

Industrial apprenticeships – another dying Labour tradition?

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Abstract

Despite extensive changes occurring in the latter half of the twentieth century, the persistence of apprenticeship in Australia stands in stark contrast to its virtual disappearance in some other industrial capitalist countries, such as the United States of America. It has been argued that the apprenticeship system in Australia arose out of late nineteenth century craft union demands that an indentured apprenticeship be a compulsory requirement for the attainment of skilled worker status and pay.

Consequently, the apprenticeship system is a strong labour tradition, which, along with compulsory arbitration and trade union membership, undergirded the skilled labour system throughout the twentieth century.

In the second half of the twentieth century, the traditional system of five-year apprenticeships for boys entering a skilled trade underwent vast changes, including shortening the overall period of indentures, increasing the proportion of theoretical training, opening the trades to female applicants and, ultimately, introducing a range of short-term traineeships. This paper presents an overview of these changes, and examines their impact in relation to two Western Australian workplaces: the Midland Government Railway Workshops and the East Perth Power Station. The paper poses the question whether the trade apprenticeship has become another threatened labour tradition, and if so, what are the ramifications? Is a system of apprenticeship that benefits the worker, the employee and society by creating a skilled workforce, now regarded as a luxury for which neither government nor private enterprise is prepared to foot the bill? Is it, indeed, yet another labour tradition that has succumbed to the hostile attacks of non-sympathetic governments?

In Australia, if a literature survey recently undertaken by the author is indicative, apprentices and their training tend to be the province of contemporary government reports and industrial relations scholars, rather than historians. Yet, as John Shields has pointed out, despite its decline in the latter twentieth century, ‘the persistence of apprenticeship in Australia stands in stark contrast to its virtual disappearance in some other industrial capitalist countries, most notably the United States’.ⁱ Furthermore, as Shields and othersⁱⁱ have indicated, the revival of the apprenticeship system in Australia arose out of craft union demands at the end of the nineteenth century that an indentured apprenticeship be a compulsory requirement for the attainment of skilled worker status and pay. Consequently, the apprenticeship system has been a strong labour tradition, which, along with compulsory arbitration and trade union membership, undergirded the skilled labour system in Australia throughout the twentieth century. As such, it is also a significant aspect of labour history.

In the second half of the twentieth century, the traditional system of five-year apprenticeships for boys entering a skilled trade underwent considerable change, including shortening the overall period of indentures, increasing the proportion of theoretical training, opening the trades to female applicants and, ultimately, introducing a range of short-term training schemes. This paper presents an overview of the initial development of, and subsequent changes to, the apprenticeship system in Western Australia, with reference to two Western Australian workplaces: the Midland Government Railway Workshops and the East Perth Power Station. The paper poses the question whether the trade apprenticeship has become another threatened labour tradition, and if so, what are the ramifications? Is a system of apprenticeship that benefits the worker, the employee and society by creating a skilled workforce, now regarded as a luxury for which neither government nor private enterprise is prepared to foot the bill? Is it, indeed, yet another labour tradition that has succumbed to the hostile attacks of non-sympathetic governments?

A history of apprenticeship training in Western Australia

In Western Australia, apprenticeship training dates from the turn of the nineteenth century. Perth's first technical school was established in 1900, and offered 'voluntary classes for trade apprentices and others possessing an "occupational" qualification.' From 1908, the Railways Department arranged for all trade apprentices in its employ to attend special classes of two hours per week during working time, but it was not until 1925 that State Parliament amended the *Arbitration and Conciliation Act* to require employers to meet the cost of any technical instruction of their apprentices that occurred within 'ordinary working hours.'ⁱⁱⁱ The Western Australian *Act* of 1925 gave the Arbitration Court the powers to determine: the method of indenture, terms and conditions of apprenticeship, the syllabus and methods of instruction and examination of apprentices. When there were sufficient numbers, the Education Department was to provide day classes for apprentices; smaller numbers were to be catered for in evening classes. The Amendment also determined the length and frequency of classes, and that they would consist of 'two hours workshop training and two hours of mathematics, [technical] drawing, trade and science'.^{iv}

By 1937, a handful of trades (electrical and mechanical fitting, carpentry and joinery, blacksmithing, boilermaking, sheet metal working and plumbing) were served by an Advisory Committee on Technical College trade classes, whose role was to recommend a syllabus of instruction and the appointment of instructors.^v These Advisory Committees functioned until the 1970s, when they became known as Industrial Training Advisory Boards, and were re-located in the Industrial Training Division of the Department of Labour and Industry.^{vi}

The apprentices' on-the-job training was determined by conditions set out in the *Apprentices Syllabus of Training*. As an example, the 1940 syllabus for the Western Australian Government Railways [WAGR] set out the requirements for every blacksmithing apprentice in each year of his training, as follows:

First year

Shall be capable of driving steam hammer and striking for a blacksmith. Shall be capable of simple forging and plain welding of iron and steel.

Second Year

To be capable of more advanced work including hose pipe clips, buffer washers, small knees, brake block keys, eye bolts and anvil tools for personal use[and so on, until] ...

Fifth Year

Shall be capable of satisfactory carrying out all general repair and manufacture blacksmithing required for locomotives. Capable of taking out quantities of materials required. Understand the use of templates and competent to work to a drawing.^{vii}

Consequently, all aspects of an apprentice's training, from his learning on the factory floor to the input of his Technical Education syllabus, was strongly influenced and overseen by the industry involved and governed by conditions determined in the Arbitration Court. It was not until 1950, however, that the Technical College syllabus was brought into line with the practical work taught on the factory floor. Prior to this time, some apprentices, including some trained by the State Electricity Commission of WA (SECWA) at the East Perth Power Station and elsewhere, were placed in the difficult situation of having to learn at Tech. in first year the theory of skills that the employer would not teach them until second year.^{viii}

In 1952, the first National Enquiry into Apprenticeships, headed by Mr Justice Wright, recommended shortening apprenticeships from five (or in some cases six) years to four years and extending opportunities for off-the-job training courses. The new system placed increased value on learning theory in Technical and Further Education (TAFE) classes. There was a new emphasis on attaining some type of national standard in training. The Australian Apprentices Advisory Committee, whose membership was made up to Commonwealth and State training authorities, formed in 1957 to meet the increased demand for involving 'outside' bodies in apprentice training. An aim of the re-structuring was to make apprenticeships more attractive to young men who had completed the final year at high school, and this appears to have succeeded. In 1954, there were between 65 000 and 70 000 apprentices in Australia; by the late 1960s, the number had increased to 100 000.^{ix}

In the last quarter of the twentieth century, three further significant changes resulted from the achievement of a national standard, the entry of females in traditionally male-only trades, and the creation of a range of traineeships, short apprenticeships and other means of obtaining a trade qualification. The 1970s saw

the introduction and expansion of the National Apprentice Assistance Scheme; the replacement of the Apprentices Advisory Board with the Commonwealth and State/Territories Apprenticeships Committee to develop a national strategy, and the inauguration of Youth traineeships providing a wider range of training opportunities, and encouraging young women to enter apprenticeships in traditionally male-dominated areas. Despite these initiatives, there remained much that apparently needed changing in the structure of apprenticeship training. In a paper delivered at an Australian College of Education conference in Albany (WA) in August 1984, Michael Cross, Executive Director of WA Department of Education and Training, used the results of a survey of employers, educationalists and others involved in training to strongly criticise the existing apprenticeship system, which he branded as ‘an anachronistic hangover from the Medieval guild system’; ‘inefficient’ as it was based on time serving (rather than competencies achieved); ‘inflexible, slow to change, not keeping pace with technical change’, and therefore – perhaps most damningly of all – that the apprenticeship system was not a reliable source of skilled people. The system was discriminatory in that it excluded females; moreover, the creation of trade elites, through the system of apprenticeship training, was one of the major impediments to restructuring the Australian labour market and removing the demarcation ‘problems’ that were a feature of the occupational structure.^x These criticisms had been also made by Dr Norman Dufty in a 1983 report into industrial relations at Westrail.^{xi} Certainly these criticisms were not groundless. The issues behind them, along with the raising of the school leaving age and the increase in opportunities in other forms of work, had contributed to the fall off in the number of young people taking up indentures.^{xii} The paper, however, revealed an ideological basis that has become all too familiar in the past decade – an economic rationalist perspective that seeks to break down skills and skill differentials in order to tailor workers to a particular workplace rather than fully skill them for their trade, of which more later.

With regard to the aim of creating a national standard of training, in 1995, the Australian Qualifications Framework (AQF) was established as an integrated national system incorporating all educational and training qualifications from senior secondary school to university. This system offered four levels of certificate, followed by a diploma and an advanced diploma. In 2000, over 275,000 apprentices were training for AQF qualifications, of whom 75 per cent trained to Certificate III level. The AQF

scheme included 6000 school students in 2000,^{xiii} in a return to the practice of recruiting apprentices before they had completed their formal schooling.

The second major change was that, while the apprenticeship system traditionally focussed exclusively upon trade certificate or equivalent qualifications, by the late twentieth century it had been extended to cover all levels of vocational qualifications. While apprenticeships, at the turn of the twentieth century, ranged from a few months to more than three years duration, figures for 2000 showed that 44 per cent of trainees chose the longer apprenticeships, and this percentage was increasing.^{xiv} This trend might not continue, however, if employees were expected to bear the greater portion of their training expenses. This issue will be considered in the concluding section of the paper.

With regard to the recruitment of females into the trades, an Australia-wide study, undertaken in 1987, found that 129,000 apprentices (or 11 per cent) were female; however, when hairdressers were excluded only 3,600 (or 0.3 per cent) were female. Changes to the apprenticeship system in Australia, especially since the 1980s, have resulted in a wide variety of training schemes being made available to young women as well as men in a range of trades and occupations. In 2000, 31 per cent of apprentices were female – thus showing significant growth in a little over a decade.

Although the number of apprenticeships being undertaken in Australia is higher than ever before, major structural differences to the system mean that it is impossible to compare modern training with that of yesteryear in any meaningful way, apart from the end of product, that is, the extent to which these schemes are able to fulfil the demand for fully trained, skilled labour. What is immediately evident is that the traditional, male-dominated, blue collar work culture, where status was determined by the practice of a skilled trade, inherited from the British industrial system in the nineteenth century, has largely been replaced by a broader, more inclusive and less class-based system of vocational training. Whether this is a more efficient method of producing fully trained and skilled trades people is a matter for continuing debate.^{xv} These changes, it could be argued, form part of the dismantling of trade union power that was a feature of Australian industrial relations for much of the twentieth century.

How were changes to the apprenticeship training system manifested in the workplace?

What some of these changes actually meant will be examined in the context of two work places in Western Australia: the Government Railway Workshops at Midland and the East Perth Power Station. The Midland Workshops, sited in an outer suburb of the State capital, Perth, exemplify the extent and complexity of the occupational changes occurring in Australian skilled trades in the period 1945 to 1994, and workers' responses to these changes. For over two thirds of their 90-year existence, the Workshops produced and maintained steam locomotives and rolling stock, with the largest number of workers employed during the 1950s. As it was a closed shop, unions played a significant role in the culture. The Workshops was designed to be a production line for the building and repair of steam locomotives. During the course of an apprenticeship, boys worked their way through the entire processes of their trade and graduated from their indentures fully skilled in their chosen trade, while possessing a working knowledge of related trades.^{xvi} The tradesmen were all trained in the same way in this extremely conservative workplace, where the emphasis was on the amount of time served in apprenticeship and the relationship between tradesman (master) and apprentice.^{xvii}

In contrast to the large numbers of apprentices and variety of trades at the Midland Railway Workshops, the East Perth Power Station (later part of SECWA), which was opened in 1916 to provide Perth's electricity, trained very small numbers in a handful of trades – electrical and mechanical fitters, boilermakers and instrument makers.^{xviii} Yet the same comment was made about the rigour of their training. As at Midland, the apprentices were fully trained in their own trades, and aspects of other trades with which they would work, as well as being given work experience off site. One worker recalled working in other power sub-stations and workshops in the metropolitan area. By the time he had completed his apprenticeship in 1960, he had experience of working at Belmont workshops, 'all the sub-stations in the metropolitan area', and had even spent some time at Northam (a country town). Among the more memorable projects, he recalled wiring up the 'original lights' on the Narrows Bridge over the Swan River, and along the Kwinana Freeway from the Narrows to Canning Bridge.^{xix} The mix of theoretical and practical work was much the same, with Power Station apprentices travelling to Technical College off site one day per fortnight,

while the Midland boys attended classes one half-day per week at the Midland Railway Institute on the Workshops site. By the 1970s, however, SECWA apprentices, including those trained at the East Perth Power Station, were more likely to receive their allotted 720 hours of technical school attendance under a block release system, whereby both metropolitan and country-based apprentices undertook a block of seven weeks' study in each of their first two years and three and a half weeks in their third year.^{xx} This block release system does not appear to have been used at the Workshops, but this was probably because they had a Tech. on site and apprentices were all trained at Midland; they merely undertook (by this time voluntary) country placements to increase their experience. In 1984, the proportion of Tech. College training was increased to 840 hours, but by this time the East Perth Power Station had closed and any remaining apprentices were directed to other parts of the SECWA.

At the Midland Workshops, however, the benefits accrued from a greater emphasis on 'book learning', both prior to and during the apprenticeship, took the form of higher wages and shortened training periods, although the Workshops management was slow to adjust to the new Regulations. Despite the appointment of trade examiners as early as 1963 to stage the change from five to four-year apprenticeships, the WAGR applied to the Arbitration Court only in 1974 to bring the conditions of apprenticeships into line with other industries, as expressed in the 1972 *Regulations*. In June 1974, the maximum term for all WAGR apprenticeships was finally cut from five to four years. Apprentices starting in 1974 would automatically qualify for the shorter period and others could continue to apply to have their terms reduced.^{xxi}

The three decades from 1950 to 1980 had seen massive changes both in the technology of the workplace – at the Midland Workshops, for example, diesels replaced steam locomotives; wooden carriages were superseded by aluminium; tradesmen had to learn to use new materials such as fibreglass – and in the makeup of the 'blue collar' workforce. New technologies made industry so much less labour intensive, and as a result the intakes of trade apprentices in many factories were greatly reduced. While SECWA apprentice numbers rose slowly to around 150 in the mid 1970s, the Midland Workshops experience more accurately paralleled what was happening to 'blue collar' trades in general. The previously-mentioned 1984 paper by Michael Cross revealed extensive changes in the Australian labour market. In the

decade from 1973 to 1983, according to Cross, the manufacturing trades had decreased from 23.9 per cent to 18.1 per cent of the work force, while the blue collar occupations overall had dropped 5 per cent to represent 48 per cent of all employees. In comparison, professional and 'para professional' groups had risen by 40 per cent and represented 7.3 per cent of the total workforce.^{xxii}

Cross' research indicated a decline both in blue collar occupations and in young people taking up indentures. These trends were reflected in declining numbers of tradesmen and apprentices at the Midland Workshops. According to statistics published in WAGR Annual Reports, the Workshops employed 3059 wages staff in 1957, including 398 apprentices. A decade later (1967), Workshops waged staff had been reduced to 2246, including 220 apprentices, although, by 1980, this number had increased to approximately 240. The entire staff, meanwhile, declined from 2034 in 1971 to 949 in 1989, with the figure in 1993, the year before closure, being recorded as 565. As discussed elsewhere,^{xxiii} the Midland Workshops were closed as a direct result of government policies that favoured privatisation of industry and transport. The move away from government-owned large public facilities was Australia-wide and affected other government railway workshops including Eveleigh, Ipswich and Launceston. How the closure of these public sector industries and the taking up of their work by the private sector affected apprenticeship training is the subject of the final part of this paper.

Apprenticeship training – an unaffordable luxury?

Two studies undertaken in the latter 1990s undertook to answer questions about the cost of training apprentices and the effectiveness of the new methods of assessment. In the former study, Dockery *et. al.* studied 59 case studies of Australian firms employing apprentices. Predictably, they found that, while many employers demonstrated 'altruistic motives'^{xxiv} in accepting and training apprentices, thereby incurring a considerable expense to the firm, the outlay on training could be considerably less in larger firms where 'economies of scale' operated, or where an apprentice was trained in work of a 'lower skill content or less variety' or there was a lower level of supervision.^{xxv} These findings are corroborated by John Mossenton, an official with the AMWU, who told the author of this paper that only the largest private firms can offer an apprenticeship training of the scope provided by the

Midland Railway Workshops, SECWA and other large public companies, which also have been dismantled and privatised.^{xxvi} Mossenton believes that few private companies have the incentive to train apprentices, and those who do so prefer to offer training in a narrow range of skills, suited only to their own business, rather than the breadth of knowledge that was acquired in the apprenticeships offered by the Railway Workshops. Consequently, graduates of these training schemes have fewer skills and limited opportunities of obtaining employment in other industries.^{xxvii}

Dockery *et al* also considered the matter of incentive, asking, ‘Why do profit maximising firms continue to provide apprenticeship training? What other benefits do they receive from investing in apprenticeship training and how are these accrued by the firm?’ They were unable to answer this question satisfactorily, but they did suggest that in the future, firms might not be so willing to foot the training bill and might instead ‘push for the public to bear more of the costs of apprenticeship training’.^{xxviii} They also observed that the positive findings of the study regarding the willingness of employers to pay and train apprentices, the lack of support for any reduction in apprentices’ wages, and, in particular, the apparently altruistic motives of employers who trained apprentices and did not retain them in the firm were to some extent biased by the absence of any business which did not train apprentices.^{xxix}

In the future, the cost of training may become the responsibility of the trainee, in much the same way that a university student bears a portion of the cost of his or her university education. If this were taken to the opposite extreme of a ‘full-fee paying’ scenario, perhaps we would see a return to the pre-twentieth century system whereby an apprentice’s parents paid for his or her indentures.^{xxx} At least two possible outcomes might be envisaged. Firstly, we might see a return of the type of worker who was known as an ‘improver’ in late nineteenth and early twentieth century factories – either an apprentice who had completed his or her indentures yet was regarded as not being fully qualified (and hence were not paid skilled wages) until they had gained further experience in the trade, or a person who had ‘picked up’ the trade without formal training. In their recent study of the Harvester Judgement, John Lack and Charles Fahey have demonstrated how ‘improvers’ were often employed in less skilled work, such as making farm

implements. Some of these workers were men aged in the 30s and 40s, who continued to be denied a full wage.^{xxxix} An even less positive outcome might be a return to the conditions of the industrial revolution where ‘factories employed large numbers of young people who did not receive any structured form of training’.^{xxxix} Indeed, to return to Shields’ point, quoted at the beginning of this paper, this is the situation that prevails in the United States of America, especially among female, Hispanic and African American, lower skilled workers. The processes of ‘homogenisation’ and ‘segmentation’ resulted in a narrowing of the difference in wage rates for skilled and unskilled workers, the introduction of new collective bargaining structures negotiated with compliant craft unions and a process of breaking down of the skills of workers, so that any training related essentially to the processes in one company, and resulted in poor employment prospects elsewhere.^{xxxix} In the light of this scenario, the attack on apprenticeships launched by Cross in 1984, discussed earlier, takes on a particularly ominous tone – in particular, the assertion that apprenticeships undergirded the ‘problem’ of skill demarcation – meaning, the difficulty in breaking down distinctions among the skilled trades.

At the conclusion of their study, Dockery, *et al.* commended the proposed New Apprenticeships System (NAS) as it was designed to reduce the cost burden to employers and introduce ‘greater flexibility’ into the training structure.^{xxxix} In 1999, however, Roger May’s doctoral thesis found a number of problems with the ways in which apprentices’ competencies were assessed by the new training schemes. May examined the New Apprenticeship Training and Assessment System (NATAS) and the Module system operating in Western Australia. He concluded that there were discrepancies in both schemes between ‘broad competency standards’ offered in TAFE courses and the ‘specific standards of individual organisations’ and that this variation caused confusion. It was a perception of some managers, at least, that the problem arose partly from the conflicting aims of education and industry. ‘Industry was concerned with the rapid acquisition of skills and knowledge where time equated with money... [whilst] the education culture was [to impart] a broad knowledge base to the student where time involved was less critical’.^{xxxix} May advocated the need for greater consultation between the education provider and the individual employer, and in particular, adequate training for shop floor assessors

who were expected to test the competencies of apprentices to a national standard.^{xxxvi}

A 2001 study by Ceazary Kapuscinski defined apprenticeships as a (normally) four-year, structured form of indentured training, whereby apprentices are taught according to a pre-determined format or plan, are subject to monitoring by their employer, and upon completion become qualified tradespersons in a recognised trade. Traineeships, on the other hand, 'are specialised contracts of training ...[lasting about] 12 months'. They 'combine work and formal training in a mix dependent on [the] trainee's educational attainment and trade competence and allow employers to train people *according to current industry requirements* so that upon completion trainees receive recognised qualifications'.^{xxxvii} According to Kapuscinski, major aspects of the changes in the Australian training system in the decade 1986-97 included the considerable increase in young people commencing traineeships, to a point where they exceeded apprenticeships for the first time in firm-based training. In that period, the percentage of trainees had risen from less than one per cent to 46 per cent of 'total firm-based trainee stocks'.^{xxxviii} This appears slightly contradictory to the previously-mentioned trend of trainees preferring longer apprenticeships.

Perhaps, however, the distinction in the type of training given is more significant. These findings, coupled with others from the National Vocational Education and Training Research and Evaluation Program (NCVER) indicating that, between 2001 and 2005, 'the total [number of] hours of employer-sponsored training has fallen ... by 15 per cent for permanent and 27 per cent for casual employees'^{xxxix} suggest that there have been no significant shifts away from a trend of 'broad general theoretical training' coupled with shortened, specific and limited skills training on the individual factory floor, and a decreased employer contribution to the overall cost. Mossenton's gloomy prognosis, quoted above, appears to confirm this. Indeed, the sterile and short-sighted economic rationalist ideology that undergirds concepts of 'global competitiveness' shows no sign of being reversed, and it would appear that the trades apprenticeship, designed to produce fully skilled trades people with high employment prospects – rather than so many limited-skill workers with limited functions and employment prospects – will soon be a thing of the past.

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- ⁱ Shields, John, 'A Matter of Skill: The Revival of Apprenticeship in Early Twentieth-Century NSW'. *Journal of Industrial Relations*, 37(2), June 1995, p. 236.
- ⁱⁱ For example, Smiths, Wendy and Thorsten Stromback, *The Economics of the Apprenticeship System*, Edward Elgar, Cheltenham, UK, 2001, p. 25.
- ⁱⁱⁱ Memorandum, 'Technical Education of Apprentices in WA', p 1, in Education Department records, SROWA Accession No. AN45/1, 1497, file 75/1926 'Committee of Apprentices'.
- ^{iv} Memorandum, 'Technical Education of Apprentices in WA', p 1,
- ^v Superintendent for Technical Education from Industrial Registrar, Arbitration Court, 13 October 1939, in Arbitration Court files, SROWA AN 195/2, Accession No. 1101, File No. 139/1942 'Technical College trades classes for Apprentices Advisory Committee appointed with connection with ...'
- ^{vi} Western Power files. Staff Administration – Apprentices. Industrial Training Divisions (Department of Labour and Industry), Industrial Training Advisory Boards.
- ^{vii} Court of Arbitration (Western Australia), *Apprentices Syllabus of Training. Western Australian Government Railways (Awards Nos. 5, 6, 7, 13, and 19 of 1937)*, Perth, 1940, p. 3. (SROWA Accession No. 1239, item Box 16/1920).
- ^{viii} Minutes of the Apprenticeship Advisory Committee, Engineering Trades, dated 13 June 1950, in Arbitration Court records, SROWA Accession No. AN195/2. File 49/1042, 'Engineering Trades – Award 35/1936 minutes'.
- ^{ix} NCVER, 'Australian Apprenticeships: Research at a glance', www.ncver.edu.au/research/proj2/mk0008/milestone.htm, accessed 28 November 2003.
- ^x Report by Michael Cross, Executive Director, State Department of Education and Training, dated 12 August 1984, in SROWA Cons 4014, AN251, file 7333/84, Box 613, p. 9.
- ^{xi} Cited in Lyla Elliott, "'Derailed": the closure of the Midland Workshops' in P. Bertola and B. Oliver, eds, *The Workshops, A History of the Midland Government Railway Workshops*, UWA Press, Nedlands, 2006, p. 238.
- ^{xii} The Seventh Annual Report of the Industrial Training Advisory Council to the Minister for Employment and Training in the State Government, dated 30 June 1984, reported a 7 per cent decrease in the number of new indentures in 1982/3, following a 38.9 decrease in 1981/2 to 1982/3. WAGR Papers, SROWA Cons No. 4014, AN 251, file 7333/84.
- ^{xiii} NCVER: 'Australian apprenticeships: Research at a glance'.
- ^{xiv} NCVER, 'Australian Apprenticeships: Research at a glance'.
- ^{xv} See, for example, Smits and Stromback, *The Economics of the Apprenticeship System*, chapter 5, 'The Future of the Apprenticeship System'.
- ^{xvi} Interview with N. Dragicevich, conducted by Sharleen Olsen, 26 April 1902, for the Midland Workshops Oral History Project.
- ^{xvii} See, for example, B. Oliver, '“Transforming labour” at the Westrail Workshops, Midland WA, 19402 to 1990s', in B. Bowden & J. Kellett, eds, *Transforming Labour. Work, Workers, Struggle and Change. Proceedings of the Eighth National Labour History Conference, Brisbane, 3-5 October 2003*, pp. 247-52, in particular, pp. 249-50, which highlights the similarities in training blacksmiths in the early 1950s and in the mid 1970s.
- ^{xviii} In 1976, the total number of the SECWA apprentices (of which those at East Perth Power Station constituted only a small portion) was 153, which compared with approximately 157 apprentices at the Midland Workshops in 1976, but just over a decade earlier (in 1963) the Workshops had 345 apprentices (figures drawn from *WAGR Annual Reports*). SECWA figures from Apprentice Review of 1976, Internal Memo from Education Officer to Manager of Personnel, SECWA, File 16/35/7 Staff Administration – Apprentices – Industrial Training Divisions, in Western Power Archives, used with permission.
- ^{xix} Barry Goldman, interviewed by Denise Pringle, 4 October 2006, interview transcript, p. 6.
- ^{xx} File 16/35/7 Staff Administration – Apprentices – Industrial Training Division, in Western Power Archives.
- ^{xxi} Minute A.E. Williams, Secretary of Railways to CME, et.al, 24 June 1974, in *ibid*.

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- ^{xxii} Report by Michael Cross, Executive Director, State Department of Education and Training, dated 12 August 1984, in SROWA Cons 4014, AN251, file 7333/84, Box 613,
- ^{xxiii} See, in particular, Elliott, "'Derailed": the closure of the Midland Workshops' in Bertola and Oliver, *The Workshops*, pp. 235-258.
- ^{xxiv} Dockery, A.M., P. Koshy, T. Stromback and W. Ying, 'The Cost of Training Apprentices in Australian Firms', *Australian Bulletin of Labour*, vol. 23, no. 4, December 1997, pp. 255-74. Dockery, *et al.* point out (p. 267) that firms which preferred to train their own personnel and, in particular, those who trained apprentices with the expectation that they would not be retained in the firm at the end of their indentures but should gain a wider range of experiences elsewhere, 'confirm[ed] evidence of altruistic motives by some employers in the provision of apprentice training'.
- ^{xxv} *Ibid.*, p. 265.
- ^{xxvi} SECWA subsequently became Western Power. In 2006, Western Power was split into four 'specialist firms', only one of which retained the Western Power name and remained in State Government ownership. <http://www.sciencewanet.au/> accessed 1 March 2007. The Government Railway Workshops closed in 1994, with most of their functions going to private firms with branches in WA (for example, A. Goninan & Co), or based in the Eastern States. See Elliott, 'Derailed', pp. 249-50.
- ^{xxvii} John Mossenton, AMWU official, telephone conversation with the author, 13 June 2006.
- ^{xxviii} Dockery, *et al.*, p. 270.
- ^{xxix} *Ibid.*, p. 269.
- ^{xxx} See, for example, Bray, R.A., *Boy Labour and Apprenticeship*, originally published by Constable & Co., London, 1911, republished by Garland Publishing Inc., New York and London, 1980, pp. 5 ff.
- ^{xxxi} John Lack and Charles Fahey, 'Harvester men and women: The Making of the Harvester Decision' in Julie Kimber and Peter Love (eds.), *The Time of Their Lives: the Eight Hour Day and Working Life*, Sydney, Australian Society for the Study of Labour History, forthcoming, 2007, quoted with the kind permission of the authors.
- ^{xxxii} Smits, W. & Thorsen Stromback, *The Economics of the Apprenticeship System*, Edward Elgar, Cheltenham, UK, 2001, p. 18.
- ^{xxxiii} Gordon, D.M., R. Edwards & M. Reich, *Segmented Work, divided workers. The historical transformation of labor in the United States*, Cambridge University Press, 1982, pp. 228-36.
- ^{xxxiv} Dockery, *et. al.* 'The Cost of Training Apprentices', pp. 270-1.
- ^{xxxv} May, R.N., 'An Exposition of the Apprentice Assessment Systems in Western Australia', Ph. D. Thesis, Curtin University, 1999, p. 268.
- ^{xxxvi} *Ibid.*, pp. 252 ff.
- ^{xxxvii} Kapuscinski, C.A., *Apprentices & Trainees 1968-1999: Apprentices and traineeships in Australia in the last three decades: an empirical overview of the evidence*, Department of Education, Training and Youth Affairs, Canberra, 2001, p. 3, emphasis mine.
- ^{xxxviii} *Ibid.*, p. 7.
- ^{xxxix} Richardson, Sue & Peng Liu, 'Changing forms of employment and their implications for the development of skills, NCVET overview 3.1, <http://www.ncver.edu.au/publications/1721.html> accessed 5 March 2007.