Chapter 4
Skills planning and development

4.1. Rail is a complex industry that requires a wide range of skills that are often highly specialised and unique to the rail context. The Victorian rail industry is currently experiencing skill shortages in a range of occupations that are critical to rail operations. Without effective intervention to address these shortages, the reliability and safety of the network are likely to deteriorate. Further, Victoria will not be well placed to address the economic and environmental challenges facing the industry, including sustainable growth in freight services.

Education and training in the Victorian rail industry

4.2. Education and training takes many forms, reflecting the variety of skills required across the workforce. Training includes both formal and informal learning: formal learning is a structured program that includes assessment by a registered training organisation or university, and leads to a recognised qualification; informal learning does not have a recognised qualification outcome, although it may involve structured learning activities and/or some form of assessment. Formal education and training must be conducted or overseen by either a registered training organisation or a higher education provider.

Qualification levels of the rail industry workforce

4.3. Historically, new railway employees often did not have access to formal training, unless it was deemed part of their advancement or career path. For example, a junior employed within the Traffic Branch of the Victorian Railways would undertake a Safeworking Certificate, while a rolling stock junior would undertake a Firemen’s Ticket. Training was available through either the Victorian Railways Institute or the Public Transport Corporation, and was one of the only means (other than on-the-job training) by which rail workers gained the necessary skills.

4.4. The development of state and national qualifications has led to the rail industry adopting more generic qualifications. For example, signalling technicians now undertake general trade qualifications before specialising in rail signalling. However, some trades with small intakes and/or outmoded work practices have been rationalised without being translated into formal qualifications.

4.5. In recent years, the rail industry has shifted its focus away from training for the long term, to training for specific needs or short-term outcomes. For example, rail operators have tended to focus on customer service training in an attempt to achieve the service delivery standards required under the terms of their franchise contracts.
Inquiry into Skills Shortages in the Rail Industry

At the same time, there has been little emphasis placed on training in the traditional trades. The Committee found that this practice has contributed to the current skill shortages in areas critical to rail.

4.6. A profile of qualifications within the rail industry workforce shows rail employees are generally less qualified than workers in many other industries. In 2008, less than half of the rail industry workforce held a qualification at certificate III or higher, while only 23 per cent had a qualification at the level of diploma or above (refer Table 4.1).

Table 4.1: Highest level of qualification for rail industry workers in Victoria (2008)

<table>
<thead>
<tr>
<th>Education sector</th>
<th>Highest qualification</th>
<th>% of workforce</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary</td>
<td>Year 12 or below</td>
<td>49</td>
</tr>
<tr>
<td>VET</td>
<td>Certificate I and Certificate II</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Certificate III and Certificate IV</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Diploma</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Advanced Diploma</td>
<td>-</td>
</tr>
<tr>
<td>Higher Education</td>
<td>Degree</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Graduate Certificate</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Graduate Diploma</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Masters</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Doctorate</td>
<td>-</td>
</tr>
</tbody>
</table>


4.7. The Victorian Government's submission noted that in coming years, the proportion of rail workers with qualifications at certificate III level and above will increase in line with the general rise in the qualification profile of younger age groups. It also noted, however, that the rapid growth in the industry will mean that there will continue to be large numbers of rail employees with qualifications at year 12 or below.\(^{201}\)

4.8. Most rail industry training undertaken in Victoria over the period 2002 to 2008 was at the certificate III level (mostly for the roles of customer service or authorised officer). Although certificate IV level enrolments have increased in recent years, they only represent around 10 per cent of rail industry training, and are mostly attributable to an increase in the number of train drivers being trained.\(^{202}\)

4.9. The Committee recognises that the relatively low levels of formal qualifications across the rail industry reflect traditional employment and training practices in the industry, rather than the level of skill required for rail-related occupations. Indeed, there are many roles within the industry that are highly specialised and require many years of training and experience to master.

4.10. The Committee believes that one important strategy to assist in identifying skill shortages in the rail industry would be to better track the qualifications of existing employees. This could be achieved through the introduction of an accreditation and registration system for safety critical roles within the industry. The Committee believes that this would also help to raise the qualification levels of rail industry employees.

\(^{202}\) Ibid., 14.
workers more generally, by ensuring that all safety critical workers are appropriately qualified. The Committee notes that accreditation and/or registration systems have been successful in other parts of the transport industry (for example, the taxi and heavy vehicle sectors) where they have helped to raise professionalism, standards and safety.

4.11. In particular, the Committee believes that the registration system should cover roles such as train drivers, signallers, train controllers, train examiners, overhead lineworkers, substation technicians, signal maintenance technicians, track inspectors and verifiers, electrical and mechanical fitters, and engineers and project personnel. The Committee believes that the registration system should identify appropriate levels of certification for these safety critical roles and include processes for ongoing reaccreditation of worker qualifications.

Legislative requirements for training and development in the rail industry

4.12. The Rail Safety Act 2006 places certain expectations on rail operators to provide adequate training for rail workers, including ensuring safety critical competencies are undertaken and maintained throughout an employee’s working life. It also stipulates that the Governor in Council can make regulations in respect to certificates of competence for rail safety workers, including the duration, variation, suspension and cancellation of those certificates.

4.13. The rail safety regulations prohibit rail safety work from being undertaken if an employee does not hold an appropriate certificate of competence or qualification, or does not have adequate industry training and experience. ‘Experience’ in this context translates to substantial rail experience and is therefore only relevant to existing workers, rather than to employees who are new to the industry.

4.14. The rail safety regulations outline the appropriate mechanisms for rail operators to ensure that each rail safety worker undertakes applicable units of competence or other appropriate qualification. These may include, for example, a qualification under the Australian Qualifications Framework, a competence specified by the Safety Director and published in the Government Gazette, or the demonstration of skills, knowledge and experience required for the specific rail safety work to be undertaken.

4.15. Rail operators must maintain records detailing the training undertaken by employees. Records must include the units of competence completed, the level of the qualification, the date and, where relevant, when any retraining was due to be undertaken and when it was completed. In addition, rail operators must record the name of the training organisation, the result of any assessment, and the name and qualification of the person assessing a worker’s competence.

Rail industry training packages

4.16. Vocational qualifications in Australia are structured as national industry training packages, which are sets of nationally-endorsed standards and qualifications for recognising and assessing skills, including the recognition of current competency. Training packages are developed by industry skills councils and endorsed by the National Quality Council. Only registered training organisations are permitted to issue training package qualifications or statements of attainment. Training and assessment may be conducted through a range of on-the-job and off-the-job activities.
4.17. Training packages generally include qualifications spanning certificate I through to advanced diploma. Each qualification comprises individual units of competence that identify a discrete workplace requirement for the relevant industry. Units of competence include the knowledge and skills that underpin the competency, as well as language, literacy and numeracy, and occupational health and safety requirements.203

4.18. Table 4.2 shows the main rail-specific VET qualifications available to students in Victoria in 2009, by training provider.

Table 4.2: Main rail-specific VET qualifications delivered in Victoria, by training provider (2009)

<table>
<thead>
<tr>
<th>Training provider</th>
<th>Qualification</th>
</tr>
</thead>
</table>
| Victoria University (TAFE Division) | • Certificate II in Transport and Logistics (Rail Operations)  
• Certificate III in Transport and Logistics (Rail Operations)  
• Certificate IV in Transport and Logistics (Rail Operations)  
• Certificate III in Public Transport Customer Service and Compliance |
| Rail Training International Pty Ltd | • Certificate IV in Transport and Logistics (Rail Operations)  
• Certificate IV in Rail and Tram Signalling Systems  
• Certificate III in Public Transport Customer Service and Compliance |
| University of Ballarat (TAFE Division) | • Certificate II in Transport and Logistics (Rail Infrastructure)  
• Certificate III in Transport and Logistics (Rail Infrastructure)  
• Certificate III in Public Transport Customer Service and Compliance |
| GippsTAFE | • Certificate III in ESI – Rail Traction |

Source: Compiled by the Education and Training Committee, April 2010.

4.19. The key industry skills councils involved in the development of the above qualifications are the Transport and Logistics Industry Skills Council and EE-Oz Training Standards.

Training providers

4.20. A key factor in the success of rail industry training is the availability of sufficient training organisations that are both capable and willing to deliver training.

4.21. The Victorian Government’s submission identified six main organisations which provided training for the rail industry over the period 2001 to 2008. Table 4.3 shows the number of enrolments in rail-related courses in Victoria over this time.

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Table 4.3: Number of enrolments in rail-specific VET courses in Victoria, by training provider (2001 to 2008)

<table>
<thead>
<tr>
<th>Training provider</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ashley Institute of Training</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>33</td>
</tr>
<tr>
<td>Box Hill Institute</td>
<td>11</td>
<td>11</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>52</td>
</tr>
<tr>
<td>GippsTAFE</td>
<td>13</td>
<td>9</td>
<td>6</td>
<td>6</td>
<td>15</td>
<td>11</td>
<td>14</td>
<td></td>
<td>74</td>
</tr>
<tr>
<td>International Transport Training and Development (ITTD)</td>
<td>108</td>
<td>118</td>
<td>129</td>
<td>121</td>
<td>89</td>
<td>111</td>
<td></td>
<td></td>
<td>676</td>
</tr>
<tr>
<td>University of Ballarat (TAFE Division)</td>
<td>1,807</td>
<td>202</td>
<td>8</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2,085</td>
</tr>
<tr>
<td>Victoria University (TAFE Division)</td>
<td>106</td>
<td>386</td>
<td>826</td>
<td>493</td>
<td>516</td>
<td>472</td>
<td>369</td>
<td>676</td>
<td>3,844</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>119</strong></td>
<td><strong>386</strong></td>
<td><strong>2,761</strong></td>
<td><strong>830</strong></td>
<td><strong>685</strong></td>
<td><strong>652</strong></td>
<td><strong>469</strong></td>
<td><strong>862</strong></td>
<td><strong>6,764</strong></td>
</tr>
</tbody>
</table>


4.22. Victoria University was the largest provider of rail industry training in Victoria over the period 2001 to 2008, accounting for 56 per cent of the 6,764 enrolments over this time. The Committee notes, however, that the majority of Victoria University's training was in above rail activities, including customer service and authorised officers, rather than in the critical below rail trade and engineering roles which continue to experience the most severe skill shortages in the industry.

4.23. The University of Ballarat was the second largest provider of rail-specific training over the same period, although this was largely attributable to a Recognition of Current Competency process undertaken for track maintainers in 2003. Since then, the university has delivered very little training to the rail industry, other than to authorised officers. Metro Trains Melbourne has indicated that the University of Ballarat will provide training in 2010 as part of its induction, authorised officer and driver training programs.

4.24. International Transport Training and Development saw a relatively stable number of enrolments in its two key courses, driver training and signalling, over the period 2003 to 2008. GippsTAFE and Box Hill Institute were involved in the delivery of a small number of electrical and electrotechnology places for rail workers in the overhead and signal maintenance areas. The Committee notes that a number of small specialist training providers deliver training into specialist or niche markets.

4.25. The Committee recognises that the data presented above does not represent the full picture regarding rail industry training. For example, the data does not include a small number of trainees who may have enrolled in engineering and general maintenance courses offered by these providers. Further, while all government-funded training places are included in the data, fee-for-service activity is only partially reported. In addition, a number of rail operators (including V/Line Passenger and Yarra Trams) undertake a substantial amount of in-house training.

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4.26. A strong theme in evidence to the inquiry was the perceived weaknesses associated with the current rail industry training packages. It was apparent throughout the inquiry that much of the rail-related training currently undertaken is not held in high regard by many in the industry. Consequently, there has been a continued reliance on in-house training in many rail organisations. The Committee notes that this has increased the level of fragmentation in industry training and resulted in a further reduction in an already thin education and training market, potentially limiting the commercial attractiveness to training providers of developing and delivering rail-related courses.

4.27. A 2007 Senate committee inquiry identified similar concerns about the quality of industry training, with data from the National Council for Vocational Education Research showing that only 69 per cent of employers in the transport industry were satisfied with vocational education and training (VET), which was 10 percentage points lower than for employers across all industries. In 2006, the Australasian Railway Association reported a lack of consistency in rail-related training, including variation across Australia in the types of training available, the duration of various courses, and the recognition given to training completed in other states. It also noted that not all rail operators or regulators recognise the industry training package.

4.28. In particular, the Transport and Logistics Training Package received much criticism throughout the inquiry. The Transport and Logistics Industry Skills Council has itself recognised certain limitations with industry training packages, which make it difficult for training providers to meet industry needs. For example, the council’s rail training package specialist, Mr Rae Fossard, explained that the varying characteristics of different state rail systems make it difficult to respond to industry needs within a national training package:

The most obvious outcome of this are the different gauges across the nation … we also have the issue of different signalling systems. … If the train driver in Victoria sees a particular signal and drives on a piece of track in New South Wales, the same signal can give the opposite information, which causes issues to say the least.

4.29. Mr Fossard further suggested that the package does not require the demonstration of essential technical skills. For example:

We have a glaring example of Certificate II in Signalling which is made up of 14 units from the training package, and not one of them actually relates to signalling.

4.30. Mr Frank Feldman, director of Railcom, commented that the training package is disjointed and misleading and does not cover certain industry tasks that are required under legislation. He suggested that a new trade-based program in rail infrastructure be developed, to sit above the current Transport and Logistics qualification.
4.31. V/Line Passenger supported this view, indicating that track workers have never been recognised as a trade, despite having requirements and standards of work that are equally as exacting as those required for recognised trades.211

4.32. The Committee heard that a further limitation of the Transport and Logistics Training Package is the ‘nesting’ of qualifications, meaning that lower level qualifications form prerequisites for the more advanced qualifications within the package. Consequently, the training package design assumes that all skills develop from the same entry point, rather than allowing those with relevant knowledge and experience to undertake qualifications at more advanced levels.

4.33. The Committee notes that the ‘nesting’ of qualifications conflicts with best practice in training package design. It is therefore pleased to note that the Transport and Logistics Industry Skills Council is working towards a new training package that will more accurately reflect job roles within the rail industry, whilst recognising workers’ current competencies.212

4.34. A 2008 report for the Australasian Railway Association supported the view that the Transport and Logistics Training Package is too broad, and the import rules too restrictive.213 It stated that consideration should be given to repackaging the qualification on the basis of core and elective units of competence, and with greater flexibility to allow units to be imported from complementary qualifications.214

4.35. The Committee was informed that the Transport and Logistics Industry Skills Council would have new qualifications in track infrastructure, tram driving and train driving by the end of 2009, with plans to review the remaining rail operations and network roles in 2010.215 One of the aims of the repackaging is to identify the consistent parts of each qualification and each role to ensure that the qualification is transferable across and within different jurisdictions. The Committee notes, however, that as at December 2009, the Transport and Logistics Industry Skills Council had only submitted the tram driver qualification and part of the infrastructure qualification for reaccreditation.

4.36. The Committee also received comments about the EE-Oz Training Standards’ training packages. The availability of training providers and the suitability of some units of competency were raised. A submission from the Western Australian Department of Education and Training commented that training for signal maintenance technicians is conducted in-house due to the lack of suitable local training providers.216 Further, an employee of Downer EDI commented that electrical workers are required to complete competencies that are associated with domestic electrical work, even though they do not need these competencies for their roles within the rail industry. He suggested that if current or potential rail workers are exposed to the domestic electrical industry during their training, they may be attracted away from the rail industry if offered more lucrative employment

211 Supplementary information provided by V/Line Passenger Pty Ltd, July 2009.
214 Ibid.
216 Department of Education and Training, Western Australia, Written Submission, May 2009.
opportunities, particularly in times of a housing boom. The Committee notes this issue but believes that a broad-based qualification is still warranted at this level.

4.37. The Committee is disappointed to note that despite longstanding skill shortages in the rail industry, the relevant industry training packages have not kept pace with changes in the industry, or the needs of individual organisations. The Committee therefore supports an urgent review of rail-specific training packages, especially in areas of critical skill needs and current and emerging skill shortages. The Committee believes that this should occur through close collaboration and cooperation between rail operators, industry bodies, relevant government departments and agencies and training providers.

Apprenticeships

4.38. As the main training pathway for critical roles within the rail industry, the supply of and demand for apprenticeships were of key interest throughout the inquiry.

Current supply and demand for rail industry apprenticeships

4.39. The Committee requested information from the main Victorian rail operators about projected apprenticeship commencements and completions over the period 2010 to 2012.

4.40. Metro Trains Melbourne told the Committee that it will employ 12 first-year apprentices in 2010, but did not plan any additional apprenticeship commencements in the following two years. V/Line Passenger indicated that it would employ five apprentice signal maintenance technicians in 2011, and another four in 2012. Yarra Trams planned to employ four apprentice electrical and mechanical fitters for each of the next three years, and two apprentice lineworkers in 2010 and 2011. It is delaying the employment of any new apprentice signal maintenance technicians or substation technicians until 2012.

4.41. The Committee notes that in the manufacturing and maintenance areas, Alstom and United Melbourne Transport Ltd (UMTL) have had a total of only 13 apprentices since 2000, and of these, only five remain rail employees. United Group Ltd provided information to the Committee showing that since 2006, it has recruited seven apprentice electrical and mechanical fitters, with the intention to take on five additional apprentices in 2011. Bombardier Transportation advised the Committee that it currently has four electrical/mechanical apprentice fitters, and that it intends to employ four apprentice diesel mechanics in 2011–12. Given the size and disparate nature of activities within the component supply sector, the Committee was unable to obtain accurate apprenticeship data for businesses involved in the supply of rail-related components.

4.42. The Committee believes that the apprenticeship commencements planned over the next three years are likely to be insufficient in the context of current and emerging skill shortages, predicted growth within passenger and freight operations, and the

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217 Mr R. Pink, Rolling Stock Manager, EDI Rail, Written Submission, March 2009, 1.
218 Supplementary information provided by Metro Trains Melbourne, March 2010.
219 Supplementary information provided by V/Line Passenger Pty Ltd, April 2010.
220 Supplementary information provided by Yarra Trams, March 2010.
221 Electrical Trades Union of Australia, Victorian Branch, Written Submission, April 2009, 5.
222 Supplementary information provided by United Group Limited, February 2010.
223 Supplementary information provided by Bombardier Transportation, April 2010.
increasing national and international competitiveness of the rail industry. The number of apprenticeship commencements is negligible, especially when compared with those in New South Wales and Queensland, where apprenticeships are offered across a wide range of occupations (refer Table 4.4).

Table 4.4: Number of rail industry apprenticeship commencements in New South Wales and Queensland (2009 and 2010)

<table>
<thead>
<tr>
<th>Apprenticeship</th>
<th>New South Wales</th>
<th>Queensland</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2009</td>
<td>2010</td>
</tr>
<tr>
<td>Blacksmith</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Boilermaker</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cable Joiner</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Diesel Mechanic</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Electronics</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Fitter</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Lifts and Escalators</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Rail Traction (Lineworker)</td>
<td>30</td>
<td>9</td>
</tr>
<tr>
<td>Rolling Stock Body Building / Trimmer</td>
<td>5</td>
<td>-</td>
</tr>
<tr>
<td>Rolling Stock Electrical</td>
<td>10</td>
<td>-</td>
</tr>
<tr>
<td>Rolling Stock Fitter</td>
<td>8</td>
<td>-</td>
</tr>
<tr>
<td>Signal Fitter</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Signal Maintenance Technician (SMT)</td>
<td>16</td>
<td>32</td>
</tr>
<tr>
<td>Substation Technician (ST)</td>
<td>16</td>
<td>25</td>
</tr>
<tr>
<td>Systems Electricians (SMT and ST)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>99</strong></td>
<td><strong>88</strong></td>
</tr>
</tbody>
</table>

Source: New South Wales data provided by D. Catterall, Team Leader, Workforce Planning, Human Resources, Railcorp, 16 February 2010; Queensland data provided by C. Stewart, Manager Stakeholder Relations, Corporate Affairs and Stakeholder Relations, QR Limited, February 2010.

4.43. The Committee heard a number of explanations for the low number of apprenticeships undertaken in Victoria. For example, the Electrical Trades Union told the Committee that many employers do not see apprentices as being financially viable until their third year. As a consequence, employers are likely to take on later year apprentices, or even to recruit fully qualified workers rather than invest in the longer-term process of training apprentices who may opt to leave the industry for more lucrative opportunities on completion of their apprenticeship. Downer EDI told the Committee that of 22 apprentices employed across its various depots, only 10 per cent remain with the organisation two years after completing their trade training, with most of the others leaving the industry to obtain better pay and conditions.
4.44. Additionally, the Committee heard that restructuring within the industry makes it more difficult for employers to train in all competencies required within a qualification:

Through their training with the Victorian Railways, graduate engineers and apprentices would rotate through a series of work locations where they would be systematically exposed to the full range of work associated with the development, operation and maintenance of the railway network. Through this exposure the necessary knowledge and skills were developed.\textsuperscript{226}

4.45. The Committee notes that small training groups can also present a cost barrier to training providers wishing to deliver apprenticeship training.

4.46. Further, the Committee received evidence regarding the lack of suitable trainers and workplace assessors, especially in critical job roles. For example:

Despite numbers in training, consultation suggests there is still some disorganisation in parts of the industry. This shows up as a shortage of trainers on the first hand, and a shortage of mentors on the other. Finding good trainers with the necessary technical knowledge is seen as particularly difficult. Compounding this, once hired, there are significant problems retaining staff in training roles which are seen as stressful. Many trainers end up moving back into technical roles which are better paid and less demanding. This is compounded by rail being highly specialised and people are not easily recruited from other industries.\textsuperscript{227}

4.47. The Committee recognises this as a key issue, given the age profile of the rail industry workforce and the expected retirements of the most highly skilled rail workers. It therefore believes that the Victorian Government should investigate the number and availability of appropriately qualified workplace trainers and assessors, and work with the operators to address any gaps between the supply and demand for these roles.

4.48. The Committee also acknowledges that there are a number of disincentives for young adults to undertake apprenticeship training. In particular, apprenticeship wages are very low, with electrical apprentices receiving around 65 per cent of the adult wage and metal trades apprentices receiving around 42 per cent of the adult wage in their first year. Further, training times can be lengthy from both the employee’s and the employer’s perspective.

\textbf{Future supply and demand for rail industry apprentices}

4.49. The Committee believes that an increase in the number of apprentices will be one of the key strategies for addressing skill shortages in the Victorian rail industry.

4.50. During its deliberations, the Committee attempted to quantify the number of apprenticeships required in key roles within the Victorian rail industry over coming years. The Committee has based its suggested apprenticeship intake on an analysis of evidence to the inquiry, industry literature and comparisons with other jurisdictions. In doing so, the Committee has considered the areas of greatest need, the potential risks to rail operations if existing skill shortages are not addressed, and the lead time associated with developing skills in the relevant job roles.

4.51. The Committee has identified a minimum projected need for 47 first-year apprentices to be employed in the Victorian rail industry, followed by a further 95 first-year

\textsuperscript{226} Coffey Rail Pty Ltd, Written Submission, April 2009, 4.
\textsuperscript{227} Meeting with representatives of Competenz, Auckland, 22 October 2009.
apprentices to be employed over the following three years. These apprentices would be spread across a range of occupations and industry operators (refer Table 4.5).

4.52. In particular, the Committee would like to see a significant and sustained increase in the number of apprenticeships in signalling, overhead, maintenance and manufacturing. This is consistent with apprenticeship numbers in Queensland and New South Wales.

Table 4.5: Suggested number of first-year apprenticeship commencements within the Victorian rail industry (2011 to 2014)

<table>
<thead>
<tr>
<th>Apprenticeship</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rail operators</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signal Maintenance Technician</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>48</td>
</tr>
<tr>
<td>Lineworker (Rail Traction)</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>Substation Technician</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Fitter – Electrical</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Fitter – Mechanical</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Service providers</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signal Maintenance Technician</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Diesel Mechanic/Fitter</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Rolling stock manufacturers/maintainers</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fitter</td>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Body Building and Repairs</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Diesel Mechanic</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td><strong>Rail projects/construction</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signal Maintenance Technician (Installer)</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Boilermaker/Welder</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Fitter – Mechanical</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>47</td>
<td>26</td>
<td>43</td>
<td>26</td>
<td>142</td>
</tr>
</tbody>
</table>

Source: Education and Training Committee estimate of the required number of apprenticeships within the Victorian rail industry over the next four years, April 2010.

4.53. The Committee believes that the above figures are relatively conservative, but realistic, considering the following factors: the existing age profile and projected retirements in the Victorian rail workforce; the long lead time in establishing replacement workers; the cost of hiring; and the availability of workplace trainers to supervise and assess apprentices during their training. Final apprenticeship intakes will need to be determined following an industry skills audit (refer Recommendation 3.1).

4.54. The Committee believes that the Victorian Government should take a lead role in ensuring an increased uptake of traditional trade-based apprenticeships in the Victorian rail industry. One means of achieving this is to specify training requirements, including staff numbers and qualifications, as part of the contracts for operating rail services in Victoria. This view was put forward by a number of participants in the inquiry. For example, the Australian Manufacturing Workers’ Union commented:
The Victorian Government should ensure through its contracts that a minimum ration of apprentices is supported for the entire length of a four year apprenticeship.\textsuperscript{228}

4.55. The Committee notes, however, that even if this position is adopted by the Victorian Government in future, there will be a significant lag time in addressing skill shortages given the long-term nature of contracts within the industry.

4.56. The Committee notes that the introduction of an accreditation and registration system for safety critical roles (refer Recommendation 4.8) would also provide the impetus for increased apprenticeships within the rail industry.

**Apprenticeship completion rates**

4.57. The Committee notes that many apprenticeships, especially within the traditional trade-based areas, also have relatively low completion rates. The Committee believes that this issue needs to be addressed as a means of helping to address skill shortages in the Victorian rail industry.

4.58. A 2009 report produced for the Council of Australian Governments noted that there are a range of factors which contribute to the successful completion of apprenticeships. Some of these relate to the characteristics of the apprentice, which an industry or employer may or may not be able to influence. These include, for example, the level of personal commitment to the training contract, the apprentice’s personal support network, access to reliable transport, and their level of satisfaction with prior experiences of the vocational or occupational area.\textsuperscript{229}

4.59. Other factors which influence apprenticeship completion rates relate to workplace characteristics which can be more readily influenced by the employer. These include the provision of supportive workplace cultures, supervisors and managers, and an initial work placement that provides the individual with what they need to start and continue in the apprenticeship. Apprentices are also more likely to successfully complete their qualification where they have opportunities to participate in structured training activities and where there are a range of identifiable and attractive career paths.\textsuperscript{230}

4.60. The Committee recognises that the federal and state governments have implemented various strategies aimed at improving completion rates of apprenticeships and traineeships. Some of these provide financial incentives for apprentices and/or their employer, which are paid at the commencement, continuation and/or completion of an apprenticeship. The Victorian Government is also funding a range of other initiatives designed to increase apprenticeship commencements and completion rates, including an ‘out of trade’ database and a review of current pre-apprenticeship arrangements. The ‘out of trade’ database identifies people who have withdrawn from their apprenticeship in any industry, thereby representing an opportunity for employers to attract a partly qualified tradesperson into their organisation.

\textsuperscript{228} Australian Manufacturing Workers’ Union, Metals Division, Victorian Branch, Written Submission, April 2009, 3.
\textsuperscript{230} ibid., 12–13.
Chapter 4—Skills planning and development

4.61. The Committee believes that another key way of increasing the completion rate for traditional trade-based apprenticeships is to improve the quality of the training experience through the introduction of more flexibility into apprenticeship delivery models. The Committee notes that many trades are already examining methods of delivery and assessment strategies that could change the fixed, lock step, time served apprenticeship.

4.62. The Committee also notes that the Council of Australian Governments has recently endorsed the recommendations of the Australian Apprentices Taskforce to improve apprenticeship commencement and completion rates. These recommendations are aimed at developing and implementing a seamless apprenticeship access, re-entry, deferral and support system, and developing and implementing nationally-consistent standards for training plans. The pre-apprenticeship system will be reinforced to facilitate increased opportunities to engage the 2010 senior student and early school leaver cohort, current incentives aimed at increasing the commencement and retention of trade apprentices will be reviewed, mentoring and support for ‘out of trade’ apprentices and those at risk of losing their apprenticeship will be strengthened, and arrangements for effective implementation of competency-based progression and completion for apprentices will be facilitated. The Committee supports these actions and encourages the Victorian Government, in consultation with the rail operators, to ensure the rail industry benefits from these reforms.

Higher education courses

4.63. The main higher education qualifications of interest to the inquiry are rail-specific courses and qualifications from the engineering disciplines.

4.64. There is no Victorian university currently delivering a rail-specific undergraduate course, however, all Victorian universities offer undergraduate degrees in a range of engineering disciplines. While rail engineering has traditionally been a part of mechanical, civil and electrical engineering, the growth of electronic components within railway systems means that electronic engineering and communication systems are becoming increasingly relevant.

Courses in engineering and related technologies

4.65. There were 2,588 students who completed a higher education qualification in engineering and related technologies in Victoria in 2008 (refer Table 4.6). The three main providers of these qualifications were Monash University, RMIT University and the University of Melbourne.

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Table 4.6: Number of students who completed higher education courses in engineering and related technologies in Victoria, by higher education provider (2008)

<table>
<thead>
<tr>
<th>Higher education provider</th>
<th>Number of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deakin University</td>
<td>88</td>
</tr>
<tr>
<td>La Trobe University</td>
<td>64</td>
</tr>
<tr>
<td>Monash College Group</td>
<td>5</td>
</tr>
<tr>
<td>Monash University</td>
<td>734</td>
</tr>
<tr>
<td>RMIT University</td>
<td>594</td>
</tr>
<tr>
<td>Swinburne University of Technology</td>
<td>416</td>
</tr>
<tr>
<td>The University of Melbourne</td>
<td>520</td>
</tr>
<tr>
<td>University of Ballarat</td>
<td>56</td>
</tr>
<tr>
<td>Victoria University</td>
<td>111</td>
</tr>
<tr>
<td><strong>Total</strong>                                     <strong>2,588</strong></td>
<td></td>
</tr>
</tbody>
</table>


4.66. Despite Victoria having the highest number of completions in engineering and related technologies courses (accounting for nearly one third of students in these courses Australia wide), many stakeholders raised concerns about the low number of graduate engineers entering the rail workforce. Further, it was suggested that the recovery time from a skill shortage may well extend 10 to 15 years, as this will be the timeframe for current graduates to gain the necessary experience to perform at advanced levels.232

4.67. The Committee heard that the key factor inhibiting enrolments in engineering and related technologies is the low number of secondary school students studying advanced mathematics and science subjects in their senior years. Students who are not proficient in physics and advanced mathematics will struggle to complete tertiary engineering courses.

4.68. The Committee notes that participation rates in mathematics and sciences in year 12 have been an issue of concern throughout Australia for many years. Engineers Australia highlighted this issue in its written submission, noting that the numbers of students studying advanced mathematics and physics in their senior secondary schooling has been gradually declining in all states over the last ten years.233 The Education and Training Committee reported to the Victorian Parliament on this issue in 2006 and made a range of recommendations relating to the promotion of mathematics and science in Victorian education.234

4.69. Attrition rates from engineering and related higher education courses have also been raised as an issue of concern. In March 2010, the Victorian Government released the Tertiary Education Plan, which included a recommendation that the government investigate the reasons behind high attrition rates in priority fields of study.235 The Committee supports this recommendation and believes that commencement and completion rates in engineering should be included in the investigation.

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232 Engineers Australia, Victorian Division, Written Submission, May 2009, 8–9.
233 ibid., 7–8.
4.70. The Committee believes that the rail industry could assist in increasing the number of students completing engineering and other relevant higher education courses by promoting the range of interesting and challenging careers available, and offering incentives for students to specialise in rail-related studies. This can be achieved through industry involvement in curriculum design, development of industry-related work experience opportunities or related projects, and offering incentives such as scholarships.

**Rail industry content**

4.71. As part of its investigations, the Committee examined undergraduate engineering courses in Victoria. The Committee found that exposure to skills and knowledge relevant to rail operations within undergraduate engineering courses is limited, although there are some units which reference transport. In most cases, such units focus on traffic and road systems, although some cover other modes of transport, including railways. The Committee believes that the rail industry should review the quality and availability of these units, as well as the levels of student participation and their levels of satisfaction with the content of the units.

4.72. A number of submissions and witnesses suggested that skill shortages in the Victorian rail industry could be at least partially addressed by increasing the amount of rail-related content in undergraduate programs. Rail Innovation Australia argued that major rail companies should work with higher education providers to establish rail-specific undergraduate courses or elective units that would expose students to career options in the industry. The Essential Services Commission also suggested that there may be scope for universities to increase opportunities for rail specialisation in undergraduate engineering degrees. A similar finding was made in 2005 by the Australasian Railway Association, which reported that the number of graduates with an interest in rail careers could be increased, and the amount of time taken to achieve competency within a rail-related occupation could be reduced, if there was an increase in the rail-related component of undergraduate engineering courses.

4.73. While a range of submissions argued that rail industry content could and should be more prominent within undergraduate courses, there was little support for the development of a rail-specific undergraduate engineering degree in Victoria. As Rail Innovation Australia noted, the rail education market in Australia is small, and universities are unlikely to be able to support the development of new undergraduate programs in rail engineering. The Committee notes that due to budgetary constraints, universities are unlikely to put forward programs unless there is healthy student demand or significant financial support available.

4.74. The Committee heard that there are also important educational reasons against early specialisation within an engineering degree course. Dr Martin Murray, Senior Lecturer in Civil Engineering at Queensland University of Technology, argued that specialisation at the undergraduate level would hinder the development of generic skills, and potentially reduce the future employment opportunities available to

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236 Rail Innovation Australia Pty Ltd, Written Submission, April 2009, 3.
239 Rail Innovation Australia Pty Ltd, Written Submission, April 2009, 3.
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graduates. This view was supported by the Faculty of Engineering, Monash University, which argued that it is more advantageous and attractive for students to undertake a broader, less specialised first degree.

4.75. The Committee supports the view that the introduction of a rail-specific higher education engineering course into Victoria is unnecessary. The Committee believes, however, that there is considerable scope for increasing the extent of rail industry content in existing engineering courses. The Committee notes that this can be achieved through a range of strategies, such as elective units of study, research projects and work experience opportunities. Representatives of Engineers Australia noted that such approaches have been successful for other industries.

4.76. Representatives of Engineers Australia discussed industry placements as an effective way to open up opportunities for higher education students to experience the rail industry. As a condition of accrediting university engineering courses, Engineers Australia imposes a requirement that all engineering undergraduates in Australia complete 12 weeks of work experience during their course, and provide a report on that experience. Work experience is usually undertaken during university holidays, and Engineers Australia provides services to assist students and employers with organising industry placements.

4.77. Alternatively, a number of universities offer student cadetships, which combine paid industry experience with study requirements. The Committee supports any strategic and innovative approaches to increase these kinds of student–industry interactions.

4.78. Submissions and witnesses also suggested that research project work could present opportunities for engineering students to experience the rail industry. Engineers Australia argued that there is scope for rail-specific design projects and industry linkages with university programs. Monash University also suggested that through industry involvement, it would be possible to increase the number of ‘railway focused’ final year mechanical engineering projects. The Committee believes that development of these types of opportunities is essential, if students are to remain engaged in their engineering studies and develop an interest in pursuing a career within the rail industry.

Pathways from VET into higher education

4.79. The Committee believes that the development of formal articulation pathways from VET courses into relevant higher education courses would also help to raise participation in education and training programs that would assist in addressing skill shortages in the Victorian rail industry.

240 Meeting with Dr M. Murray, Senior Lecturer in Civil Engineering, Faculty of Built Environment and Engineering, School of Urban Development, Queensland University of Technology, Brisbane, 7 September 2009.
241 Engineering Faculty, Monash University, Written Submission, April 2009, 4.
243 Monash University also suggested that through industry involvement, it would be possible to increase the number of ‘railway focused’ final year mechanical engineering projects. The Committee believes that development of these types of opportunities is essential, if students are to remain engaged in their engineering studies and develop an interest in pursuing a career within the rail industry.
244 ibid.
245 Engineering Faculty, Monash University, Written Submission, April 2009, 4.
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4.80. The Committee notes that pre-defined articulation pathways have been successful in other disciplines and industries. For example, Holmesglen Institute and Monash University have collaborated to develop a formal articulation pathway from the Diploma of Built Environment into the Bachelor of Technology (Infrastructure – Design, Construction and Management), through a common first year. After completing the first year, students may continue with the Diploma of Built Environment at Holmesglen Institute, or apply to enter the second year of the Bachelor of Technology at Monash University, which itself is a pathway into the Bachelor of Engineering (Civil Engineering).

4.81. The Committee believes that the Victorian rail industry should work closely with the VET and higher education sectors to assess the viability of developing a range of articulation pathways in areas where there are current or emerging skill shortages. These articulation arrangements should provide advanced standing in relevant higher education programs for prospective students who could potentially graduate into critical rail occupations and job roles.

4.82. The Committee notes that the Dublin Accord represents a potential mechanism for recognising skill development from VET qualifications in the engineering discipline as a pathway into relevant higher education programs. The accord is an international agreement for the recognition of undergraduate engineering degrees across ten member countries, with Engineers Australia as the signatory accreditation body within Australia.

4.83. The Committee notes that Sheffield Hallam University in the United Kingdom has developed a foundation degree in rail engineering which forms the basis for articulation into higher level programs. The course includes an introduction across engineering disciplines in the first year, as well as an industrial placement. The second year enables students to build their skills in one of four disciplines: signal engineering; electrical and mechanical engineering; civil engineering; and track engineering. Following completion of the two-year foundation degree, graduates have the option of completing the Bachelor of Engineering (Railway Technology). In addition, the program offers incentives such as tuition scholarships and paid work placements to encourage new students to enter into the rail industry or to up-skill existing staff.

Postgraduate courses

4.84. There are a small number of rail-specific postgraduate programs available to rail engineers. Central Queensland University offers two postgraduate courses (railway signalling and telecommunications and rail operations management), while Queensland University of Technology offers postgraduate studies in railway infrastructure and the University of Wollongong offers a program in rolling stock engineering. These specialist postgraduate programs are targeted at people who

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have had several years experience within the rail industry, with the aim of ‘fast-tracking’ their knowledge and skills and increasing their ‘usefulness’ to industry. All are available as a distance learning program, enabling rail industry employees from around Australia to continue their studies while employed within the industry.

4.85. In 2009, there were 120 domestic and international student enrolments in postgraduate rail programs in Australia (refer Table 4.7). The Committee understands that the Victorian rail industry had approximately twelve people enrolled at Central Queensland and Wollongong universities.

<table>
<thead>
<tr>
<th>Program</th>
<th>University</th>
<th>Enrolments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Certificate in Railway Signalling and Telecommunications</td>
<td>Central Queensland University</td>
<td>70</td>
</tr>
<tr>
<td>Graduate Diploma in Railway Signalling and Telecommunications</td>
<td>Central Queensland University</td>
<td></td>
</tr>
<tr>
<td>Master of Railway Signalling and Telecommunications</td>
<td>Central Queensland University</td>
<td></td>
</tr>
<tr>
<td>Graduate Certificate in Rail Operations Management</td>
<td>Central Queensland University</td>
<td>20</td>
</tr>
<tr>
<td>Graduate Diploma in Rail Operations Management</td>
<td>Central Queensland University</td>
<td></td>
</tr>
<tr>
<td>Master of Rail Operations Management</td>
<td>Central Queensland University</td>
<td></td>
</tr>
<tr>
<td>Graduate Certificate (Railway Infrastructure)</td>
<td>Queensland University of Technology</td>
<td>20</td>
</tr>
<tr>
<td>Master of Engineering (Railway Infrastructure)</td>
<td>Queensland University of Technology</td>
<td></td>
</tr>
<tr>
<td>Graduate Certificate in Rolling Stock Engineering</td>
<td>University of Wollongong</td>
<td>10</td>
</tr>
<tr>
<td>Master of Rolling Stock Engineering</td>
<td>University of Wollongong</td>
<td></td>
</tr>
</tbody>
</table>

Source: Compiled by the Education and Training Committee based on data from Engineering Faculty, Monash University, Written Submission, April 2009, 19.

4.86. Since their inception in 2004, Central Queensland University’s railway signalling and telecommunications programs have shown increasing enrolments, with more than 70 students currently enrolled. The newer programs have fewer students, with 10 to 20 students enrolled in rolling stock engineering, railway infrastructure engineering and rail operations management.

4.87. While Rail Innovation Australia told the Committee that the postgraduate programs are highly regarded and recognised both nationally and internationally, the Committee received mixed evidence about their content and delivery. The executive director of Engineers Australia suggested that Victorian students see the online distance learning format as a barrier, while a representative of the Railway Technical Society of Australasia attributed the relatively low take-up from Victorian students to a lack of state-based course content. On the other hand, a representative of Queensland University of Technology highlighted the advantages of online delivery, which allows for increased flexibility and exposure to different railway operating systems and processes.

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249 Rail Innovation Australia Pty Ltd, Written Submission, April 2009, 2.
250 Ms G. Graham, Executive Director, Engineers Australia, Victorian Division, Transcript of Evidence, Public Hearing, Melbourne, 20 July 2009, 16.
251 Mr P. Munro, Victorian Chapter Representative, Railway Technical Society of Australasia, Transcript of Evidence, Public Hearing, Melbourne, 20 July 2009, 16.
252 Meeting with Dr M. Murray, Senior Lecturer in Civil Engineering, Faculty of Built Environment and Engineering, School of Urban Development, Queensland University of Technology, Brisbane, 7 September 2009.
4.88. The Committee acknowledges both the advantages and disadvantages of distance learning programs and believes that to gain the maximum benefit from such studies, distance learning students should be provided with additional study support, including bridging programs, industry experiences and mentoring.

4.89. The Committee is pleased to note that the postgraduate rail programs are currently being reviewed, potentially resulting in content changes and other improvements to better reflect the diverse needs of students and employers across Australia. The Committee believes that as part of the review process, postgraduate programs should be benchmarked against international best practice standards.

4.90. The Committee notes that the Rail and Tram Industry Infrastructure Committee and the Department of Transport provide support to students undertaking the Central Queensland University postgraduate signalling program. For example, the Rail and Tram Industry Infrastructure Committee has a bridging and industry rotation program to provide hands-on experience to students and help them to broaden their understanding and experience of the industry. The Committee was told that this model contributes to a significantly reduced number of non-completions. Similarly, the Department of Transport provides a program to develop skills and knowledge of the rail industry, through varied experiences in railway design, construction, maintenance and operating environments.

4.91. The learning and development manager at Connex Melbourne suggested that similar programs are required in other areas of rail, including operations, planning and networking.

**Short courses**

4.92. Monash University’s engineering faculty suggested that increased provision of short courses could be a useful additional strategy for up-skilling rail industry engineers. Short courses would consist of a structured series of seminars and/or workshops based on specific or current topics such as project management and track or rolling stock design.

4.93. The Committee notes that short courses have a number of advantages. For example, while the time and cost required to complete a full university qualification may offer a disincentive for participation in rail-specific studies, short courses require less time and financial commitment. At the same time, short courses provide a means of flexible delivery of high quality, detailed rail-related content. The Committee notes that such programs could benefit current higher education students, recent graduates, and experienced rail employees who are seeking to further develop their careers in the industry.

4.94. The engineering faculty at Monash University argued that development of rail-specific short courses may help to counter an apparent ‘monopoly on knowledge’ among senior staff in the rail industry, by empowering and up-skilling younger employees. This would ensure a ‘more sustainable’ distribution of the skills and

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254 Meeting with representatives of the Rail Skills Centre, Newport, Victoria, 17 August 2009.
256 Engineering Faculty, Monash University, Written Submission, April 2009, 3.
knowledge base across the industry.\textsuperscript{257} It was also suggested that government investment could ‘provide the missing momentum’ for the development of course materials.\textsuperscript{258} The Committee agrees that some government support may be warranted, but believes that industry should also take a lead role in the design and delivery of these programs.

**Workforce planning and development**

4.95. Workforce development has been described in many ways. The Organisation for Economic Co-operation and Development defines it as ‘the comprehensive management of human resources, so as to better meet the demands of a global economy at both the national and local levels, through improving economic competitiveness and social cohesion’.\textsuperscript{259} This definition illustrates that workforce development is fundamental to productivity. It looks at the connections between all aspects of a workplace, builds the capacity of people in a workforce to grow and prosper, and is about finding innovative ways to do things better.\textsuperscript{260}

4.96. The Committee notes that while workforce development includes training, it also encompasses a range of other activities and mechanisms designed to assist in forecasting and managing the size and composition of a workforce. It is a strategic approach to ensuring the long-term sustainability of the workforce. Workforce development is reliant on having a sound understanding of a range of factors, including the demographic and skills profile of a workforce, job design and redesign options, support for job sharing and redeployment, knowledge management and mentoring, career progression and succession plans, working conditions and performance management, and the recruitment, induction and retention of workers.\textsuperscript{261} A range of stakeholders must be involved in workforce development, including individual operators, industry organisations and governments.

**Recruitment and retention strategies**

4.97. Rail operators, like organisations in any other industry facing skill shortages, typically consider a range of employee attraction and retention strategies when faced with skill shortages or recruitment difficulties. The Committee heard about many of these strategies at the Rail Careers Conference in May 2009.

4.98. When seeking to recruit new employees, rail operators may consider a range of strategies aimed at enhancing the attractiveness of the role. These may include offering an attractive salary package or improved working conditions. Alternatively, employers may re-assess and modify the scope of the role, or change their expectations of new recruits and allow for upskilling within the role. Other recruitment strategies that might be considered include: increasing the recruitment effort and/or widening the pool of potential applicants; paying a sign-on bonus to new employees; or paying a recruitment bonus to existing employees who refer a suitable employee to the organisation.

\textsuperscript{257} ibid.
\textsuperscript{258} ibid., 4.
\textsuperscript{259} Department of Education, Employment and Workplace Relations, Written Submission, April 2009, 7.
\textsuperscript{260} ibid.
\textsuperscript{261} ibid.
4.99. Skilled migration is another recruitment strategy that may be used by rail operators seeking to address skill shortages. Engineers Australia outlined in its submission that currently, migrants account for more than half of the growth of new entrants to the Australian engineering profession each year:

Since 2003–04, the number of engineers working in Australia on 457 temporary visas has more than doubled, increasing from 810 to 1,970. The increase between 2005–06 and 2006–07 was particularly large and may be related to the fall in permanent off-shore migration between those years.

The significance of these changes can be put into perspective by comparing migration to the output of Australian universities. In 2006, there were 5,044 new four year Bachelor of Engineering graduates. The supply of new engineers to the Australian workforce is the sum of university output and immigration. Thus in 2006, the supply of new professional engineers was 11,134 (5,044 new domestic graduates and 6,090 new migrant engineers) with migration accounting for more than half of new supply.\(^{262}\)

4.100. The Committee notes, however, that the experience of rail operators using migration as a recruitment strategy is varied. Operators have indicated that this approach requires considerable time and money, with the results often failing to meet expectations:

Sourcing skilled labour off-shore adds another level of diversity to the rail workforce. Well managed diversity provides a good source of refresh and innovation in organisations. Poorly managed it can create tensions that are difficult to resolve. As with diversification of the workforce on other dimensions (such as age and gender) the success of operators in retaining migrant workers will be dependent on their ability to sustain the necessary supporting mechanisms.\(^{263}\)

4.101. Further, the Committee notes that the Victorian rail industry is competing for skilled labour with rail companies in other Australian and international jurisdictions, as well as with other industries worldwide. This point was also emphasised in a written submission from Engineers Australia:

Engineers Australia recognises the significant contribution made by migrant engineers to Australia’s competitiveness and economic growth. Migrant engineers are a vital element in generating new ideas and approaches to engineering, and for providing skills where there are shortages.

However, there is an acute need for the Australian education system to produce more engineering graduates. Until relatively recently, only traditional immigrant countries (Australia, New Zealand, Canada and the United States) competed for immigrants. Now European nations and nations elsewhere (especially in the Middle East and Asia) are entering the competition for migrants with desired characteristics, especially skills in short supply. Countries experiencing labour shortages and population pressures are directing their focus toward skilled migration. Australia’s reliance on migrant engineers to meet skills shortages leaves industry and our innovation system vulnerable.\(^{264}\)

4.102. Thus, the Committee believes that it is essential that the Victorian rail industry develop a long-term training and development plan to ensure that the required skills can be developed within the local workforce.

\(^{262}\) Engineers Australia, Victorian Division, Written Submission, May 2009, 6.


\(^{264}\) Engineers Australia, Victorian Division, Written Submission, May 2009, 6.
4.103. A second key focus for operators seeking to address skill shortages within their workforce may be to change workplace practices. For example, employers may increase the amount of overtime required to be worked by employees, or reduce the need for the skill in short supply by altering job roles and workplace processes. Another common strategy is to contract out the work. The Committee notes, however, that as with skilled migration, outsourcing is unlikely to be sustainable in the long term, as each rail organisation will be competing with a range of other organisations for a limited local supply of the required skill set. A representative of V/Line Passenger told the Committee that the organisation has lost 25 per cent of its graduate civil engineers to contract companies within three to four years of them completing their training.265

4.104. While Victorian rail operators have previously used skilled migration and outsourcing to quickly acquire required skills, the industry has realised that these approaches are not sustainable. Therefore, they have increasingly taken on succession planning as a key strategy in workforce planning and development. Succession planning involves a detailed workforce analysis to identify roles critical to the business, the current skills held within the organisation, future skills required, any gaps between current and future skill requirements, and strategies to ensure the ongoing availability of employees with the required skill sets within the organisation. As noted by the Victorian Government, succession planning is particularly critical in areas where workers are involved in safety critical roles and must meet health requirements.266

4.105. Succession planning recognises that staff with high level or specialised skills cannot be easily recruited, and that organisations must refocus their efforts on strategies to retain existing employees and to further develop the skills and capabilities of the existing workforce. These strategies may include: retraining existing employees to take on new roles; supporting participation in advanced education programs that may enable employees to take on increased responsibilities; introducing mentoring programs; and encouraging older employees to continue to work in the industry as part-time workers, mentors, contractors, consultants, volunteers and/or trainers.

4.106. The Committee recognises that the above workplace strategies provide useful options for rail operators seeking to address skill shortages or skill gaps within their organisation. However, the continued operation of safe and reliable passenger and freight services depends on having a sufficient supply of highly skilled employees available to all organisations within the industry. Therefore, the Committee believes that all Victorian rail operators have a responsibility to contribute to the development of a comprehensive, long-term industry workforce plan.

Industry-wide workforce planning and development

4.107. The Committee found that there is a broad consensus about the need for the Victorian rail industry to develop a coordinated approach to training, recruitment, employee retention and the utilisation of existing workforce skills. Without this, the rail industry is unlikely to have access to sufficient labour and skills required to meet the current and projected demand. A recent report for the Australasian Railway

Chapter 4—Skills planning and development

Association emphasised the need for accurate industry information and the involvement of all rail organisations in workforce planning and development:

In order to ensure stakeholder buy-in to the risks facing the industry it is important to have valid, accurate information. This can be achieved if the individual organisations and the industry as a whole conduct regular workforce planning processes to clarify and validate the data ... [and] ensure opportunities to share resources between organisations in the supply chain ...\textsuperscript{267}

4.108. The Committee notes that although workforce planning and development is being undertaken at the national level by the Australasian Railway Association, this work does not specifically cover the Victorian perspective. The Committee recognises that the Australasian Railway Association cannot account for skills available within or required by rail organisations that do not participate in its workforce planning processes. The Committee therefore believes that there is a leadership role for the Department of Transport to ensure the Victorian rail industry is adequately represented in workforce planning and development. This view was supported in evidence. For example, Mr Trevor Dobbyn, State Secretary, Rail, Tram and Bus Union, Victorian Branch stated:

To meet the system's current and future needs, the government must take on a greater role of planning, delivering and mandating for training and workforce development. If we do not plan for the staffing needs of the system, the investment in track and rolling stock will come to nought. If we do not have an adequate, skilled workforce to maintain the network and serve the travelling public, the system will come to a standstill.\textsuperscript{268}

4.109. The Committee believes that the department should, in consultation with the rail industry, develop an industry workforce plan for 2010 to 2020, outlining: current workforce skill needs, staffing levels and qualifications; current and emerging skill shortages and skill gaps, and their impact on passenger and freight operations; required staffing levels in safety critical roles; an industry-wide recruitment and retention strategy; and an industry-wide training and development plan.

4.110. The Rail and Tram Infrastructure Industry Committee was established in 2004, with the charter to help to build on the work of groups such as the Australasian Railway Association and to assist in identifying and addressing skill shortages. It is the key Victorian industry forum for rail infrastructure skills and training, and assists rail businesses to adopt and implement solutions to meet their current and future workforce development needs. One of its aims has been the coordination, development and documentation of skills for rail safety workers which are mutually recognised across rail operators, infrastructure managers and maintenance providers. The Rail and Tram Infrastructure Industry Committee has also worked to develop practical and innovative training to assist industry in aspects of workforce training and development, including assisting in increasing the number of commencements in the postgraduate program in railway signalling and telecommunications which is offered by Central Queensland University.

4.111. The work of the Rail and Tram Infrastructure Industry Committee has been accomplished through collaboration with rail organisations, the transport and electrical industry training advisory boards, unions and other associated bodies. The

\textsuperscript{268} Mr T. Dobbyn, State Secretary, Rail, Tram and Bus Union, Victorian Branch, Transcript of Evidence, Public Hearing, Melbourne, 3 March 2010, 38.
Committee acknowledges the progress made by the Rail and Tram Infrastructure Industry Committee in addressing workforce skill needs, and supports its continued involvement as a key body in workforce planning and development for the rail infrastructure sector.

4.112. In February 2008, the Australian Transport Council agreed on the need for state, territory and national advisory groups to support workforce and skills development in the transport and logistics industry. The Victorian Freight and Logistics Council, with funding from the state government, was asked to form the Victorian advisory group. The primary objectives of the Transport and Logistics Workforce Advisory Group are to: improve access to appropriate education, training and employment; improve workforce planning, recruitment and retention practices, including input to national issues where appropriate; and provide advice on streamlining regulatory requirements for workers employed in the industry.\(^ {269}\)

4.113. The Committee notes that while there are several Victorian groups operating in an advisory role, the rail industry still lacks a single and coherent voice on matters dealing with workforce planning and development. While the Rail and Tram Infrastructure Industry Committee and the Transport and Logistics Workforce Advisory Group each cover some segments of the Victorian rail industry, other segments of the industry have little or no representation on state or national policy issues. Therefore, the Committee recommends that a more coordinated approach be adopted, and that the industry form a single advisory body to identify and articulate industry skill and training needs. The Committee believes that the establishment of a Victorian centre of excellence in rail skills, as discussed below, could form the basis of a single group representing all sectors of the rail industry.

**Skills reform agenda**

4.114. The Committee notes that the ‘skills challenge’ is a national challenge which cannot be addressed by individual industries alone. Governments in all Australian jurisdictions agree on the need for a far-reaching reform agenda to address skills development issues. To deal with the skills challenge, the Council of Australian Governments has outlined an action plan to grow a capable and highly skilled population and to ensure a sustainable workforce.

**National skills reform agenda**

4.115. As part of the national focus on productivity and the development of Australia’s human capital, there is a strong emphasis on making training systems more responsive to changing labour market demands through more competitive and user-focused delivery.

4.116. Skills Australia has been established as an independent statutory body to provide advice to the federal Minister for Education, Employment and Workplace Relations on Australia’s current, emerging and future workforce skills and workforce development needs. Its major functions include analysing current and emerging skill needs across industry sectors, and assessing evidence from commissioned research.

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4.117. As part of an initial review of skill shortages across key industries, Skills Australia has proposed changes to aspects of government training priorities, through a targeted approach to planning for the future and identifying the need for intervention in areas of emerging skills. In 2009, Skills Australia launched a series of discussion papers aimed at assisting in the development of a strategy to best meet the nation’s future skill needs. A key issue raised in these papers was how best to influence areas of priority.

4.118. Accordingly, a risk-based model to fund industries of importance to the Australian economy has been developed. The model aims to: address workforce development issues; maximise people’s capabilities; lift productivity; and increase workforce participation. Initially, 20 occupation groups were identified, including engineers. The federal and state governments must now implement strategies to increase the numbers of people training in and entering into these occupation groups in Australia.

4.119. The Committee believes that the Skills Australia risk-based model will provide a proactive approach and have a positive impact in tackling the issues associated with skill shortages in the Victorian rail industry, through the identification of priority occupation groups such as engineering and the traditional trades.

**Victorian skills reform agenda**

4.120. Skills Victoria is the key Victorian Government agency responsible for strategic advice and analysis of Victoria’s skill requirements. Skills Victoria provides strategic leadership, legislation and other support for the development of the VET system, as well as legislative and regulatory policy advice for the higher education sector. Skills Victoria is also responsible for: planning, purchasing and monitoring the services offered by registered training organisations; administering VET regulatory frameworks; and delivering the apprenticeship and traineeship program.

4.121. One of the key functions of Skills Victoria is to monitor and align industry training needs with available training places. Relevant industry bodies, including various training advisory bodies, provide advice to assist in the allocation of government-funded training places. The Committee notes, however, that the rail industry currently lacks a single body to provide comprehensive advice regarding the skill and training needs of the industry.

4.122. In an attempt to assist industries in dealing with the depletion of critical skills, Skills Victoria has strengthened the role of the Victorian Skills Commission. It has also improved industry input to policy and decision-making, with the aim of providing more investment in areas of skill shortages, and discouraging over-delivery in areas where job opportunities are restricted, or where there is already a sufficient supply of skilled workers. The Committee supports these changes and encourages the Victorian Government to continue to monitor processes for allocating VET funding to ensure that limited resources are targeted towards areas of skill shortages.

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4.123. The Committee believes that one of the key strategies for assisting the rail industry to overcome skill shortages is for Skills Victoria to acknowledge the rail sector as a ‘priority industry’, as defined under its Programs and Initiatives statements. This would allow the industry greater access to Skills Victoria's expertise and knowledge, and assist in building capacity across rail, particularly in areas such as construction and installation, operations and maintenance, and manufacturing.

4.124. The Committee understands that as a priority industry under Securing Jobs for Your Future, rail would benefit from a range of programs and strategies such as:

− funding for traineeships and apprenticeships and funding for eligible retrenched workers and 15 to 24 year-olds, subject to admission requirements and course availability;
− contestable and demand driven funding;
− assistance with development of learning materials for programs that cover foundation skills, skills creation, skills building and skills deepening;
− assistance with building the capacity of training providers for delivery of rail-related training; and
− identifying rail as a long-term market for training and thus encouraging training provider investment in the sector.

4.125. The Committee believes that Skills Victoria should prioritise training places for key safety critical roles such as track worker and ganger/special ganger, signaller/train controller, stationmaster, safeworking officer, driver, authorised officer and technical officer. The Committee also believes that Skills Victoria should provide resources to assist with the building of capacity for trainers and public training providers to deliver the level of training required to meet the skill needs of the Victorian rail industry.

Centres of Excellence

4.126. The Committee examined how a number of comparable industries have tackled the problem of skill shortages and how they have implemented new and innovative methods of training. In particular, the Committee believes that Centre of Excellence models should be further considered as a way of helping to address skill shortages in the Victorian rail industry.

Centre of excellence models

4.127. Centres of excellence provide the opportunity for targeted and customised training solutions to meet the skill needs of priority industry sectors. Skills Victoria currently funds 20 specialist centres across Victoria which link to specialist networks that facilitate resource sharing across the Victorian TAFE sector, and enable a single point of entry into the VET system for industries and organisations seeking training solutions in specialised industry areas.


4.128. Given some obvious parallels between the automotive and rail sectors, in December 2009, the Committee sought the opportunity to visit the Automotive Centre of Excellence, which is located at the Batman’s Hill Precinct at the Docklands in Melbourne.

4.129. The Automotive Centre of Excellence is a dedicated training facility for the automotive industry, which is a very important part of the Victorian economy. The Automotive Centre of Excellence concept was developed in consultation with the automotive industry, which identified the need for: increased innovation capabilities within the industry; a better, more integrated approach to education and training and research and development; highly-skilled staff trained in the latest technology; centralisation of training to allow resource sharing and the ability to constantly update technology; and ongoing professional development for existing staff (in particular leadership training for management staff) bringing together the TAFE, university and corporate education and training systems.275

4.130. The Automotive Centre of Excellence delivers: innovative and sustainable environmental design principles and practices; a venue to showcase the latest technology and equipment; more employer friendly, flexible training opportunities; and new learning technologies, all within a flexible learning environment.276

4.131. During its visit to the Automotive Centre of Excellence, the Committee was very impressed with the training facility and its vision for the future. In particular, the Committee was impressed with features such as the strong industry presence, the modern training environment, and the emphasis on new and emerging technologies. The Committee notes that these are all aspects which appeal to new entrants to the industry. Therefore, the centre has been successful in assisting the industry to attract suitable young workers who are committed to a career in the automotive industry.

4.132. Another Victorian example of a dedicated training facility responding successfully to an industry training need is the Plumbing Industry Climate Action Centre. This is an industry-led facility jointly funded by the Communications, Electrical and Plumbing Union, the Master Plumbers and the Mechanical Services Association of Australia Joint Training Fund, with additional funding support from the Victorian Government and the Building Commission. In total, $9 million was made available to establish the centre.277

4.133. The development of the Plumbing Industry Climate Action Centre stemmed from concerns raised in a review into the future professional development and trade training requirements for the plumbing industry, which specifically identified the need for more targeted training in the green plumbing and sustainable living initiatives. The function of the Plumbing Industry Climate Action Centre is to assist in the training of the plumbing profession, providing access to the latest energy and water-efficient practices with hands-on experience on the most up-to-date products and technologies.278 The centre showcases the world’s leading-edge technology and provides the industry with the means to train a new generation of technicians in this new and exciting technology. The centre also showcases green building

276 ibid.
278 ibid.
developments, hydronic heating, solar systems, environmental sustainability, waste management reduction and accessibility.\(^{279}\)

4.134. The Committee notes that some other jurisdictions have developed or are in the process of developing rail-specific centres of excellence. In particular, the Committee considered the role, structure and activities of the proposed Queensland Rail Skills Centre of Excellence, as well as rail specialty centres in the United Kingdom.

4.135. Queensland’s response to skill shortages in the rail industry has been to establish a Rail Skills Centre of Excellence.\(^{280}\) A working group had identified that a coordinated industry response was the only possible mechanism to lead the collaborative efforts of businesses within the rail industry. This group recommended that the required leadership and direction be made available through the formation of a rail skills centre of excellence. It believed that the necessary critical mass of industry and training providers existed to create this new collaborative venture to address current and future skill needs.

4.136. The Queensland Rail Skills Centre of Excellence will take the lead on all aspects of VET, higher education, specialised rail skills development initiatives, and whole of industry workforce planning. The centre will ensure that current and projected skill needs are identified at regional and state levels, and ensure that appropriate levels of workforce development activity can meet these projected needs. The centre will link into Queensland’s skills plan and will be tailored to meet the skill needs of the industry.\(^{281}\) Its membership will comprise all peak state bodies in the rail sector and government. The Queensland Government will contribute to the cost of the centre, with additional funding from an industry levy which is based on the operational size of each organisation.

4.137. A UK example of the centre of excellence model is the Yorkshire Rail Academy, a partnership between York College and the National Railway Museum. The Yorkshire Rail Academy is a dedicated rail training facility which delivers the apprenticeship in rail transport engineering, as well as foundation degrees in engineering with a rail specialty. The campus includes fully operational track and signalling equipment as well as state-of-the-art training facilities.\(^{282}\)

A Victorian Centre of Excellence in Rail Skills

4.138. The Committee believes that in order for current skill shortages to be properly addressed, the Victorian rail industry must take firm action and establish a peak body that can respond to training and development needs through effective workforce planning. The Committee also believes that the development of specialist skills, as required by the Victorian rail industry, requires the establishment of specialist training and development facilities, along the lines of the centres of excellence described above. The Committee believes that the benefits of a centre of excellence in rail skills would include the development of new training and employment pathways into the industry. The Committee also envisages that the centre of excellence would provide

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281 Ibid.

a showcase for best practice and the adoption of new technologies within the Victorian rail industry.

**Role of the centre**

4.139. The Committee notes that the establishment of a Victorian Centre of Excellence in Rail Skills should occur as a collaborative process between the Victorian Government, rail operators, industry bodies, unions and education and training providers. The Committee believes that the goals set out for the centre should be in line with those of existing specialist centres in other industries and other jurisdictions. In particular, the Centre of Excellence in Rail Skills should aim to:

- increase innovation capabilities;
- develop an integrated approach to education and training and research and development;
- assist in the development of trainers who are proficient in the latest technologies;
- facilitate the centralisation of training to allow resource sharing and the use of up-to-date technology;
- develop ongoing professional development, in particular leadership training; and
- ensure VET, higher education and corporate training is based on improved quality of service delivery within the industry.

4.140. The Committee believes that a key task of the proposed Victorian Centre of Excellence in Rail Skills should be to assist in the implementation of the workforce development plan to be developed by the Department of Transport (refer Recommendation 4.1). This could be achieved by the Victorian rail industry and the Victorian Government working collaboratively to identify and monitor current and emerging skill shortages and devising strategies to address these shortages.

4.141. Some of the specific issues that could be considered by the Victorian Centre of Excellence in Rail Skills include:

- strategies to expand the pipeline of youth entering the rail industry;
- assistance for alternative labour pools to gain industry-specific skills and competencies;
- the development of alternative training strategies, such as e-learning and accelerated training;
- the development of tools and curriculum to enhance the skills of rail professionals;
- strategies to stimulate demand for training;
- strategies to help increase the capacity of educational institutions and the industry itself to train to industry defined competencies;
- strategies to retain and help incumbent workers move into higher level positions; and
- assistance for individuals moving from other industries into the rail industry.
4.142. The Committee believes that another opportunity for a Centre of Excellence in Rail Skills would be to investigate and assist in the establishment of pre-employment training programs as a careers taster for people wishing to gain employment in the industry. The Committee is aware that there are already high levels of interest in certain roles within the industry, especially in train driving. The Committee believes that the industry could tap into this interest by designing and delivering pre-employment training programs aimed at developing a workforce ready pool of potential applicants for positions across the industry. Links to VET in Schools programs with related skill acquisition, such as engineering and electronics, could also be established.

4.143. Mr Brian McNaught, General Manager, Rail Compliance, Asciano, suggested that developing pre-employment training opportunities in areas such as driving and track maintenance should be a priority. It was envisaged that such training would cover the basic ‘prerequisite’ industry skills such as radio protocol, first aid, manual handling and customer service. In its submission to the inquiry, Asciano noted that while each of these components are currently offered by a number of registered training organisations, they are not part of a clearly identifiable rail skills career package that can be pursued by would-be entrants to the industry.

4.144. The Committee notes that the benefits of developing suitable pre-employment programs would be two-fold: pre-employment training would provide a visible and accessible pathway into the rail industry, while allowing employers to recruit employees who have ‘self-selected’ and demonstrated commitment and interest in the industry.

4.145. The Committee believes that the Centre of Excellence in Rail Skills could also assist in the development of training programs for supervisors and managers across the rail industry, to address the current gap in skills among the middle management level. The Committee believes that building capacity at this level is essential for continued advancement of the industry. It is suggested that when developing suitable management programs, the industry incorporate international knowledge and best practice from the international organisations currently operating within the local environment.

**Venue and facilities**

4.146. The Committee believes that following an upgrade to existing training and administration facilities, the Rail Skills Centre (based at the Newport Rail Precinct) could provide a suitable location for the development of a Victorian Centre of Excellence in Rail Skills. The existing Rail Skills Centre already has significant rail infrastructure in place, with 400 metres of dual track with overhead and associated turnouts, a level crossing and trackside communications systems. There are also 150 metres of tram overhead, with the potential to put in place the track below. All of this infrastructure was upgraded in 2009 after a train stabling project resulted in a reconfiguration of the in-field training facilities.

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284 Asciano Limited, Written Submission, April 2009, 4.
4.147. The Committee also notes that a number of complementary developments are currently occurring as part of a revitalisation of the Newport Rail Precinct, including a new metropolitan stabling facility, maintenance depots and a rail heritage operation and maintenance facility.

4.148. The Committee envisages that the proposed Centre of Excellence in Rail Skills could offer an enhanced range of practical industry training as it expands its operations. As noted by the Victorian Government, the use of simulators and other technologies could also bring new learning experiences to industry training programs, especially those that have inherent safety issues and cost barriers.286

4.149. The Committee experienced a range of training simulators during its visit to driver training facilities in Rockhampton. Although the Committee was unable to undertake a detailed evaluation of the advantages of the use of simulators for driver training, it believes that further consideration of these training methods is warranted.

Management structure

4.150. A key aspect of the proposed Victorian Centre of Excellence in Rail Skills would be the establishment of a Board of Management with representation from all sectors of the industry. The Committee notes that current franchise agreements already require Metro Trains Melbourne and Yarra Trams to participate in an industry skills forum, and believes that this should be expanded to the other Victorian rail operators.

4.151. The Board of Management would provide direct advice to Skills Victoria on the workforce requirements of the rail industry. The Board of Management would be assisted by various functional groups representing the needs of the sectors. These groups would comprise a group of recognised industry experts holding the necessary technical and training expertise.

4.152. For the proposed Centre of Excellence in Rail Skills to be successful, it will be essential that the Board of Management is independent, and not overly influenced by the needs and direction of any one operator or training organisation. Likewise, each rail organisation would need to retain operational independence from the Board of Management through their respective training departments or academies. Nonetheless, the Committee envisages that each organisation would support and provide expertise to ensure the success of the Centre of Excellence in Rail Skills.

4.153. Each organisation, in conjunction with their training departments, would be entitled to tender for and provide training to the Centre of Excellence in Rail Skills. The training provision would be contracted at market rates, with the understanding that government-funded training places should be allocated under the risk-based model. Other training would be sought through the member organisations with the intention of sharing development and delivery costs.

4.154. The Committee believes that funding for the Centre of Excellence in Rail Skills should be provided through three key sources. The Department of Transport should provide funding to establish the land, buildings and rail infrastructure, while Skills Victoria would fund ongoing training and development, as well as a library, electronic and computer laboratories, a workshop and educational training aids. Industry involvement could include direct and in-kind support, including access to appropriate

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computer software, technical drawings, equipment, and fair and reasonable access to in-field operational knowledge and assets for training purposes.

Conclusion and recommendations

4.155. The Committee examined the range of rail-related VET and higher education programs available within Victoria, together with recent enrolments. The Committee found that training within the industry has been insufficient to build capacity in core engineering and trade roles. The Committee observed a shift in industry training efforts in recent years, from trade and technical studies to customer service roles. This has resulted in a situation where certain rail industry occupations appear to be over-trained, while various safety critical occupations are under-trained. Further, the Committee found that the content and design of current training programs do not fully respond to industry needs, thereby creating a disincentive for some organisations to invest in training and development for their staff.

4.156. The Committee believes that training and development within the rail industry could be improved by the development of a clearer qualifications framework within the industry, supported by an accreditation or registration system for safety critical roles. The Committee also believes that the range of higher education qualifications could be enhanced through the inclusion of additional rail-related content, and increased opportunities for students to participate in practical workplace experiences. The Committee believes that the development and delivery of a range of rail-specific short courses would complement the range of industry training that is currently available.

4.157. The Committee believes that skill shortages in the Victorian rail industry will not be effectively addressed until there is a coordinated, industry approach to training, recruitment, employee retention and the utilisation of existing workforce skills. The Committee believes that the Victorian Government can support industry-wide workforce planning through its current skills reform agenda, supported by a state-of-the-art Victorian Centre of Excellence in Rail Skills, which could be located at the existing Newport Rail Precinct. The development of the centre should be a collaborative process involving the Victorian Government and all industry stakeholders.
Recommendations

4.1 That the Department of Transport, in consultation with Skills Victoria and the rail industry, develop a comprehensive industry-wide workforce development plan covering the period up to 2020. The plan should outline:

- current workforce skill needs, staffing levels and qualifications;
- current and emerging skill shortages and skill gaps and their impact on passenger and freight operations;
- required staffing levels in safety critical roles, including the number of apprentices to be included in operator franchising agreements;
- an industry-wide recruitment and retention strategy; and
- an industry-wide training and development plan.

4.2 That the Victorian Government, in consultation with Victorian rail operators, support the development of a single industry workforce advisory body representing all sectors of the rail industry.

4.3 That the Victorian Government, in consultation with the rail industry and relevant advisory bodies, support a review of existing rail industry training packages and qualifications. The review should:

- assess the adequacy of current enrolment levels in qualifications relevant to critical job roles within the rail industry;
- identify any existing, new or emerging skills which are not covered by current industry training packages and qualifications; and
- make recommendations for improvements to the content and range of qualifications available to ensure they continue to meet the needs of the rail industry.

4.4 That the Victorian Government, in consultation with the Victorian rail operators, support the development of a state-of-the-art centre of excellence in rail skills at the existing Newport Rail Precinct. Further, that funding for the centre be made available through the Department of Transport and Skills Victoria, together with direct and in-kind support from industry.

4.5 That the Department of Transport, in consultation with relevant industry stakeholders, undertake an evaluation of the potential to use simulators and other emerging technologies for training and retraining drivers, controllers and other safety critical personnel.
4.6 That Skills Victoria, in consultation with the rail industry and VET providers, investigate opportunities to increase the number of apprenticeships and traineeships in the rail industry, especially traditional trade-based apprenticeships. Options which should be investigated include:

- opportunities for new and sustained training within the industry;
- processes for allocating VET funding to ensure limited resources are targeted towards areas of skill shortages;
- improved incentives for potential students and employers to participate in apprenticeship training;
- measures to ensure that there are a sufficient number of appropriately qualified workplace trainers and assessors to support apprentices within the rail industry; and
- opportunities to increase the flexibility and improve the quality of training outcomes for apprentices.

4.7 That the Victorian Government, in consultation with the rail industry and higher education providers, investigate opportunities to improve the quality and range of rail-related content in higher education programs. Options which should be investigated include:

- bridging programs and other strategies to increase enrolments in engineering and related degree programs;
- opportunities to increase the amount of rail-specific content in engineering and related undergraduate courses;
- opportunities to incorporate high quality rail industry experiences or practical research projects into relevant undergraduate and postgraduate programs;
- opportunities to increase the accessibility of relevant higher education courses offered through interstate or overseas universities, and improve the quality of delivery of relevant distance education programs; and
- development of a range of rail-specific short courses targeted at recent graduates and experienced rail industry employees.

4.8 That the Victorian Government, in consultation with the rail industry, implement a registration system for safety critical roles within the rail industry.