to fill the position, whereas other employers had a large number of unsuitable applicants and were not able to fill the position.

Employers considered many applicants unsuitable due to lack of high level appropriate skills and industry specific experience. Employers were looking for applicants with practical, hands-on engineering experience, preferably in a mechanical background, but were also looking for experience in other associated trades, such as toolmaking. Employers were seeking applicants with experience and knowledge of specific computer software packages, such as AutoCAD. Highly developed communication skills and an ability to co-ordinate with other skilled workers were also an expectation employers had of candidates. Where the position was not in inner city, employers commented that location was a factor making it difficult to fill vacant positions. According to employers, factors that are currently affecting the demand for mechanical engineering associate professionals include the downturn in both the rural economy and the automotive component industry. Approximately 70 per cent of employers stated there is low turnover of existing employees and attributed it to high job satisfaction.

Labour market outlook

The relatively balanced labour market for mechanical engineering associate professionals in Victoria is expected to continue over the next six months, with recruitment difficulties persisting for vacancies requiring specific knowledge and experience.

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| Mechanical Engineering Associate Professionals | | Queensland |
| ASCO Code: 3125 | | March 2007 |
| Labour market rating | Shortage | |
| Comment: <i>Senior associates and those with 3D software experience were most difficult to recruit.</i> | | |

Occupational demand

Mechanical engineering associate professionals design, build, test and maintain machinery using design software, drawing equipment and hand tools. Employment opportunities vary in line with activity in consultancy firms and developments in the manufacturing, mineral resources, electricity, gas and water supply industries. Demand in Queensland is currently high, with large numbers of vacancies coming from manufacturing and materials handling and logistics firms. The factors elevating demand include Queensland's booming mineral resources sector, the need for improved logistics in order to significantly increase export volumes and the growing use of automation to overcome skill shortages. DEEWR's Skilled Vacancies Index indicates that the annual number of vacancies recorded in Queensland for this group almost tripled over the year to March 2007.

Occupational supply

Formal qualifications for these occupations can be at diploma, advanced diploma or associate degree level. Relevant diploma and advanced diploma programs are available through registered training organisations while an associate degree is available at the University of Southern Queensland (USQ) and Central Queensland University. Data could only be obtained for the associate degree program at USQ, where enrolments and graduations have remained essentially constant since 2001. The average number commencing each year has been 25 and wastage is seemingly high for this program, with an average of only about 7 graduations each year. Direct international migration may assist in supplying this occupation, with a net gain to the State of 37 self-identified mechanical engineering associate professionals in 2005-06. However, Labour Force Survey data show recent increases in the numbers employed in Queensland that are much larger than can be attributed to formal education and training or overseas migration, indicating that interstate migration and on-the-job training are also likely to be significant sources of supply.

Employer and industry comments/current labour market

In this year's survey, 21 per cent of the vacancies for these occupations were filled within six weeks of advertising. More than 50 per cent of the applicants were considered unsuitable due to their having limited or no experience. In most cases where applicants had experience it was outside of the employing industry. All levels of proficiency and qualifications were in demand but most positions were for long-term experience and/or competency in 3D modelling. Workers with five years or more experience were very difficult to recruit and finding applicants with ten years or more experience was said to be impossible. Respondents claimed that the absence of suitable applicants at this level is due to skilled people moving on into management roles. A number of contacts reported that associates have traditionally been engaged in large-team project work where their skills have been confined to one area. Aware of this issue, some employers now insist on rotating workers to ensure that they acquire a wide range of skills. Recruitment specialists consider overseas applicants to be a viable option for many jobs, particularly those primarily requiring software competency rather than highly developed communication skills.

Labour market outlook

As Queensland's mineral resources industry continues to expand its production capacity, supporting industries such as manufacturing and materials handling firms are also expanding. Much of the growth in demand for mechanical engineering associate professionals is coming from these areas. Supply from all sources presently falls well short of meeting demand. It is therefore expected that the current shortage in this occupational group will continue through 2007.

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| Mechanical Engineering Associate Professionals | | South Australia |
| ASCO Code: 3125-11 | March 2007 | |
| Labour market rating | No Shortage | |
| Comment | | |

Occupational demand

There are around 600 persons employed as mechanical engineering associates in South Australia. ABS Census data show that 52 per cent were employed in the manufacturing industry in 2001 with a further 29 per cent employed in the property and business services industry. Business levels in the State's manufacturing sector are currently subdued due to increased competition from low cost import replacement items, the loss of existing contracts to off-shore companies, and the persistently high Australian dollar. The effect on the automotive manufacturing sector has been especially severe, with significant numbers of retrenchments occurring in the past two years. Manufacturing firms with exposure to the mining industry have been less affected by these developments, benefiting from the strong global demand for mining commodities. DEEWR's Skilled Vacancies Index data show that the number of newspaper vacancies for mechanical engineering associates peaked in 2003 but declined in 2004. Since then, vacancy levels have remained at the lower level. This trend closely reflects production and export activity in the State's manufacturing industry over the period.

Occupational supply

The major source of supply into this occupation is through completion of trade training. According to the 2001 ABS Census, around 48 per cent of electrical engineering associates have Certificate III (trade) or IV as their highest qualification. Another major source of supply is from TAFE graduates who have completed either the Diploma in Mechanical Engineering (Drafting or Design) or the Advanced Diploma in Mechanical Engineering (Design). Due to administrative problems associated with the introduction of a new enrolment system, commencements data for 2004 and 2005 under-estimate the number of commencements. In 2006 there were 229 commencements, which represented a significant increase on the 180 commencements recorded in 2003. Most of the increase was in part-time students, many of whom are already employed in related occupations. In addition to supply to the occupation from formal training, there has been a small net inflow from overseas migration over the past few years.

Employer and industry comments/current labour market

A survey of employers who had recently advertised for mechanical engineering associates in the newspaper indicated that around a third were filled within six weeks. Nonetheless, employers use a variety of methods to fill vacant positions with many using recruitment agencies. Employers who advertised this way did not report difficulties recruiting. Other companies employ mechanical engineering tradespeople, and offer financial assistance to them to upgrade their qualifications to the diploma or advanced diploma level. These firms reported no difficulties finding sufficient internal applicants for their up-skilling programmes. Additionally, some firms have established close links with TAFE via work experience opportunities and these can result in offers of employment to students. Therefore, given the range of recruitment options available to employers, most are able to fill their vacant positions.

Labour market outlook

Engineering construction activity is likely to increase over the next few years due to a number of large projects including the possible expansion of the Olympic Dam mine and the Air Warfare Destroyers project. Also, the value of capital expenditure in manufacturing has increased over recent years. Therefore, although there is currently no shortage of mechanical engineering associates, demand is expected to grow and thus skill shortages may emerge over the next 12 months.

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| Mechanical Engineering Associate | | Western Australia |
| ASCO Code: 3125-11 | | June 2007 |
| Labour market rating: | Shortage | |
| Comment | | |

Occupational demand

Demand for mechanical engineering associates has continued to increase due to a buoyant Western Australian economy, driven particularly by the resources sector. Australian Bureau of Statistics data shows that the value of engineering construction work done in WA continues to grow, fuelling the demand for more skilled mechanical engineering associates. The Australian Bureau of Statistics Labour Force Survey shows that property and business services, manufacturing, construction and wholesale trade are the main employing industries.

Occupational supply

Several Perth metropolitan and regional TAFE campuses offer courses at the diploma and advanced diploma level, with graduates receiving qualifications that deal in engineering processes and principles. Further specialised roles are available through formal training, mixed with practical experience. However, applicants with qualifications and several years experience in computerised drafting and drawing are highly sought after. Inter-state migration and on-the-job training also add to some level of occupational supply.

Employer and industry comments/current labour market

A survey of employers who had recently advertised for mechanical engineering associates showed that 71 per cent of vacancies were filled. There was an average of 8.5 applicants per vacancy, although the number of suitable applicants was low, at around 2.5 per position. The main reasons for rejecting applicants were their lack of skills, qualifications and experience. Employers stated how hard it was finding an applicant who had the necessary skills to commence work with them. Some offered applicants additional training on the job to complement their training received through TAFE, in specialised areas such as CNC machining and instrumentation. According to many employers, there are not enough suitable candidates coming onto the labour market.

Labour market outlook

Western Australia is forecast to experience continued low rates of unemployment and high participation rates. The State is also expected to continue to enjoy economic growth. Since 2000-01, WA has experienced a 39 per cent increase in real economic terms. There is an estimated \$21.6 billion of State Government capital works over the next four years and \$95 billion worth of resource related projects either underway or planned for the State over the next few years. The ABS Labour Force Survey illustrates that employment in mining in Western Australia continues to grow, and that across Australia, employment in mining is heavily concentrated in the Perth and Greater WA labour market regions. Shortages in the number of mechanical engineering associates, especially in highly specialised roles, are expected to persist

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| Mechanical Engineering Associate | | Tasmania |
| MO Code: 4421-11 | March 2007 | |
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Occupational demand

There were just 71 mechanical engineering associates employed in Tasmania at the time of the 2001 ABS Census. Of these, approximately 39 per cent were employed in the manufacturing sector and 20 per cent in consultancy services. The manufacturing sector is the third largest employing industry in Tasmania and turnover within the industry would be expected to generate significant levels of demand. However, while turnover may necessitate the need for an adequate supply into the workforce, employment in the State's manufacturing industry has been declining, largely due to technological advancements. This decline would be expected to predominately impact on the lower skilled end of the workforce.

Occupational supply

The main source of supply of mechanical engineering associates in Tasmania is through the TAFE training system. Courses are available at the diploma and advanced diploma level in Mechanical Engineering (Design) and Mechanical Engineering (Drafting). The qualifications are recognised by the University of Tasmania, which may grant credit of up to 18 months towards an engineering degree. Sources from TAFE report that enrolments in the mechanical engineering diploma course have increased in recent years. There were a total of 8 completions in 2006 and 18 students have enrolled for 2007. A small number, about two per year, go on to university studies in mechanical engineering, according to industry sources.

Employer and industry comments/current labour market

There were no vacancies for mechanical engineering associates advertised in the lead up to this report. Few employers who were contacted had recruited for the occupation in the last six to twelve months. However, all employer and industry sources reported that mechanical engineering associates were in shortage. It was suggested that this was, in part, due to the small size of the occupation and low number of students completing TAFE training. Several employers commented that they preferred to employ degree qualified mechanical engineers, suggesting that demand for mechanical engineering associates is in decline. However, it was also reported that students graduating from the TAFE are highly sought by employers and have little difficulty finding employment. Recent increases in TAFE enrolments were attributed to more marketing of the occupation and its career prospects.

Labour market outlook

Employer and industry sources support a rating of shortage. Shortages may ease in twelve to eighteen months due to the increase in students in training and decreasing in demand.

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| Mechanical Engineering Associate | | Northern Territory |
| ASCO Code: 3125 | January 2007 | |
| Labour market rating | Shortage | |
| Comment: | | |

Occupational demand

ABS Census data show that there were 18 mechanical engineering associates employed in the NT in 2001. The value of building work done increased strongly in 2004, 2005 and into 2006, reaching the highest level (in chain volume measure terms) since the construction boom peak in 1998 and 1999 (ABS Building Activity; 8752.0; September Quarter 2006). Major engineering works (such as the Wickham Point LNG plant construction and the Alcan G3 refinery expansion) have had a large impact on the NT economy and the number of mining and resource projects underway in the NT has increased. The resource and construction lead economic boom in the NT is likely to have created increased demand for mechanical engineering associates.

Occupational supply

There are no local training courses available at the diploma level specifically in mechanical engineering. Employers do however recruit from related courses available at Charles Darwin University (such as the Diploma in Building Design and Drafting). Students are typically recruited prior to the completion of their course. This is due to the strong competition for quality students and employers can influence and train them in the mechanical engineering area.

Employer and industry comments/current labour market

Employers who had recently advertised for mechanical engineering associates had difficulty filling their vacancies, with a fill rate of 25 per cent. Although employers would have liked to increase the number of associates working for them (due to increased demand), just retaining existing numbers has proven difficult.

Vacancies are typically advertised widely, including national and interstate newspapers, on-line and posted with recruitment agencies to source applicants. However, very few applicants with suitable skills or experience were attracted to the vacancies. Employers would consider sponsoring overseas applicants, however the requirement for strong communication skills and an understanding of Australian regulations tended to make them unsuitable. Employers claimed it was hard to attract interstate applicants due to high demand also existing elsewhere in Australia.

Employers claim that some recruitment agencies have adopted headhunting techniques to source applicants for clients locally and this has bid up wages and increased turnover. Engineering firms have also lost employees to the mining industry with increased demand coming from this sector. Turnover is not as high for government engineering associate roles. However, when departures do occur resulting vacancies are sometimes unable to be filled and there has been a decline in public sector roles. Employers suggest that there is more demand than can be catered for and this has led them to be more selective and less aggressive when bidding for tenders.

Labour market outlook

Employers commented that the resources boom was set to continue and strong demand for mechanical engineering associates would prevail over the coming year. Attracting new supply is likely to remain difficult and the occupation is likely to remain in shortage for the coming year.