

A Profile of Training and Skills Development in the Australian Rail Industry

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Abstract:

In recent years, sustained economic growth combined with an aging population has contributed to the emergence of skills shortages in many sectors of the Australian economy. One sector in which the provision of professional training and development for workers is emerging as a critical issue, is the Australian rail transport industry (ARTI). The implementation of microeconomic reforms and the enhanced onus on promoting privatisation within the industry, over the last 20 years has led to a substantial downsizing of the national rail workforce and low to negative industry recruitment levels. The resulting effect of these changes has been a considerable loss of collective and individual expertise from the industry. The dilemma is further complicated by the fact that rail operations are becoming ever more knowledge intensive and increasingly dependent on technology transfer. Demographic workforce changes and technological developments, as well as changes to the labour force needs of operators within the rail sector have therefore heightened the need to improve training in order to meet the current and future skills needs of the industry and mitigate existing and emerging skill shortages.

This paper assesses the nature of changes to training which have occurred within the ARTI over the last decade and also analyses changes in the skills set and formal qualifications of rail workers nationally over the same time period, using ABS census data as a reference. In addition, current and likely future training trends within the sector are profiled. In particular the paper outlines some policies and measures which rail operators believe, if implemented would assist in improving training outcomes within the industry. The findings presented are

based on existing literature, ABS statistics and primary research conducted with rail industry representatives including in depth interviews conducted with human resource personnel from 24 different rail organisations nationally.

1. Introduction

This paper draws upon some findings from an ongoing study titled “An inventory of railway skills and a long-term forecast of requirements”. The study is being largely funded by the Cooperative Research Centre for Railway Technologies (Rail CRC) and is being conducted by the Centre for Labour Market Research (CLMR) in conjunction with the Planning and Transport Research Centre (PATREC). The study is principally focussed on analysing skills shortages, as well as profiling and forecasting the training needs of rail operators within the Australian rail transport industry (ARTI).

A skill is defined by Shah and Burke as being “an ability to perform a productive task at a certain level of competence.” (2005: 45). The capacity to complete specific tasks is often dependent on whether individuals possess the necessary skills to do so. Consequently workers who lack particular skills will be less likely to be able to do certain tasks associated with their vocation or will complete these tasks with less proficiency than workers who have acquired the relevant skills. By enhancing the skill base of workers, training improves the efficiency with which they complete tasks and thus raises their overall productivity. The skill level of a worker may therefore be improved by their participation in formal education and training, as well as through the acquisition of on-the-job experience. In this way the fundamental role that training and education plays in developing human capital and its function in contributing to higher levels of production and efficiency within an economy is clearly evident (Burke, 2002).

The continuous development and improvement of people's skills and knowledge therefore invaluablely contributes to progress in many dimensions. From the point of view of the individual, increased participation in training and skills development can ensure better outcomes in terms of employment and income (Burke, 2002). In addition, from a more collective perspective an enhanced emphasis on training and skills development promotes economic development by enabling workers to develop more specialised skills and knowledge, which would assist them in being more efficient and productive such that it results in a higher quantity, quality and greater diversity of output being produced (Burke, 2002).

Funding for training and education can be financed by individuals as well as through various forms of government assistance. Governments can act to subsidise training for enterprises within specific industries by providing them with reimbursable training expenditures or grants and also offering them various tax related incentives for training (Gasskov, 2002). However one of the most important sources of contribution to the overall national investment in human resources and skills development is through direct industry support for training. Collective labour agreements which incorporate training clauses has also facilitated voluntary industry financing of training in many industrialised countries (Gasskov, 2002).

According to Becker (1962) skills can be classified as being either general or specific and this in turn determines the willingness of firms to fund and facilitate training related to the development particular skills. Becker (1962) referred to specific skills as those which are useful only to a small number of firms, namely those that provided the training to acquire them. Therefore training which was designed to cultivate specific skills only improves the productivity of trainees in the firm that provides the training (and has no effect on the

productivity of trainees in all other firms). In contrast, general skills are those which are of use to many firms. Therefore unlike specific training, training which was targeted at developing the general skills of workers increases the marginal productivity of trainees equally for all relevant firms. Due to this principle the increased acquisition of general skills by a worker, would mean there is heightened demand for them from other firms, which could necessitate their existing employer having to increase the worker's level of remuneration in order to retain them. Skill level is therefore a key factor in bargaining that takes place between labour and the management of wages, with research indicating that more general training is associated with larger proportional wage increases (Burke, 2002). Consequently, this could act as a disincentive for firms in a perfect market to fund general training for workers, as employees could be perceived as to be the main benefactors of such training.

General skills can be further classified into the categories of basic, generic and vocational skills (Shah & Burke, 2005):

Basic skills refer to those skills that form the foundation for the development and acquisition of higher skills. These include skills such as literacy and numeracy, whose benefits extend beyond the labour market to contributing to the social and human capital of an economy and also an individual's personal development. Hence a substantial portion of the cost, if not indeed the total cost of providing and developing these skills is borne by the public (Shah & Burke, 2005).

Generic skills includes a diverse range of skills such as the ability of an individual to improve their personal learning, performance and proficiency. Other skills defined as generic include the capacity to problem solve and effectively work in group and team environments (Shah & Burke, 2005).

Vocational Skills are defined as technical skills required to complete particular tasks associated with a specific occupation or occupational group, and thus are generally transferable across firms (Shah & Burke, 2005). The cost to employers of providing vocational on the job training is often subsidised by the government, for example through the payment of an employer subsidy. The cost of vocational training may also be subsidised by employees through their receipt of training wages, which are generally considerably less than the market rate of remuneration (Shah & Burke, 2005).

Often a hierarchical structure is used to recognise skills, such that individual skills are accredited according to the knowledge level required and the degree of autonomous decision making involved in completing a specific set of tasks (Shah & Burke, 2005). For example the achievement of formal qualifications, such as under the Australian Qualifications Framework, is an important mechanism by which individual workers accumulate skills and signal their skill levels to potential employers.

Research indicates that the rewards for employers for sponsoring training are substantial but are not entirely recouped by the firm funding the training since a portion of the direct benefits are diverted to employees in the form of increased earnings (Long et al., 2000). Firms benefit from the provision of general and specific training for a number of different reasons including the fact that other firms and competitors are unaware of the training their workers have received (Burke, 2002). Others reasons why employer sponsored training is advantageous for firms relates to the cost savings derived from workers having greater flexibility and lower turnover rates, along with the fact that it enables firms to pay trained workers less than their marginal product due to the compression of award wages (Burke, 2002).

Contracts of employment such as apprenticeships, traineeships, permanent employment, superannuation schemes and the provision of career structure, may assist firms in increasing their returns on training investments they have made. In the case of training contracts such as apprenticeships and traineeships, these enable employers to pay less than the market wage for at least some duration of the contracted training period (Burke, 2002). However some research indicates that a significant portion of general training is funded by employers, without any evident reduction in worker's earnings while they are undergoing training (Stern, 1995).

In many countries including Australia, governments do not regulate training expenditure by commercial enterprises (Gasskov, 2002). As a consequence in such economies, this "voluntarist" system of skills development results in employers in many industries attempting to minimise their training costs and consequently under investing in the training of their workers (Gasskov, 2002). This is particularly pertinent in highly competitive industries such as the Australian rail industry where there has been heightened pressure on firms to minimise labour costs through curtailing training expenditure, following the implementation of significant microeconomic reforms and the increased privatisation of government run rail operations over the last decade.

2. Current structure of the Rail Industry

The Australian rail industry is very diverse in nature. The industry consists of suppliers, track access corporations, rail operators, (including those specialising in heritage, tourist, freight, passenger transport) and a diversity of other companies covering all sectors of the industry (Transport and Logistics Industry Skills Council [TDT], 2005). Although there is roughly 250 firms in total within the Australian rail industry, approximately 10 large rail enterprises

dominate the majority of the operating and infrastructure sectors (Rail CRC, 2006). Most of the companies in the Australian rail industry are profitable private enterprises that trade in highly competitive domestic and international markets (Rail, Tram & Bus Union, 2004).

Each sector of the rail industry has unique and different corporate and community objectives (TDT, 2005). Urban and passenger rail service providers offer a range of community transport services that are largely financed by taxes and fares. In contrast freight and track access providers are predominantly commercial organisations focussed on making profitable rates of return and being corporately accountable for their capital investments and capital stock.

The organisations that are principally focused on in this study include those that are associated with one or more of the following sectors within the Australian Rail Industry;

i) Providers of Rail Infrastructure Access

This refers to organisations who either lease or own the track they control and thus administer track access to other parties (Affleck, 2003). The category also includes organisations that are involved in the provision of signaling and communications. In some Australian states rail access providers own and control major rail yards and sidings used for the assembling, maintenance and repair of trains. In addition, many of these organisations may also be responsible for controlling train movements to ensure that trains that may be sharing the same track are separated, thereby effectively securing “train control”. Such organisations may solely specialise in the provision of rail infrastructure access which would mean that they are “vertically separated”. Alternatively these organisations may be “vertically integrated” meaning that they have ownership of train operating services in conjunction with being rail infrastructure access providers. Rail operators therefore can assume the status of being “vertically integrated” where they also have control of access to track infrastructure or “vertically separated” meaning that they are exclusively involved in the operation of trains and ancillary terminal services (Affleck, 2003).

ii) Rail Train Operators

These organisations can be broadly classified as being involved in “Private Railways” or “Public Railways” within the Australian rail industry. The Private Railway group includes a small number of train operators whose rail services are not available for hire and reward (Affleck, 2003). These rail operators often have operations integrated with the extraction, refining and transportation of natural resources and minerals.

Public railway operators offer rail services for hire and reward (Affleck, 2003). These rail operators may thus be owned by both private and public sector entities. Train operators in the Australian rail industry may also be categorised according to whether they are involved in the transportation of freight or passengers or a combination of both. Rail operators are referred to as being “horizontally integrated” enterprises if they are involved in the operation of passenger and freight rail services (Affleck, 2003).

Passenger train operators specialise in the provision of commuter, regional and or tourist train services for the transportation of passengers within metropolitan areas, between capital cities and regional areas and also across states and territories. Commonly inter-urban service and urban commuter operators also manage and control ticketing, passenger stations and reservation systems (Affleck, 2003).

The majority of rail freight operators in Australia are engaged in the commercial transportation of cargo, most commonly primary agricultural products and mineral resources. Often rail freight operators own and manage major rail yards and sidings (Affleck, 2003). These serve numerous functional purposes including allowing for the provisioning and fuelling of trains. The rail yards and sidings also provide a base for the storage, assembly and

en route management of trains (Affleck, 2003). In addition many freight operators also own and control intermodal freight terminals. There is thus a prevailing trend for freight operators to be increasingly integrated into multimodal and logistics entities (Rail CRC, 2006).

iii) Maintenance and Other Related Service Providers

These organisations are involved in the manufacture, maintenance and repair of rolling stock including the overhaul of wagons, passenger carriages and locomotives (Affleck, 2003). Rail enterprises classified within this category may also be involved in the lease and hire of locomotives and wagons. It also includes organisations involved in the provision of services related to the development, maintenance and inspection of rail track as well as of communications and signaling systems. A small subsection of enterprises classified in this group are also responsible for providing services related to the recruitment and training of skilled rail personnel (Affleck, 2003).

3. Rail Industry Reforms

Australia's railway sectors have undergone significant changes over recent decades.

Initiatives by the Commonwealth and State/Territory Governments' to promote more competition and efficiency within the rail industry have resulted in an increase in private rail activity and a decline in government ownership and management of railways (TDT, 2005, Hensher et al., 1994). These deregulation policies were part of a wider microeconomic policy framework and were designed to open the rail industry to more private sector competitive forces and remove the existence of state based government monopolies (Everett, 2006).

The reforms involved significant deregulation of the industry based on the recommendations of the 1991 Industry Commission inquiry into rail transport, the 1993 Hilmer Report as well

as the National Competition Policy (Everett. 2006, Productivity Commission 2000a). Many of the policies that were implemented were based on a fairly broad microeconomic reform framework and involved enforcing a more commercial focus on rail operators to improve cost recovery (Everett, 2006). The structure of railways in most Australian jurisdictions consequently changed with many of the previously integrated State rail authorities being vertically and horizontally separated. Prior to the implementation of the reforms, most railways were controlled by State specific rail organisations which managed both below and above track operations within their jurisdiction and provided a combination of urban passenger, non urban passenger and freight services. Australia's railways thus had previously been horizontally and vertically integrated, which effectively meant that a single government agency controlled activities such as track provision, signalling, maintenance, train operations and timetabling. The implementation of rail reforms in the 1990's however resulted in several rail networks in Australia being structurally separated (Productivity Commission, 2000a).

The rail reforms introduced in the 1990's have been identified as being responsible for cultivating increased private sector participation and competition within the Australia rail industry, resulting in reduced freight rates, improvements in service quality and increased productivity (Productivity Commission 2000a, 2000c). In turn, this has been credited with enabling productivity improvements estimated to be worth more than \$2 billion (Rail, Tram & Bus Union, 2004). The development and implementation of new technologies has also strongly contributed to productivity growth within the Australian rail industry and it is likely that this trend will continue and accelerate in the future (Rail CRC, 2006). The improvements in the levels of productivity and competition experienced within the Australian rail industry have contributed to a 18% decrease in freight rates over the period spanning from 1990 to 1997 and a 30% reduction in real national freight rates from 1989 to 1998 (Everett. 2006, Productivity Commission. 2000b).

Another consequence of the reform process and resulting labour productivity growth has been a large scale reduction in employment in the rail industry. Employment fell by around *one half* between 1991 and 2001. The Productivity Commission estimated that the number of full time employees in the rail industry decreased from 88500 in 1986 to 36500 in 1998 (2000c). Analysis of ABS Census data also shows a halving of employment in the rail transport industry between 1991 and 2001. Other factors believed to be responsible for the decline in demand for rail labour include increased competition from alternative transport modes; increased contracting out of rail operations and the redefining labour arrangements through multitasking or multiskilling.

4. The Skills Profile of the Rail Workforce

This section provides a detailed analysis of the skill profile of the Australian rail industry workforce using data from the 1991, 1996 and 2001 ABS census of Population and Housing. Data on rail employment are available from a number of existing published reports. Estimates of employment vary according to the methodology used and how the 'rail industry' is defined.

The only source of data amenable to an analysis of the rail workforce at the level of detail required here is that from the full population census. The 1996 and 2001 Censuses classified employment according to the 1993 version of the Australian and New Zealand Standard Industrial Classification (ANZSIC), while the 1991 Census used the Australian Standard Industrial Classification (ASIC). Both classification systems included a category of 'Rail Transport' and this category is used to represent employment in the rail industry. This will exclude workers engaged in rail activities but for whom their employer's main activity relates to another industry, as may be the case with some haulage activities within mining companies.

Occupational trends within the rail industry suggest a degree of skill-biased structural change which is most commonly associated with changes in technology. The skill composition of the workforce can be directly assessed through Census data on workers' highest level of qualification (see Table 1). It is clear from a comparison of the qualification profile of workers overall in 2001 (column 3) with the rail industry (column 2) that a higher proportion of rail industry workers have a certificate qualification when compared to the national average for all Australian industries, and are also more likely to possess no recognised qualification. Conversely, rail workers are less likely to have tertiary education qualifications, with the percentage of rail employees possessing a postgraduate degree, graduate diploma and/or certificate, bachelor degree and/or an advanced diploma or diploma, being recognisably lower than the Australian industry average.

This broad profile of a concentration of skills in the 'intermediate' range, is also evident in data from the 1991, 1996 and 2001 Census, and can be primarily attributed to high proportion of employment within the occupations of transport drivers, intermediate transport operators and intermediate clerical workers. However, caution must be taken in investigating the trends between the census as the classifications of qualifications changed from 1996 to 2001. Most importantly, in 2001 certificates were no longer distinguished as basic or skilled as they were in 1996. Despite these shortcomings, the general trend towards higher levels of qualification within the rail workforce is confirmed. Employed persons with 'No recognised qualification' is the only group to have declined, with their share of employment falling by seven percentage points. Rail workers with bachelor degrees displayed the largest increase in their share of employment, up by three percentage points between 1996 and 2001, although at 7.2% this is still half the proportion with bachelor degrees in the wider workforce. By and large, the increases in the proportion of qualified workers with qualifications, and the fall in

those with no qualifications between 1996 and 2001, has been more pronounced than in the wider workforce. This suggests these recent changes are associated with reforms within the rail industry rather than a just a more general trend of ‘credentialism’ within the labour force as a whole. It also reverses the trend between the 1991 and 1996 censuses in which rail industry workers became, on average, less qualified than the workforce as a whole, as indicated by the figures outlined in Table 2.

Table 1: Employment shares by level of qualification, Rail and All industries, 2001

	Rail Industry			All Industries 2001 Share (3)
	1996 share (1)	2001 share (2)	Change in share (2)-(1) pct pts	
Postgraduate Degree	0.8%	1.6%	0.7	2.9%
Grad Dip & Grad Certificate	0.4%	0.9%	0.4	2.2%
Bachelor Degree	4.2%	7.2%	3.0	14.9%
Advanced Diploma & Diploma	3.4%	4.7%	1.3	8.2%
Certificate (skilled vocational)	20.4%	26.2%	1.6	21.6%
Certificate (basic vocational)	4.1%			
No recognised qualification	66.6%	59.5%	-7.1	50.3%
Total	100.0%	100.0%	0.0	100.0%

Table 2: Percentage change in employment by level of qualification, Rail and All industries, 1991-1996

	Rail Industry	All Industries
Higher Degree	16.80%	32.25%
Postgraduate Diploma	-12.50%	31.94%
Bachelor Degree	-23.60%	30.94%
Undergraduate Diploma	-51.49%	-8.01%
Associate Diploma	1.38%	52.40%
Skilled vocational qualification	-51.31%	7.24%
Basic vocational qualification	-93.30%	-9.57%
No recognised qualification	-72.45%	-0.29%
Total	-64.52%	6.90%

5. Preliminary Findings Based on Interviews

The results reported in the following section are based on the findings derived from a series of in-depth, face to face interviews conducted between December 2006 and March 2007, with senior human resource personnel from 24 different rail organisations across Australia.

Changes to Rail Training in the last 5-10 years

A high proportion of the rail operators interviewed believed that there had been a substantial reduction in training investment across the industry, over the last decade. Most of the interviewees purported that this downsizing of training occurred around or slightly before the period in which some of the major microeconomic reforms were implemented in the 1990's, during which the majority of the previously government owned rail organisations began to be privatised. There was thus a significant structural shift within the rail industry which resulted in changes in how workers were recruited, trained and developed. Many of the respondents identified that the large scale training programs and resources sustained by the government owned rail organisations were subsequently substantially rationalised or viewed as a non-core part of operations. This was fuelled by the increased focus placed by many rail employers on competitive tendering processes, especially in the more technical areas (such as track and rolling stock maintenance) where services were increasingly being outsourced. In addition, many rail employers preferred not to have to contend with the considerable financial costs involved in and time required to effectively train workers and the risk of losing this training investment due to the loss of workers to other operators as a result of poaching. The prevailing view is that this effectively resulted in a void being created with regard to the vast training needs of the rail industry being largely unmet.

Numerous respondents pointed out that there had been a significant shift from previous industry practices, since rail employers no longer provided staff with a career path in which they recruited workers and trained them throughout their whole career progression, as was the case in the past. The predominant reluctance of rail operators in the recent past, to invest in the training and development of their workers, also led to there being a distinct decline in the number of apprentices and trainees that were recruited during this period within the industry.

This trend was affirmed by many of the study participants who asserted that rail employers over the last 10 years have consequently increasingly looked to recruit workers with pre-existing rail qualifications and experience. Many share the view that this has acted to exacerbate increased competition and poaching of qualified and experienced rail workers as well as has also contributed to the aging of the industry workforce, since operators deliberately attempted to minimise their recruitment of younger, less experienced and qualified workers. Furthermore, it has been identified as one of the principal reasons why the rail industry now faces critical skills shortages in key occupational groups.

In addition, several rail organisations who did continue to recruit trainees and apprentices stated that now they did so through third party providers who took care of the administrative and contractual responsibilities. Under these arrangements, the trainees and apprentices worked for the rail operator but were employed by a different organisation, most commonly a group training company. This thus represents a definite shift from the past when it was more likely that these rail operators would have directly employed the apprentices and trainees themselves.

Some smaller operators interviewed, most commonly those involved in freight transport and “below rail” operations, asserted that they would prefer to continue recruiting already skilled and experienced rail workers and will attempt to proceed to do so, wherever possible in the future. However many of the larger rail organisations and the majority of operators in the passenger transport sector, expressed that they were already committed to or were looking to increase their investment in training and their intake of apprentices and trainees going forward, in an attempt to mitigate many of the skill shortages and aging workforce issues they currently face. Most of these rail employers believed that it was unproductive and

unsustainable for the industry to continue tolerating the “training gap” which had prevailed in recent times and that more effective measures had to be taken to address many of the problems operators were confronted with in relation to skill shortages, poaching and the aging of their workforces.

Many of these larger sized rail employers were thus also more likely to offer apprenticeships, traineeships, internships/cadetships and professional graduate recruitment programs. The majority of these rail employers also offered generous study assistance programs to encourage their staff to take on additional study or further training. This often involved providing financial assistance and support to workers to help meet the costs associated with undertaking the additional training or education. In addition, many of these organisations offered workers incentives in the form of monetary rewards and bonuses and allowed them time off and study leave provisions to enable them to better accommodate their training and study needs.

Fourteen out of the 24 rail operators interviewed stated that they delivered most of their training internally, with eleven of these organisations asserting that they had their own internal RTO. Another two of the respondents indicated they were looking at the possibility of developing an internal RTO within their organisations in the future. Despite the fact that the majority of respondents used predominantly internal training resources to deliver training to their workers in-house, most rail operators interviewed commented that there had been a definite trend in recent years, favouring the increased outsourcing of more training services to external providers. Many believed that this has led to the emergence of a niche markets for the provision of rail training within the industry and the ascendance of many specialised training providers such as CERT, RTI (Rail Transport International) and Skilled Rail.

Similarly several respondents commented that the current market conditions and skills shortages had led to the emergence in recent times of specialised labour hire organisations (e.g. CERT, Skilled, Southern Cross) that trained rail workers in specific vocations and then hired them out to rail organisations that required these type of workers. Many of the interviewees believed that this was of benefit to rail employers as it enabled them to have greater flexibility from a human resources perspective and also improved labour mobility within the rail industry. Most operators also predicted that the growth in demand for the services and labour offered by these specialist organisations which had occurred over the last decade, would likely to continue in the future.

This shift towards increasingly using external training providers was especially prevalent amongst the comparatively smaller sized rail operators and appears to have coincided with many of these operators downsizing their internal training resources. It was also reported that due to the involvement of more corporate institutions and other organisations in the provision of rail training, operators in the rail industry now had more choice and flexibility with regard to how they delivered training to their staff.

Many of the larger sized operators, particularly most of those involved in the provision of passenger transport services, however seemed to have continued delivering the majority of their training for workers internally, with many using their accredited Registered Training Organisation (RTO) status and internal rail schools or training colleges to do so. Most of these operators believed that it was more optimal for them to deliver the training inhouse due to their expertise in the relevant areas, their intimate knowledge of what specific training their workers required and their ability to adapt the training so that it was better suited to their specific systems and business operations. Some of these respondents also pointed out that in

addition to improving flexibility, maintaining the delivery of training internally enabled them to better facilitate the retention of business knowledge within their respective company and also ensured that they weren't overly reliant on external providers to service their training needs. Therefore many of these rail operators either did not outsource any of their training or only minimally utilised external training providers to deliver specific training outside of their areas of expertise such as in the use of computer/IT resources, first aid and manual handling training.

Another prominent trend that was noted by several of the interviewees was that there had been a streamlining of rail training such that duration of many of the training regimes undertaken by workers had been reduced, so that they now took less time to complete than had been the case in the past. Many of these operators felt that such training processes had become more efficient due to the implementation of improved training techniques and better development of training personnel and trainers. An example which was commonly mentioned was in relation to locomotive driver training. Numerous study participants cited that the time required to train a worker to become a fully qualified driver had reduced from being 2-2.5 years minimum (and in some cases even longer) in the past, to now only requiring 14-18 months.

However some rail operators believe that the streamlining of such rail training has led to training being too short and general and thus not comprehensive enough in terms of the content and subject matter that is covered. In particular, several of the interviewees expressed concern that this decline in comprehensive rail training has led to reduced coverage of rail safety issues and diminished training in this area, resulting in workers now being less proficient in their knowledge of safety standards and procedures. The strength of criticism of

some of these operators in relation to this is so potent that they feel that this decline in comprehensive rail training has resulted in safety within the industry being increasingly compromised and is one of the main factors which has contributed to the increased incidence of rail accidents in recent times.

One prominent change with regard to training in the Australian rail industry that was identified by the study participants as having occurred in the last decade, was the shift towards more competency based training. As a result, training within the industry is now nationally accredited with standards being externally driven by a governing authority that establishes the criteria for training and assessment. This has resulted in rail training being more aligned with Australian National Training Authority (ANTA) standards so that training is increasingly based on achieving specific outcomes to qualify for a certificate of competency that is nationally recognised. Thus in recent years, the skill and qualification requirements across the rail industry have become more standardised and often linked to national guidelines (e.g. the Australian Qualifications Framework - AQF) as determined by external regulatory boards, which has also lead to the emergence of more skill based programs.

Prior to the emergence of competency based training, the actual training standards and requirements were largely determined for each rail organisation by the individual operators themselves. Therefore, although there were likely similarities between most of the different training modules and regimes delivered by specific rail organisations to workers, the majority of the training was not nationally accredited and in most cases, was not recognised by any other rail employer other than the particular one that was responsible for developing and/or delivering the training. However after implementation of a more standardised training model framework for the industry, the rail regulators increasingly insisted on the delivery of rail

training by RTOs who were independently audited to ensure safety and accreditation requirements were met by the respective training providers. Therefore RTOs became subsequently increasingly utilised by operators to deliver rail training as they had the authority to determine and certify the competencies and qualification levels of rail workers.

This trend towards a more nationalised and standardised training framework has also resulted in the increased use by rail operators of training resources and packages developed and administered by the Transport and Logistics Industry Skills Council (TDT). This fact was confirmed by many of the rail employers interviewed, who acknowledged that they now increasingly used the TDT's training resources to deliver training to their staff. Many respondents also believed that there was now a renewed focus on matching training to the skills that rail workers in specific occupations required (more "training for the job"), as opposed to training academically just for a qualification, which had tended to occur more commonly in the past. These operators further asserted that there had thus been a distinct decline in the rail industry of what some might call "unnecessary training" i.e. training not directly related to improving the organisation's profit margins. From the perspective of most of these interviewees there was now instead a greater awareness for the need for targeted training which involved providing workers with more precise and detailed training to meet the needs of their specific vocation within the organisation.

Current Rail Training Practices

Most rail operators stated that the majority of training for operational staff involved a combination of different components including some in class training, supplemented with some on the job training experience. However the exact composition of how training took

place varied depending on the specific operator and respective occupational group involved. Many of the interviewees stated that training delivered in a class room type setting was generally reserved for theoretical material and that the majority of the training particularly for frontline staff (i.e. drivers, shunters, etc.) was completed on the job. Numerous operators also asserted that they were constantly looking at how they could better deliver training to their staff to best accommodate their diverse capabilities especially in relation to their familiarity and aptitude in using IT and other technological resources.

Some rail organisations also used computer and web based resources to deliver their training to workers. A few rail operators did assert that they believed there had been an increased trend towards the use computer based training with some saying that there was a definite rise in the use of online resources and simulators (especially in relation to locomotive driver training) by their organisations in recent years. Several interviewees also felt that there were now more numerous training courses for the use of different types of technology (e.g. ultrasonic training) offered by external training organisations. Others also predicted that the increased use of computer based training and online delivery of training would continue to occur within the rail industry in the future, with several respondents (especially the larger sized operators) stating that it was definitely an option that they were looking to implement and expand on going forward.

However some of the smaller operators felt that they preferred to continue using largely on the job training as opposed to using simulators and more computer based training resources. This was because the majority of them believed that on the job training was more effective and practical, especially when it came to their operational and “on the ground” staff, since on the job training allowed these workers to develop a more relevant and useful skill set. Another

impediment to the enhanced use of simulators and other sophisticated training technologies for some operators was the considerable associated expense and disruption to their normal operations that would occur if such training resources were utilised. Other respondents felt that such modern training aids were ineffective because they were too unrealistic when compared to the real life scenarios they were supposed to model. Some were also perturbed by the difficulty these training tools presented to older workers who were less accustomed to the use of such modern technological resources as their younger colleagues.

Another sentiment commonly shared by the study participants was their belief that there was a lack of rail specific training programs and courses offered by the more generic, training providers and educational institutions such as TAFEs and universities. This was thus listed as one of the principal reasons why many of the rail operators abstained from sourcing training for their staff from such institutions (and in particular largely explained the low demand for TAFE training services from rail organisations). Several operators were of the view that TAFEs and similar educational institutions did not currently offer any relevant rail specific training courses or programs. Many also commented that this was in contrast to the considerable amount of training offered for other transport, distribution and logistics disciplines that is currently available from some TAFEs and universities.

Some felt that a fair degree of the responsibility for the lack of rail specific training at TAFEs, universities, etc. lay with the rail operators and the industry overall for not being more proactive with such institutions and taking the initiative to encourage them to develop and establish more rail specific training programs. Many interviewees however felt that it would take such institutions a considerable amount of time and resources to be able to efficiently offer training of the same standard and quality as existing rail specific training providers.

Many also posed the question of whether it would be worthwhile and profitable for such institutions to attempt to deliver rail specific training courses due to the substantial amount of time and resources that would be required to develop such quality rail specific training programs, especially given that efficient and effective rail training providers already exist.

Some operators did note that some TAFEs did offer some pre trade and shunter training which was utilised by some rail organisations. A few of these organisations also asserted that they were more likely to use TAFEs for training in regional areas due to the reduced number of training providers often available in these areas compared to metropolitan areas and the fact that TAFE often had the vast resources required to cater for their training needs. A few rail operators stated that often TAFE was the only training provider in certain regional locations that had the facilities and resources they required to effectively train their workers.

Several operators were also aware of rail specific training programs and courses offered by several universities, some of which they incorporated as part of their training regimes for their workers. Examples of universities with rail specific training courses that were utilised by some of the study participants included the Central Queensland University, Queensland University of Technology (QUT), Royal Melbourne Institute of Technology (RMIT), University of Western Sydney and University of Queensland.

External training providers including universities and organisations such as the Australian Institute of Management (AIM) and SHL were commonly used by many rail operators to deliver specialised training to professional staff in the areas of business, leadership and management development and also to develop their skills and expertise in the areas of finance, industrial relations and corporate affairs. Some respondents also believed there had

been growth in the market for capability enhancement and development programs with increased demand for courses that were designed to improve the proficiency of staff in specialised areas such as in relation to financial literacy and contract management. The outsourcing of training related to specialised equipment was also common within the industry with most rail organisations utilising the training services of the providers or manufacturers of the equipment to deliver the relevant training to their workers relating to the specific equipment. This included using the equipment related training services of organisations such as Westinghouse, Motorola, Siemens, who were often responsible for manufacturing or supplying the rail operators with the equipment in the first place.

Many rail operators also reported that even when they utilised training services from RTOs from within the industry and other external training providers, most still had to work closely with them to design and customise their training programs so that they were specialised enough to service their specific business and operational needs. Therefore although these operators outsourced the training of their staff to external training agencies, they still provided a lot of internal input. Such training regimes often involved open training systems, where RTOs are very much utilised to deliver the training. Hence, despite the fact that these rail organisations delivered their training through external training providers, many stated that they still contributed internal resources from a subject matter perspective and spent time working with the training provider (s) to tailor and adapt the training to best suit their needs. In this way, localised content training is often provided to enable workers to adapt to an operator's specific rail equipment and operations and thus acts to supplement the broad based theoretical understanding that is provided as part of the general training. This is reflective of the trend across the industry towards more operator aligned training as opposed to broad-brush theoretical training.

Future Changes to Rail Training in the next 5-10 years

All operators interviewed believed they would at the very least consolidate their organisation's current levels of training investment, with many asserting that there would likely be significant increases in the extent of resources devoted to enhancing training in the future, particularly as the size of their workforce and operations grew. The overwhelming majority of respondents expressed the intention to maintain and expand the existing relationships they had with specific training providers they had already established, rather than develop new training relationships with training agencies with whom they had no previous dealings. Several of the interviewees also believed that they were likely to invest more in capability development training going forward with an enhanced focus on personal, management and leadership development programs. Consequently many of these operators also believed that demand for training organisations that offered such courses and programs would be likely to grow in the future.

Many rail operators expressed the desire to develop more indepth partnerships with other rail organisations, the government, industry groups, educational institutions and training providers to foster the development of more rail training programs and facilities. The need to promote greater training alliances between rail operators was especially identified as an important outcome to work towards, due to the fact that many of the organisations within the industry had similar training needs. The predominant view therefore was that it would be beneficial for the operators to facilitate and coordinate the sharing of training resources and services wherever possible. This would be especially pertinent in cases such as where specialised training only needed to be provided for a small number of workers.

One future outcome that many rail operators interviewed wanted to envisage, was an even greater push towards a more nationalised and standardised training framework and accreditation system across the industry. This would principally involve the establishment of a more standardised skills recognition model which accommodates improved consistency in the rail training programs and competencies between all the states. Most of the rail organisations believed however, that in order to achieve this there must be a cohesive framework developed in terms of the types of technology and rail systems that were utilised, such that for example communication and signalling systems became more standardised nationally. More specifically many of the operators felt that a lot of the training relating to rail specific risks and technology such as with track safety awareness, should be adapted to a national model.

Several of the operators interviewed stated that they would also like to see the development of a more mature external training network for the industry which would facilitate the training of rail workers to acquire base qualifications such as core competencies in safe working or occupational health and safety training (e.g. associated with a Certificate 1 or Certificate 2 in Rail Operations). Some of these respondents believed that this should be an industry wide initiative in which all operators contributed towards the establishment of a centralised training provider (whether that be through a largely government funded institution such as TAFE or some other privately operating training agency) which administered basic rail training and then placed the trained workers with relevant rail operators that required them. This would prevent duplication in relation to the provision of training services by rail operators and also minimise their individual training and development costs. In addition it would also ensure that there was a pool of base qualified rail workers and trainers for all rail operators, which would also assist in improving labour mobility within the industry.

Other rail operators would prefer to see more general training initiatives which are developed at an industry level and then delivered through relevant training providers (i.e. TAFEs, RTOs, etc.) depending on the specific region in question. A specific model that was cited by one interviewee was the example of a TAFE institution that provided a particular rail organisation with direct rail training for their workers. However all the training delivered by this TAFE had been developed previously by the rail organisation but was handed over to the TAFE to do the delivery and assessment as the RTO.

Most operators did mention that they received financial funding from the government to help support and assist them with the apprentices that they took on. However one issue that was raised with regard to government funding assistance for the provision of rail training was in relation to the fact that rail operators who also had an internal RTO received less funding, with most receiving roughly half the amount that other training providers were entitled to. This was viewed as inequitable by the majority of the interviewees, with many believing it acted as a disincentive for rail operators to develop and facilitate internal training and therefore was an inconsistency that needed to be appropriately resolved in the future.

An increased focus on safety was also listed by some study participants as what they would like to see incorporated more in rail training in the future. Although many believed the coverage of safety content in rail training currently is satisfactory, many wanted an even greater onus placed on this component of training over the next decade. These operators felt the decline in comprehensive rail training and the resulting reduced focus on rail safety training was of particular concern. They believed this was especially pertinent since the emphasis on equivalent training in similar industries such as the airline and shipping transport sectors had been enhanced in recent years and was thus definitely an issue that clearly needed to be addressed by the rail industry going forward.

Another preference expressed by rail operators was to have more flexible arrangements with regard to how the training is delivered to their workers such that it could be completed with minimal interruption to the normal working hours of staff and business operations, so that it would also be more cost efficient for rail employers. Some of the measures that the respondents were looking at to help them to achieve this included developing more computer based training and incorporating more internet based, self paced training modules.

6. Conclusion

The preliminary findings from the interviews indicate that there is a need to expand education and training within the rail sector to meet the changing skill requirements and growing training needs of operators, as well as to compensate for existing training deficiencies within the industry. There is therefore clearly a need to increase employer training expenditure by improving the benefits and minimising the associated costs for rail operators of investing in training.

In developing strategies to promote employer funded training within the rail industry, it needs to be appreciated that an employer's incentive to invest in training will be enhanced by (Burke, 2002):

- The development of more cost effective training options
- Increased employer awareness about the benefits of investing in the training of their workers
- Minimising the proportion of the productivity gains that are redirected to workers in the form of higher remuneration
- The longer the duration of work or retention of employees while the training is still effective

Rail employers interviewed stipulated time and cost considerations as important factors which currently deterred them from increasing their investment in training. Another common reason why many of the respondents felt they did not need to enhance their expenditure on training, was their belief that their staff were already adequately trained. Although this assertion may be correct in some cases, it could nonetheless still indicate a deficiency in knowledge of the training options available and their benefits. This could also reflect the preference of many operators to delay the expansion of training expenditure, required to address emerging skills needs. Therefore rail employers appear unlikely to increase their investment in training unless they are able to effectively control allocation across the firm and be in a position to monitor the resulting benefits.

A firm will be able to increase its return on its training investment through taking effective measures to increase retention amongst its trained workers, without providing pay increases (Burke, 2002). Smaller sized rail operators generally tend to pay lower wages to workers and also often have fewer career opportunities within their organisation and so consequently more commonly experience difficulty in retaining employees. Therefore since they are at greater risk of losing workers that they train, smaller sized firms are less likely to invest substantially in the provision of training for workers than their larger counterparts. This trend is clearly demonstrated in the Australian Rail Transport Industry (ARTI), as evidenced by the results of the interviews.

One way in which the risk that many rail operators face in losing their training investment in skilled workers due to the poaching of these employees by competitors could be reduced, is by developing implicit industry wide agreements between employers not to engage in such practices. These collective agreements could be effectively convened and regulated by government and industry bodies.

It is also likely that the advantages for individuals of acquiring further education and training will be greater if rail employees and their employers can be made aware of the value of the knowledge, expertise, skills and other capabilities that workers gain as a result. A standardised system of rail qualification accreditation which is recognised and understood consistently nationally would greatly assist in achieving this objective. Incorporated within these national frameworks should be processes to effectively recognise prior learning such as on the job training and workplace learning.

Governments and industry bodies could also assist firms in identifying specific types of training required in particular rail occupations. For example, rail industry training boards could be established to determine the competencies needed and methods for assessing competencies in a diverse range of occupations. The preference amongst most rail operators appears to be to have these specifications included within a standardised, national training framework which would promote consistency and further improve the returns on training for both workers and employers.

As asserted by many of the interviewees, the development of industry wide training resources and facilities would reduce the cost and inconvenience for individual operators of developing and maintaining these resources themselves. The main beneficiaries of such training support from government and industry bodies would likely to be medium and small sized employers, who generally provide the least amount of training to workers. Larger sized operators however, are more likely to be able to independently finance the training of workers and generally have more sophisticated and detailed processes for identifying the training needs of their workforce and developing effective training measures to address these.

Considering the above facts and other points raised in previous sections of this paper, government or industry sponsored programs designed to increase employer funded rail training are therefore likely to be more effective if they include:

- Schemes that assist in improving the awareness of rail operators as to the many advantages that derive from investing in training, particularly in terms of enhancing profits and contributing to the intellectual capital of their organisation
- Subsidies, tax relief or other financial incentives coupled to the employer's level of training expenditure
- Initiatives that enable firms to recoup a greater proportion of the benefits that result from increased training investment
- Assistance in developing effective training regimes and the provision of infrastructure support such as promoting information for "best practice" and other benchmarks

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