

ERIK OLSSSEN AND JEREMY BRECHER

## THE POWER OF SHOP CULTURE

THE LABOUR PROCESS IN THE NEW ZEALAND RAILWAY  
WORKSHOPS, 1890–1930

**SUMMARY:** This paper investigates the history of the labour process in New Zealand's state-owned railway workshops and questions the idea that large-scale industry inevitably destroyed whatever agency skilled workers had enjoyed. It also shows that relations of production vary with the political and cultural contexts. Craft control of the labour process survived in New Zealand's state-owned railway workshops and the union played only a minor role. Job control was more important in achieving bureaucratic instead of autocratic control over such matters as hiring and firing; the retention of apprentice-based crafts; the institutionalization of seniority; and in resisting both de-skilling and the "premium bonus". The strength and vitality of shop culture, based on craft control of the labour process, also survived and modified the Government's vigorous attempt to introduce "scientific management". In brief the article concludes that productive processes do not inevitably determine social relations of production, that capitalism has been neither homogeneous nor uniform, and that mechanization never inevitably results in de-skilling.

In recent years historians in various countries have devoted considerable attention to the development of the labour process and the organization of work. These studies have aimed to explore the relation between social structure and the material production process and to ascertain the extent to which workers enjoyed agency in determining how work was done. Some of the empirical studies appeared to point in contradictory directions but a consensus has emerged among labour historians which suggests that the development of large-scale industry destroyed whatever agency the workers had enjoyed. The study of labour process, in short, has increasingly ended in pessimism about the capacity of workers to shape the labour contract on the job and has ignored the possibility that "relations of production will differ markedly from one political and cultural context to the next."<sup>1</sup> Railway Workshops, where locomotives, cars and wagons are

<sup>1</sup> The quotation is from William Lazonick, *Competitive Advantage on the Shop Floor* (Cambridge, Mass., 1990), p. 75. Harry Braverman, *Labor and Monopoly Capitalism: The Degradation of Work in the Twentieth Century* (New York and London, 1974) is widely considered the seminal work in the study of labour process. For more recent studies see Richard Edwards, *Contested Terrain: the transformation of the workplace in*

built and repaired, constitute an important cultural context in their own right. They also form an interesting case in the development of industrial work relations because they represent both a part of the factory system and of the railway system, two of the central elements of the industrial revolution that developed in Britain and spread throughout the world in the nineteenth century. New Zealand, too, a small and colonial economy, represents a distinctive political context. The New Zealand workshops, in brief, provide a unique perspective on debates about the labour process.

New Zealand's railway workshops developed rather differently from those of Britain and of other societies, like the United States, that were British in origin and continued to import British technology. In the late nineteenth century, New Zealand railway workshops developed methods for organizing the labour process that were unique at the time and embodied many of the objectives that workers in other industrializing countries demanded during the first half of the twentieth century. The railway workshops in New Zealand early abandoned the British workshop organization based on autonomous foremen. The skilled workers of New Zealand's railway workshops also retained and even strengthened the central role of apprenticeship-based skilled labour and resisted de-skilling. The general-purpose union to which the men of the workshops belonged, The Amalgamated Society of Railway Servants (ASRS), was not always sympathetic and the men had no union of their own until the end of the period studied. Workshop control rather than union strength, together with responsive cultural and political systems, allowed the men of the workshops a greater degree of influence than their counterparts in Britain or the United States. As a result they successfully resisted the introduction of the American system of "scientific management", which concentrated all knowledge and control of production in the hands of management, and evolved towards a system strikingly similar in certain respects to that now associated with Japanese capitalism. This paper, focussing primarily on the New Zealand railway workshops in comparative perspective, explores the relationship between one country's political and cultural context and the development of the relations of production in one industry.<sup>2</sup>

*the twentieth century* (London, 1979); Andrew Zimbalist (ed.), *Case Studies on the Labor Process* (New York, 1979); Charles More, *Skill and the English Working Class, 1870–1914* (London, 1980); Craig Littler, *Development of the Labor Process in Capitalist Societies* (London 1982); Roger Penn, *Skilled Workers in the British Class Structure* (London, 1985); and Paul Edwards, *Conflict at Work: a materialist interpretation of workplace relations* (Oxford, 1986).

<sup>2</sup> For international comparison we have relied on Peter Kingsford, *Victorian Railwaymen: The Emergence and Growth of Railway Labour, 1830–1870* (London, 1970); Frank McKenna, *The Railway Workers 1840–1970* (London, 1980); Dan Mater, 'The Railroad Seniority System: History, Description and Evaluation' (Ph.D., University of Chicago, 1942); and Walter Licht, *Working for the Railroad: The Organization of Work*

### 1. *The political context*

At a time when private capital controlled British and American railways New Zealand developed a state-owned railway system. In the 1870s and 1880s the system came to be seen as a vehicle for supporting the economic development of the colony. During the 1890s the Liberal Government believed that the agricultural sector, and especially the dairying and frozen-meat industries, were central to economic growth and the country's progress. Joseph Ward, the Minister of Railways from 1900 until he became Prime Minister in 1906, stressed:

The policy of the Government has been throughout to regard the railways as adjuncts to the settlement of the country, and to look upon the earning of a large profit as of minor importance compared with the incalculable benefits that accrue to the State by giving the settlers a convenient and cheap means of transporting the produce of their farms to the markets [ . . .].<sup>3</sup>

Critics had begun to insist on the importance of profitability, and the Government moved to placate them, but considerations of profit and loss were less important than the system's service role.<sup>4</sup>

The Hillside Railway Workshop was opened under the authority of the Railway Department in 1875 to repair locomotives, cars, and wagons. In the beginning it consisted of one blacksmith and his striker. By 1905 Hillside was New Zealand's second largest engineering shop, employing 400 men.<sup>5</sup> The workshops were organized – as in Britain and North America – into a series of departments based on skill. A visitor at Hillside in 1900 would probably have started in the machine shop, where the turners still operated the centre lathes and did much of the finishing work. Next door was the blacksmith's shop where the smiths worked on the forges, hammer-

*in the Nineteenth Century* (Princeton, 1982). None of these works focussed on the workshops, however, which were largely organized by the Amalgamated Society of Engineers in Britain and twelve shop-craft unions in the United States and Canada; for these we largely used James B. Jeffrey, *The Story of the Engineers, 1800–1945* (Letchworth, [1945]) and Mark Perlman, *The Machinists: A New Study in American Trade Unionism* (Cambridge, Mass., 1961). For a good description of the metal trades see Sidney and Beatrice Webb, *Industrial Democracy* (London, 1902), pp. 107–109.

<sup>3</sup> *Appendices to the Journals of the House of Representatives* (hereafter *AJHR*), 1905, D-2, p. ix. While this statement is probably meant to refer only to the period of direct ministerial control that began in 1895, railways had been seen as “adjuncts to the settlement of the country” from their origin.

<sup>4</sup> By 1908, the Department claimed to be earning three and a half per cent per annum on capital invested; see *New Zealand Official Year Book* (Wellington, 1908), pp. 460–463.

<sup>5</sup> Basic information about Hillside is assembled in “Hillside Railway Workshops: Items of Interest to Visitors” (New Zealand Government Railways, 1962). We have also used an excellent history paper by Lucy Duncan, “Hillside Railway Workshops 1875–1920” (University of Otago, 1982).

ing the metal into its rough shape (usually, until engines were made at Hillside, broken or badly worn parts). The rough product – like castings from the foundry – went then to the machine shop. The boilermakers repaired and made boilers, essential to any steam engine, and had their own shop. They worked with metal thicker than 1/8 inch – the tinsmiths handling lighter metal – and were skilled at cutting, shaping, and riveting. Then came the fitter. The fitter worked in the erecting shop and assembled the locomotives and carriages. Given the inexact nature of production the fitters' skill was essential and wide-ranging. Each skilled metal worker also had a labourer to assist him. Indeed the blacksmith and his assistant had to work so closely together that the assistant knew almost as much about the craft as the blacksmith. In all the metal trades the unskilled assistants were often proficient at the simpler tasks. In each shop there were also apprentices.<sup>6</sup>

The men in the workshops belonged to the ASRS because, when a group of engine drivers formed the union in 1886, they claimed jurisdiction over workshops' employees on the mistaken grounds that this was the situation in Britain. In November 1889, when the new Railway commissioners tried to eliminate pension and retirement allowances, the ASRS opposed. Membership grew from 94 to 3, 183 in three months. The Commissioners gave in but the maritime strike, in 1890, allowed them to defeat the ASRS. Yet railway workers, including the men in the workshops, obtained considerable political influence in the 1890 election. Twelve Liberal MPs attended the union's 1892 Conference and joined with the ASRS in opposing the Commissioners' plan to impose compulsory insurance. Richard Seddon, the Minister of Public Works, stated that "so long as the Railway Commissioners maintain their present hostile attitude toward unionism, so long will their employees have ground for complaint".<sup>7</sup>

Seddon was a fitter by trade and had worked as a fitter for many years. By 1892 he already enjoyed considerable fame for having introduced co-operative contracting into the public works, a system which allowed workers to choose who they worked with, select (and remove) their foremen, and decide collectively how to distribute pay. An increasingly cozy relationship developed between the Government and the ASRS, now the largest union in New Zealand, but the commissioners remained unconscious of their vulnerability.<sup>8</sup> Seddon's willingness to help the ASRS increased with

<sup>6</sup> In all countries workshops were organized in the same way; see Jeffreys, *Story of the Engineers*, p. 57; interview with Jim Addison, 24 April 1987; and the evidence and reports of two investigations, both discussed later.

<sup>7</sup> J.D. Henning, "Government Railwaymen and Industrial Relations: 1884–1894" (M.A. thesis, University of Auckland, 1984), ch. 1–3 and p. 83 for the quotation from *New Zealand Parliamentary Debates* (hereafter *PD*), 78 (1892), p. 436.

<sup>8</sup> R.M. Burdon, *King Dick: a biography of Richard John Seddon* (Christchurch, 1955), pp. 2–5.

his ambition to succeed John Ballance, who died in 1893, as Prime Minister. Blocked by cabinet, Seddon set out to marshal support and turned his vague sympathy for the railway workers into specific measures. First, he appointed two new commissioners, both willing to recognize the ASRS. Once secure as Prime Minister, Seddon consolidated his alliance with the railway workers by abolishing the unpopular commissioners and creating a new department to administer the railways under Ministerial control. Seddon appointed one of the new Commissioners, T. Ronayne, who had served his apprenticeship in the system, as General Manager.<sup>9</sup> In 1894 Seddon also established a Board of Appeals for all railway employees, long a demand of the ASRS, which allowed the men to limit the power of foremen and supervisors.<sup>10</sup>

The institution of a new system of classification for all railway employees constituted the most significant Liberal reform. The Classification Act (1896) divided the workshop employees into two Divisions, white collar (Division I) and blue collar (Division II). The Second Division was also divided into three categories – Traffic, Locomotive (workshops), and Maintenance – and the workers were then further sub-divided into permanent and casual staff.<sup>11</sup> The Classification Act specified the various trades within the workshops and by implication defined the work that each would do. Fitters, turners, boilermakers and blacksmiths, listed in that order, received statutory recognition. The Act froze trades as they were in the mid-1890s, on the eve of the second industrial revolution, and made craft jurisdiction integral to the management of the system. It also made seniority integral by providing a series of steps, linked to pay rates specified in the Act, between improvers and leading tradesmen.<sup>12</sup> Skilled labourers – strikers, holders-up, machinists, helpers – were second-class citizens. One disgruntled correspondent complained to the union's journal, *Railway Review*, that even "a machinist, no matter how smart he is, cannot rise to be an improver [. . .]". The union and its journal had little sympathy although both attacked the barrier erected between the two divisions. At the bottom

<sup>9</sup> *Railway Review* (hereafter *RR*), 9 Jan. 1909, p. 10 and 7 May 1909, p. 134.

<sup>10</sup> There was one Appeal Board for each island, consisting of a judge and two elected assessors, one from each Division; "Government Railways Act", *The Statutes of New Zealand* (Wellington, 1894), pp. 165–170; and "Government Railways Classification Act", *ibid.* (1896), pp. 114–127.

<sup>11</sup> See R.J. Polashek, *Government Administration in New Zealand* (Wellington and London, 1958), pp. 101–105. By 1910 this system had become extraordinarily complex with "temporary casuals", "emergency casuals", "hour-to-hour casuals", and "probationers" for each category; *RR*, 21 Oct. 1910, p. 456.

<sup>12</sup> "Government Railways Classification Act", *The Statutes of New Zealand* (1896), pp. 114–127. The new system appears to have systematized and bureaucratized the procedures that had emerged in the privately-owned British railway companies; Kingsford, *Victorian Railwaymen*, ch. 8.

of the ladder came the unskilled labourers, many of whom took a wage cut. At the end of 1897, when the Department released its decision on the classification of every worker in the service, the skilled men of the workshops complained bitterly that so many had been placed at the lower and lower-paid end of the scale.<sup>13</sup>

Before the Classification Act of 1896 hiring, promotion, discipline and dismissal had been in the hands of local officials and foremen. Their arbitrary actions were a major grievance for railway employees, as was the case in all English-speaking countries. According to Ronayne, officers in charge of districts, workshops and large stations were allowed to fill any vacancies that occurred on their staffs. "Some officers went to the extreme and inflicted severe penalties, which, in many cases, were not justifiable and were out of all proportion to the offence committed. Others again took an extremely lenient view, and passed over in the lightest manner grave breaches of the regulations [ . . . ]."<sup>14</sup> Liberal Ministers often defended the new system as a response to "the great anxiety evinced by the Civil servants of the colony to be classified, or, in other words, to be put in such a position that any one [ . . . ] may look forward to reaping some reward for his energy, ability, and integrity by promotion as a right, and not as a favor at the sweet will of a superior officer, an Under-Secretary, a Minister, or a Government"<sup>15</sup> Railway workers wanted to end favouritism and insecurity by instituting a system which would remove arbitrary power from supervisors and base decisions about hiring, promotion, and dismissal primarily on seniority. This coincided with the Department's concern to establish uniformity.<sup>16</sup> In the United States, ironically, the foreman's power also came under attack in this period but not from workers so much as employers and engineers who had identified the autonomous foreman as an obstacle to translating investments in new technologies into higher productivity.<sup>17</sup>

The Government not only introduced classification in response to employee pressure, but consulted extensively with the union – certainly a rarity for any government in the world in the 1890s. In introducing the

<sup>13</sup> *RR*, Nov. 1897, p. 252 and Feb. 1898, p. 35.

<sup>14</sup> Evidence from an inquiry into allegations of "systematic loafing" at the Addington Railway Workshops; *AJHR*, 1909, Session II, D-4a, p. 45 [hereafter "Addington Railway Workshops"]. This was also the situation in Britain and North America; see Kingsford, *Victorian Railwaymen*, pp. 113–118, 254–255, 263–264.

<sup>15</sup> *PD*, 96 (1896), p. 570, Cadman.

<sup>16</sup> *Ibid.* (1896), pp. 647–648, Cadman. Until 1906 the General Manager's office dealt with all cases but the burden of work then forced him to devolve responsibility to specialist boards; *RR*, 7 May 1909, p. 134. Railway workers in Britain and North America also demanded classification and seniority; see Kingsford, *Victorian Railwaymen*, ch. 8; and Licht, *Working for the Railroad*, pp. 131, 212.

<sup>17</sup> Craig Littler, "Understanding Taylorism", *British Journal of Sociology*, XXIX (1978), pp. 185–202.

Classification Bill in 1896, the Minister of Railways, A.J. Cadman, told the House that he “arranged with the executive of the society [ASRS] to consider this Bill, and they were here in Wellington for five or six days. I met them in nearly every direction, and made concessions and alterations in the Bill long before it was brought before honourable members at all.”<sup>18</sup> Given the ASRS’s weakness at this time the Government’s sensitivity underlines the central importance of the political and cultural context.

The ASRS had more influence on Government than it did in the workshops. The skilled men in the workshops were not represented on the executive and the final measure did not embody traditional craft goals. For instance, it established several different pay grades within each craft, thus violating the craft-union goal of one rate for all skilled men. A meeting of tradesmen at the Addington workshops in Christchurch protested the rates because skilled men on the lower end of the scale would be paid less than skilled men in the private sector. “Plain Bill” Earnshaw, the MP for South Dunedin, one of two electorates in which all Hillside workers lived, raised the same point. The graduated pay scales did not upset most workshops’ employees, however. First, the graduated pay scale within each craft allowed for regular increments based on length of experience and linked promotion to seniority. Seniority, in turn, acknowledged that the men had a form of property-right in their jobs, an appreciating asset (which reflected the view that a workman’s labour was his capital). The leader of the Opposition in Parliament, articulating their complaints, did not mention the standard rate but objected particularly to the creation of a grade of “improvers”. “Why young men who have served their apprenticeship should be kept for years at a lower rate of pay than the minimum, however expert they may be, I cannot understand.”<sup>19</sup> The “improver”, thus, was an apprentice out of his time. In practice the Department hired five-year apprentices at the minimum rate for tradesmen and took on all three-year apprentices as improvers.<sup>20</sup> In Canada and the United States “improvers” usually had not served apprenticeships but had graduated from the ranks of the unskilled; in New Zealand workshops, by contrast, the improver had to

<sup>18</sup> *PD*, 96 (1896), pp. 647–648.

<sup>19</sup> *Ibid.* (1896), p. 646. Captain Russell. One of the Lib-Lab Members reported on the meeting; *PD*, *ibid.*, pp. 592–593. For Earnshaw, *ibid.*, pp. 639–642. A grade of “journeymen”, paid below normal tradesman’s rates, still existed in the early 1940s but was eliminated with the growth of union strength, according to an interview with Lionel Jones, a former Hillside apprentice.

<sup>20</sup> Ronayne to Chief Locomotive Engineer, 26 Sept. 1896, R-3, 14/5281, Railways Department Mss, National Archives [hereafter RDM/NA]. By 1913 all apprentices graduated to the bottom of the scale for tradesmen classified grade 2 and were kept there for two years. Ronayne reported, “They are really Improvers.” See “Extract from [Ronayne’s] Report [. . .]”, 10 July 1913, R-3, 12/1505/1, RDM/NA.



have served an apprenticeship.<sup>21</sup> Although “dilution” was not a problem for the metal trades in 1896, it soon would be; yet classification translated the trades, and apprenticeship as the only means of entry, into law.<sup>22</sup>

It seems that most skilled workshops’ men were happy to swap the standard rate of pay for classification and seniority. Only through seniority could men become eligible for promotion to the supervisory positions of “leading hand” and foreman. The new system could also be justified in terms of Fabian socialist ideology – as W.P. Reeves showed – and this may have carried more weight than traditional craft goals with skilled craftsmen who believed that the Liberals were creating the most just and progressive society in the world. An equally impressive consensus existed in 1901 when the Government, again after long discussions with the ASRS, provided superannuation for all permanent employees of the Railways Department. Job security, regular employment, seniority and security in old age were more important to railway workers than traditional craft objectives.<sup>23</sup>

## 2. *Shop culture and authority*

The Government’s commitment to maintain this skilled workforce by providing regular employment helped ensure the stability of the workforce and the strength of shop-floor culture.<sup>24</sup> Centralization also contributed to the vigour of shop-floor culture and reduced the importance of customary authority relations in each workshop. For instance, hiring within the Railways became a highly centralized process under the Classification Act. The head office in Wellington kept a list of those who had applied for employment and were judged eligible. The local workshop superintendent report-

<sup>21</sup> This seems to have been similar to the situation in England; see More, *Skill and the English Working Class*, pp. 141–142.

<sup>22</sup> The newly-created Arbitration Court began to do this in the private sector; see Victor Clark, *The Labour Movement in Australasia: A Study in Social Democracy* (London, 1907); Sidney and Beatrice Webb, “Introduction to 1902 Edition”, *Industrial Democracy* (New York, 1965), pp. xliii–iv; and Erik Olssen and Judi Boyd, “The Skilled Workers: Journeyman and Masters in Caversham, 1880–1914”, *New Zealand Journal of History*, 22 (1988), pp. 118–134.

<sup>23</sup> By 1880 the larger British companies either had created or subsidized various pension and superannuation schemes for senior employees. The first American railroad unions, like the Amalgamated Society of Railway Servants in Britain, put great stress on their insurance schemes; see Kingsford, *Victorian Railwaymen*, ch. 7, 9 and 10; and Licht, *Working for the Railroad*, pp. 212–213. American companies followed suit after the violent railway strike of 1877; Licht, *Working for the Railroad*, p. 263.

<sup>24</sup> It is not clear when this policy was adopted but it was unquestioned by early this century; see *AJHR*, 1905, D-2, p. ix. American and British companies had also adopted similar policies at least a generation earlier; Licht, *Working for the Railroad*, pp. 169–172; and Kingsford, *Victorian Railwaymen* pp. 148–149.



ed a vacancy and the central office supplied a list of applicants whom he was expected to approach in order. Only if none were suitable could he hire at his own discretion. Political influence could short-circuit this system but only on behalf of men qualified for the available job. In the debate on the Classification Bill, however, Cadman admitted that the Railways often had "to take on [. . .] men who would not be taken on by private firms". Arthur Morrison, the member for Caversham (where many Hillside men lived), also acknowledged "the pressure that is brought to bear on us to find billets for tradesmen".<sup>25</sup> After some time those hired were evaluated by superiors and recommended for retention or dismissal (although it was customary to receive a warning before dismissal). Those retained usually remained "casuals" but if less than 34 years old could become members of the permanent staff (which meant that they belonged to the superannuation scheme and accumulated seniority).<sup>26</sup>

Apprenticeship was the usual route into the permanent staff. Management recruited apprentices depending upon the Department's assessment of over-all labour requirements. They also had to be indentured in their 15th year, so that they would be out of their time by the age of 21 years old, and had to have passed Standard 4.<sup>27</sup> Apprentices served a brief probationary period, which had been instituted to allow them to change to a different trade. Apprenticeship usually took five years or slightly more. When he came out of his time an apprentice was reviewed. If declared a first-class workman he received the minimum rate of pay for a journeyman (9s 6d per day in 1909), and had to join the permanent staff. The Department counted the years of apprenticeship as part of their service both for superannuation and seniority. Second-class workmen could be taken on as casuals, which denied them superannuation and meant that seniority started from that point rather than the commencement of their apprenticeship. If not proficient they were dismissed.<sup>28</sup>

<sup>25</sup> *PD*, 96 (1896), p. 643.

<sup>26</sup> "Addington Railway Workshops", pp. 45–50, for Ronayne's testimony. It was apparently generally accepted that railway jobs could be distributed as patronage. The papers of T.K. Sidey, the Liberal Member of Parliament for the electorate which contained Hillside, contain many requests from constituents and friends for his help in obtaining promotions, jobs or apprenticeships for their sons; see for example, E. Willis to Sidey, 21 Jan. 1907; J. Caldwell to Sidey, 27 August 1908; J.S. Burnett to Sidey, n.d. (Mss 605/13), Hocken Library, University of Otago, Dunedin.

<sup>27</sup> Ronayne to Chief Locomotive Engineer, 26 Sept. 1896; and Minister of Railways to Director Christchurch Technical School, 14 Sept. 1915, R-3, 12/1505/1, RDM/NA.

<sup>28</sup> Government inquiry into the Addington Railway Workshops revealed a lot about the labour process; see *AJHR*, 1909, D-4A, p. 48 and D-4 for the report. For a fuller discussion see Erik Olssen, "The Railway Workers and Scientific Management", in John E. Martin and Kerry Taylor (eds), *Culture and the Labour Movement: Essays in New Zealand Labour History* (Palmerston North, 1991), pp. 128–141.

Hillside took on apprentices in 16 skilled trades. Some of these trades were connected to the foundry and the moulding shop, which the local members of Parliament kept demanding until it was built in 1903 so that locomotives could be made in Dunedin. The great majority, however, were fitters, turners, boilermakers, and blacksmiths. Tinsmiths and copper-smiths were less numerous. Unlike the unskilled “helpers”, the apprentices did not work under the supervision of a tradesman but were directly responsible to the foreman. He assigned them the simplest craft tasks first and then brought them on to the more complex work. Fitters, of course, received training in turning and boilermaking as well as their own trade. Apprenticeship was an intense introduction not just to the culture of the craft but to the larger workshop culture. Apprentices spent their working days in their own shop, although they might mix more outside working hours and boys who did their time together often became close friends.<sup>29</sup> They were also apprentice patternmakers, carpenters and painters.

The Classification system undoubtedly had the potential to fracture the cohesion of shop culture. Promotion from second-class to first-class tradesmen caused most problems. A committee from head office dealt with each application but the foreman or leading hand played a major role and continued to do so if the disgruntled second-class tradesman took his case to the Appeal Board. The papers of T.K. Sidey, who succeeded Morrison as member for Caversham in 1901, contain occasional letters of complaint about the foreman.<sup>30</sup> As a rule disgruntled casuals blamed Head Office or the Appeal Board, and *Railway Review* encouraged this tendency. Most disputes over promotion arose, however, from the tension between two criteria for promotion: seniority and competence. As one Minister of Railways put it:

On the one hand, I find some of the most promising and energetic members urging their claims to promotion and increased pay on the ground of superior ability and skill; on the other hand, members with longer service, but with less pronounced originality, contending for an equal share of promotion or increased pay. Whilst securing equal opportunities for promotion to all members, it is a question for future consideration whether merit and ability are adequately rewarded under such a system, and whether in the process of time the public

<sup>29</sup> Interviews with W.M. Pimley, Lionel Jones, Robert Rutherford, David Fenby and Jim Addison. Pimley did his apprenticeship as a fitter at Addington and started at Hillside in 1915, he was interviewed 30 March 1987; Jones, who worked as a fitter at Hillside in the 1940s and 1950s, was interviewed 13 March 1987; Rutherford began his apprenticeship as a boilermaker at Hillside in 1915, he was interviewed 14 April 1987; Fenby, who began his apprenticeship as a fitter at Hillside in 1924, was interviewed 13 April 1987; and Addison, head of the Welfare Department at the Hillside Workshops, was interviewed 24 April 1987 (he had served his apprenticeship as a boilermaker at Hillside in the 1940s).

<sup>30</sup> See James Riley to Sidey, 9 July 1916, Sidey Mss, Hocken Library.

railway service may not suffer in the event of such qualities not receiving sufficient stimulation.<sup>31</sup>

Many able skilled men, passed over because they lacked seniority, doubtless agreed. The most frustrated probably resigned, leaving behind those who prized security above opportunity and reinforcing the cohesion of shop culture.<sup>32</sup>

In 1898 the Government consulted the ASRS and the Railway Officers' Institute in an effort to solve the problem but agreement proved to be unattainable. In 1900 the Government issued its own regulations, but seniority remained the key to promotion unless there was clear evidence of incompetence. Thus for many workers at Hillside their jobs were lifelong commitments. Lucy Duncan found that the average length of service of Hillside employees was 15 years in 1900 and 18 years and four months in 1920.<sup>33</sup> If they were, on average, halfway through their working lives at this point, on retirement the average Hillside worker would have worked for the Railway between 30 and 36 years. Nor was there any variation between casual and permanent men. The prospect of steady and regular work clearly appealed to many, as it did in Britain and North America where the workshops' employees fought to obtain seniority.<sup>34</sup> Although skilled metal workers could often command a higher hourly rate outside the workshops, no other industry offered regular employment throughout the year.

Dismissals and layoffs were unusual. The easiest group to layoff were the apprentices just out of their time (which had the additional advantage that they were not union members). Otherwise the Workshop Manager could not layoff staff without express permission from Wellington.<sup>35</sup> If head office approved, however, the mores of the working class determined that single men had to be laid off first. It might be thought that casuals would be most vulnerable, but there is no evidence of that. According to some interviews, even in cases of known incompetence, dismissals were unusual. Only one man recalled a dismissal for incompetence and added that the foreman was renowned for meanness.<sup>36</sup> Incompetence was never total, however, so that jobs could be found for less capable tradesmen. One ex-foreman looked shocked at the idea that incompetence might bring dismissal. Of course, in

<sup>31</sup> Railway Statement, *AJHR*, 1898, D-2, p. ii.

<sup>32</sup> Some evidence suggests that able young men disliked seniority and preferred promotion to be based on merit alone; see *RR*, April 1908, pp. 6–7.

<sup>33</sup> Duncan, "Hillside Railway Workshops", p. 17 and Table F, p. 18.

<sup>34</sup> It is not known when the principle was conceded in Britain, although the National Union of Railwaymen were still demanding it in 1911, but in the United States the shop crafts obtained it only during the first World War and had to struggle to retain it; see Mater, "Railroad Seniority".

<sup>35</sup> "Addington Railway Workshops", p. 12.

<sup>36</sup> Interviews with Fenby, Jones and Rutherford.

the workshops most of the so-called “unskilled” were skilled “helpers” of one sort or another. Even the dismissal of a permanent labourer for incompetence was time-consuming and complex. In the case of Robert Millar at Hillside, for instance, the Workshops’ Manager, several foremen, and two labourers gave evidence for the Department while Millar called nine witnesses of his own, all skilled.<sup>37</sup> As a rule, the skilled men believed, incompetence was to be found among the casuals on the maintenance and way staff.

The policy of spreading work evenly also contributed to shop-floor solidarity. During the last years of the “Long Depression”, for instance, the men at Hillside worked on average 41 to 44 hours a week.<sup>38</sup> After 1895, of course, prosperity returned and the workshops expanded. During “rush” periods management often insisted that the men work overtime and it was calculated on the weekly rather than the daily hours. Hence a man might work through the night but earn no overtime if he received an equivalent period off. This “caused a great deal of dissatisfaction among the men [ . . . ]”.<sup>39</sup> The source of this problem was the priority given to repairs in the summer months, when repair work peaked, on top of a construction programme designed to keep the men fully employed in the slack winter months. The men, the leading hands and the foremen disliked shift work, however, and may have tried to regulate the speed of their winter work in order to reduce the summer “rush”. Certainty is impossible on this issue, but individual workers and apprentices kept their own time books, which left them considerable discretion in pacing their work.<sup>40</sup>

The pattern of recruiting all management personnel from the shop floor further strengthened the solidarity of shop culture. Under the authority of the Locomotive Engineer, based in Wellington, there was a Workshop Manager. At Hillside, until the 1980s, he was always an ex-fitter who had been promoted up through the ranks. Under him there were foremen in charge of each branch, also promoted from the shop floor: a foreman blacksmith, foreman boilermaker, foreman carpenter, foreman fitter, and the like. Under these foremen were leading hands.<sup>41</sup> Foremen, supervising an entire department, typically spent about three hours a day in their offices doing paperwork and did not provide close supervision of workers. Nor did they think they needed to provide close supervision for the skilled workers had an unrivalled knowledge of the production process and had long

<sup>37</sup> *RR*, 30 July 1909, pp. 236–237.

<sup>38</sup> Duncan, “Hillside Railway Workshops”, p. 10.

<sup>39</sup> *RR*, 15 Dec. 1911, p. 593.

<sup>40</sup> *RR*, 5 Feb. 1909, pp. 34–35, 38; 2 April 1909, pp. 99–100, 104; and 7 May 1909, p. 134. See Olssen, “Railway Workers and Scientific Management”.

<sup>41</sup> “Addington Railway Workshops”, p. 13.

organized the work.<sup>42</sup> Foremen left the ASRS for the Officers' Institute on promotion and, as far as we can tell, did not mix socially with the men. But the bonding that occurred during apprenticeship and in between 25 and 30 years on the shop floor did not cease with promotion; recruiting men from the shop floor meant that supervisory personnel had been socialized into the customs of the craft. The Department placed no pressure on them to become instruments of management and the difficulty of obtaining promotion from Division II to Division I meant that few skilled men ever joined management.<sup>43</sup> Shop culture, powerful even in the United States, was almost unchallenged in New Zealand.<sup>44</sup>

This is not to say that the foremen and the Workshop Manager did not expect the men to do their work, or that they had no disciplinary powers. Their power was limited, however, by seniority, classification, and the bureaucratic system for handling everything from promotion to discipline. They could neither hire nor fire. A board from head office, including local supervisory personnel, annually assessed each worker's claim to a pay increase or promotion. The results were published annually in the D-3 list. Workers dissatisfied with this decision, or with demotions, wage cuts, and dismissals, had the right to appeal. The union's journal, *Railway Review*, provided full and critical reports of Appeal Board decisions. Although impotent by comparison with his counterparts in other countries, the foremen could insist that men worked overtime, monitor their time of arrival and departure, and police such regulations as the ban on smoking in the shops (rescinded in 1923). They could also suspend men and fine them small amounts, subject to confirmation by the Works' Manager, although the union intensely disliked these powers.<sup>45</sup> Foremen could also issue "Please Explain" notes to workers for any offence, but if the explanation was not satisfactory they could only refer the case to the Workshop Manager who in turn had to refer it to the General Manager. "The view taken by the Head Office is that no members of the service should be punished unless the offence with which he is charged is proven." In practice, it seems, by 1914

<sup>42</sup> Testimony of various foremen at Addington, e.g. W.H. Cole; "Addington Railway Workshops", p. 31.

<sup>43</sup> Between 1896 and 1912 only 196 men secured this promotion. After that it became still harder. See *RR*, 28 June 1912, p. 277; and 21 Sept. 1917, p. 406.

<sup>44</sup> Monte Calvert, *The Mechanical Engineer in America, 1830-1910: Professional Cultures in Conflict* (Baltimore, 1967), demonstrates that the champions of shop culture – which included many of the engineering-entrepreneurial elite – remained powerful until World War I. Their major opponents, the proponents of formal educational requirements for mechanical engineers, scarcely existed in New Zealand. Nor did such industries as electrical engineering, however, which first accepted the need for educational qualifications rather than an apprenticeship. In the US, however, all mechanical engineers agreed on the importance of productivity and profitability.

<sup>45</sup> *RR*, 11 Dec. 1908, pp. 9–11.

foremen issued “Please Explain” notes only to apprentices.<sup>46</sup>

The power of shop culture became politically contentious in 1909 when an ex-workshops’ boilermaker, who had been appointed to the Legislative Council, the country’s upper-house, complained that laziness, loafing and idleness were endemic at the Addington Workshops. He attributed this unhappy state of affairs to the foremen’s lack of authority. The Government appointed two engineers and an academic to investigate and the principles of “scientific management” guided their inquiry. The men from the workshops, regardless of their rank, presented a united front. A foreman fitter testified: “I have no difficulty in maintaining discipline. On one occasion three men refused overtime work; one went back after being spoken to; the other two, after inquiry, were dismissed.”<sup>47</sup> The Committee of Inquiry failed to note that the foreman’s inability to fire and hire, the fact that he had to justify all recommendations on discipline and promotion, ensured that the issue of authority on the shop floor never became explosive. Instead grievances focussed on the General Manager’s office in Wellington, especially when head office tried to reduce costs or increase productivity by tightening discipline (as happened in 1908–1912).<sup>48</sup>

### 3. *The labour process*

The key to the power of shop culture was the skilled tradesmen’s knowledge of the production process and control over the organization of work. The skilled men on the shop floor knew best what jobs needed doing, how to do them and how quickly they could be done, and how to coordinate the various processes. They also trained the young apprentices in their trades and the customs of the workshops (such as how much private work could reasonably be done in the Department’s time). Craft control had travelled with the immigrants from Britain and was part of the skilled workers’ inheritance. Further waves of immigrants from Britain, especially after the employers routed the Amalgamated Society of Engineers in 1897, sharpened the sense of danger to craft control. We now know, ironically, that British employers failed to take advantage of their victory, but this was not evident to metal workers then.<sup>49</sup>

The success of the skilled men in retaining craft control of the production process undoubtedly fuelled accusations of laziness. The 1909 Addington inquiry, prompted by such accusations, finally concluded that workers did

<sup>46</sup> Interview with R. Rutherford.

<sup>47</sup> “Addington Railway Workshops”, p. 34.

<sup>48</sup> For instance see *RR*, 30 July 1909, p. 229; 19 Nov. 1909, pp. 381–382; 5 May 1911, p. 235; 25 August 1911, pp. 383–384.

<sup>49</sup> Lazonick, *Competitive Advantage*, pp. 196–201.

not practice “government stroke” but congratulated them on their forbearance given the incompetence of management! As Frederick Winslow Taylor was arguing at about this time, however, management had no way of knowing, let alone controlling, the pace of work until it took control of the work process away from the skilled workers by establishing its own evaluation of necessary labour time and effort through time-and-motion studies.<sup>50</sup> Taylor’s ideas had become very popular in the United States and Canada but they had little influence in New Zealand. Some in the private sector spoke of superior “American methods”, but the Arbitration Court had to be persuaded.<sup>51</sup> Taylor’s technological innovations were widely adopted, however, and high-speed steel tools were used at Addington and Hillside. From 1912 onwards Hillside also generated electric power for driving cranes and later tools.<sup>52</sup> Despite the introduction of some new technologies the men continued to pace the work by customary methods. A witness at the Addington inquiry said: “In a boiler shop the nature of the work is such that the men are bound to stand still at times, and by an outsider it might be thought that those men were idling their time, but to a man who is acquainted with the character of that work that would not so appear. At such times the men would have time to chat.”<sup>53</sup> It was the same with the fitters, turners, and blacksmiths. They knew how much time each task would take and how best to do it.

Nor could management control the production flow. The workshops’ employees entered their time each day in their own individual time book, which the foreman later checked and initialled. The checking might occur only once a fortnight, however, after which the book would be sent to the timekeeper and his clerks. After this check they were sent to head office in Wellington. One apprentice boilermaker recalled with a chuckle how they would try to throw the clerks into confusion by entering details of jobs they could not possibly have done.<sup>54</sup> Nobody kept a separate record either of the time taken on particular parts of an operation, nor of the time an individual took on a particular job. During the Addington inquiry one manager was asked if he had any way of knowing what any employee was doing; he replied “No; to do so would involve a very elaborate system.”<sup>55</sup> The

<sup>50</sup> Taylor’s best-known work, *Scientific Management*, only appeared in 1911, years after the main outlines of his philosophy had been worked out and widely publicized; see David Nelson, *Frederick W. Taylor and the Rise of Scientific Management* (Madison, 1980), pp. 102–103.

<sup>51</sup> For a different view see J. McAloon, “Working Class Politics in Christchurch, 1905–1914” (M.A. thesis, University of Canterbury, 1986), ch. 2.

<sup>52</sup> High-speed steel tools were used in almost every case at Addington; “Addington Railway Workshops”, p. 35.

<sup>53</sup> J.E. Jenkinson; “Addington Railway Workshops”, p. 8.

<sup>54</sup> Interview with R. Rutherford; see also *RR*, 5 May 1911, p. 231.

<sup>55</sup> H.H. Jackson; “Addington Railway Workshops”, p. 16.



Department tried occasionally to make workers record more information on their timesheets but the men invariably sabotaged such attempts in an avalanche of detail.<sup>56</sup>

Nor were the workshops systematically organized, although this was one of the major demands of engineers in the 1890s. As a foundry proprietor familiar with overseas workshops noted: "As we all know, in the colonial shops it is a matter of additions from year to year. One machine is put down in one corner, where room is made for it; and next year another machine is got in, and it has to be crammed into another corner."<sup>57</sup> The Hillside workshops developed in the same way. Such a form of layout made systematic management of the production process almost impossible. Besides, the skilled men decided what parts and tools were needed, and often made and maintained their own tools. This was how it had been since the 1850s, when the last great surge of technical innovations led to a reorganization of work, but by 1900 engineers everywhere championed more rational shop procedures and systematic management. Hillside, like most railway workshops in the world, had been designed before "scientific management" became the new gospel. The old layout limited rationalization. Only newly built shops could incorporate the new principles of rational workplace organization.<sup>58</sup> The men had no hand in planning the layout of the workshops let alone in keeping them that way; they too had been inherited from Britain's industrial heritage. Yet the absence of systematic layout contributed to the survival of craft control and the power of shop culture.

Perhaps nothing demonstrates more clearly the power of these autonomous industrial craftsmen than their success in resisting "dilution" of their crafts. One blacksmith at Addington, who had worked at the Pittsburgh Locomotive Works in America and had investigated blacksmithing in England and Germany for that company, noted: "I have seen shops where the division of labour was much keener than at Addington Workshops."<sup>59</sup> Robert Rutherford, who was taken on at Hillside as an apprentice boiler-maker in 1915, made the same point. Immigrants from the Clyde, heartland of the British ship-building industry, were much more specialized than their New-Zealand-trained counterparts. They might know how to weld or rivet,

<sup>56</sup> *RR*, 24 August 1917, p. 361.

<sup>57</sup> George Scott; "Addington Railway Workshops", p. 21. David Fenby, who began his apprenticeship at Hillside in 1924, recalled the extraordinary contrast between the layout of the old shops compared to the new ones built in 1926.

<sup>58</sup> See David Nelson, *Managers and Workers: Origins of the New Factory System in the United States, 1880–1920* (Madison, 1975), and Frederick W. Taylor and the Rise of *Scientific Management* for a thorough analysis of scientific management in the United States, including: systematic planning, routing, cost accounting methods, systematic analysis of each machine's capacity and the time needed for each operation, detailed instruction and supervision of each worker, the differential piece rate.

<sup>59</sup> "Addington Railway Workshops", p. 24.

but not both. The New Zealand boilermakers and fitters could invariably do both, and much more besides.<sup>60</sup> Indeed in American shops by 1905 the apprenticeship system had begun to collapse as mechanization allowed employers to replace skilled men with unskilled, helpers, and women. It was much the same in Britain, although “dilution” was less common in older branches of the trade such as the workshops. The division of labour and the dilution of skill were simply less advanced than they were in Britain or the United States. They remained less advanced, however, in part because of the unanimous conviction of all men in the workshop.<sup>61</sup>

It was not only that the workforce successfully resisted the subdivision of crafts into less skilled specialities. Other factors were important. New machines that produced large runs of standardized parts could contribute little to repair work. Locomotive construction, which might have used such technology, remained only part of the work at Hillside and the New Zealand market for locomotives was tiny. Besides, the types of engineering in which standardization and mass production occurred – electrical, armaments, bicycles, sewing machines – scarcely existed in New Zealand. Yet the technological revolution in engineering that occurred between 1800 and 1850 had brought large numbers of “unskilled” workers into the workshops. In many crafts the introduction of new machines made it possible for employers to substitute unskilled for skilled labour. Only the solidarity of the craft structure prevented the helpers from taking over such work although the small skilled-unskilled wage differential in New Zealand – much smaller than in Britain or North America – meant that employers perhaps had less incentive for promoting helpers.<sup>62</sup> This said, however, some trades faced challenges.

The turners faced the most serious threat from dilution in this period. Due to the invention of turret lathes and capstan lathes, and to a lesser extent grinders, radial drills and vertical borers, the turner virtually disappeared in Canada and the United States. The helpers in the machine shop could operate the new machines and did so. This second revolution in tools, which occurred in the 1890s, had little impact at Hillside, where the old centre lathe, also considerably improved in this period, remained in use

<sup>60</sup> Interview with R. Rutherford. Men who had started later confirmed this; e.g. David Fenby, Lionel Jones, Jim Addison.

<sup>61</sup> As early as 1904 the International Association of Machinists admitted to membership anyone with four years experience and had sub-divided the machinist’s job in the turner’s shop into 25 distinct “crafts”; Walter Weyl and A.M. Sakolski, “Conditions of Entrance to the Principal Trades”, *Bulletin of the US Department of Labor*, no. 67 (1906), pp. 687–688. It should be said, however, that recent work has called in question the importance once attached to de-skilling in British engineering shops: see More, *Skill and the English Working Class*, ch. 2 and 9.

<sup>62</sup> John Child, “Wages Policy and Wages Movements in New Zealand, 1914–1923”, *Journal of Industrial Relations*, 13 (1971), pp. 164–176.

until after the war. Following electrification in 1912, however, high-speed machine tools were introduced and the first machinists appeared but whereas British engineering was hurled into the twentieth century by the war, New Zealand's workshops were frozen. Only with the arrival of German lathes – part of the reparations – was the new technology introduced.<sup>63</sup> Throughout the period, however, the number of machinists continued to expand, but they did not threaten the turners. Nor, unlike in Britain and North America, did women work in the machine shops. Mechanization did not de-skill the turner, however, for while the new machines relieved him of the least skilled parts of his work he had to use more complex blueprints and set up more complicated machines. De-skilling, in short, was not a total process and in this instance increased the strategic importance of his knowledge. No speed or feed men threatened his position, either, for they needed mass-production industry to establish a foothold.<sup>64</sup>

The workers' success in resisting the consequences of the second industrial revolution meant that the Department made no attempt to introduce incentive wage systems. Yet in America new forms of the piece rate became very popular with employers. After defeating the Amalgamated Society of Engineers in 1897 British employers also began to introduce piece rates. Although this form of payment was best suited to factories employing mass-production methods, where employers had control over hiring, the members of the Addington inquiry showed an interest in the issue. The Pittsburgh blacksmith, who had worked under both systems, had no doubt that workshops in New Zealand "do as well" as similar shops in the United States. He commented on the "remarkable harmony and peace" and claimed that discipline was better. "What is the ratio in energy exhibited at Addington as compared with American piecework shops?" "They are not in it", he replied.<sup>65</sup> Robert McEwan, a turner at Addington who had worked in the Clyde shipyards, agreed that the bonus system resulted in "an increased output". "Have you formed any opinion as to whether the turners here are good men?" "They compare every bit with the Clyde men. I may say with all truthfulness that the quality of work on the Clyde is falling very rapidly. It is becoming poorer every day as a result of the bonus system."<sup>66</sup> "Piecework was not merely 'payment by results' but a new concept of the job which transferred the power to make many decisions

<sup>63</sup> Interview with R. Rutherford; for Britain see Jeffreys, *Story of the Engineers*, pp. 170–189; and Johnathan Zeitlin, "Engineers and Compositors", in Royden Harrison and Zeitlin (eds), *Divisions of Labour: Skilled Workers and Technological Change in Nineteenth Century England* (Brighton, 1985), pp. 185–250.

<sup>64</sup> More, *Skill and the English Working Class*, p. 35 and ch. 9 makes the same point more generally and, pp. 140–141, 186 discusses the British turner.

<sup>65</sup> "Addington Railway Workshops", p. 24.

<sup>66</sup> *Ibid.*, p. 34.

from the individual craftsman to the industrial engineer."<sup>67</sup>

The Addington inquiry, while sympathetic to incentive payments as a means of extracting more effort from workers, ensured that an unpopular Government ignored the report by frightening the skilled men and Head Office into an alliance.<sup>68</sup> Not that there is any evidence in this period to suggest that management wanted to institute piece rates or challenge craft control of the production process. The Liberal-Labour Government, in fact, moved in the opposite direction, increasingly reducing relativities between crafts and between skilled and unskilled men. By 1909 the pay structure was quite flat by international standards, with first-grade tradesmen receiving 10s to 10s 6d and second-grade tradesmen receiving 9s 6d. Even the leading hands made only between 11s and 12s 6d per day. Incremental creep also contributed. At Addington in 1909, 75% of the tradesmen were in grade 1, including 94% of the casual tradesmen, although at Hillside in 1913, by comparison, only 55 out of 90 casuals were in grade one.<sup>69</sup> This is not the place to analyse the emergence of this flatness in wage differentials, nor the emergence of a core rate for all skilled men, yet both processes dramatically distinguish New Zealand from Britain and North America and helped to define the meaning of equality in the three societies.<sup>70</sup> More to the point, the flatness in wage differentials helped to reinforce craft control of the production process and eroded potential threats to the solidarity of shop culture.

#### 4. Management attacks

The old system survived the First World War but it was not obvious that it would do so. The Department brought men out of retirement, promoted some helpers and improvers to skilled positions, and even hired some women as machinists, but it agreed fully with the union that only War-time urgency justified the policy.<sup>71</sup> Difficulty in recruiting apprentices created

<sup>67</sup> Perlman, *Machinists*, p. 28.

<sup>68</sup> Olssen, "Railway Workers and Scientific Management", p. 129–133.

<sup>69</sup> See Ronayne to Sec. ASRS, 7 May 1913, R-3, 12/2910/1, RDM/NA; and for wage rates at Hillside, Duncan, "Hillside Railway Workshops", Table C, p. 9 (she compiled wage rates from the D-2 list).

<sup>70</sup> See Erik Olssen and Jeremy Brecher, "New Zealand and United States Labour Movements: The View from the Workshop Floor", in Jock Phillips (ed.), *New Worlds? The Comparative History of New Zealand and the United States* (Wellington, 1989), pp. 96–112. These guidelines shaped wage policy in the private sector; see James Holt, *Compulsory Arbitration in New Zealand: The First Forty Years* (Auckland, 1986), ch. 3–4.

<sup>71</sup> *RR*, 22 Sept. 1916, p. 429; 20 Oct. 1916, p. 476; 9 Feb. 1917, p. 87; and 4 May 1917, p. 183. Even in the late 1920s the Department used the fact that women had been capable of operating certain machines to resist wage claims; see *RR*, 30 July 1926, p. 31.

more complex problems in the long run but they only became apparent in 1920–1921.<sup>72</sup> Although one-quarter of the men at the Hillside workshops volunteered for military service before the first conscription ballot in November 1916, the stability of the workforce and South Dunedin's population meant that most of the problems could be dealt with by bringing back retired tradesmen.<sup>73</sup> The skilled men, however, viewed with anxiety the threat of War-induced dilution and the possibility that what they accepted as a temporary necessity would become permanent after the War. The return of disabled soldiers to the workshops also sharpened anxiety.<sup>74</sup> These fears fed a wave of unrest in the workshops. The skilled metal workers demanded that "no person be allowed to do tradesmen's work who has not served an apprenticeship" and insisted that the union give their wage claim priority in order to re-establish relativities for skill. The ASRS rejected both requests and the railway tradesmen moved to form their own union.<sup>75</sup> The ASRS headed off this secessionist movement by the frustrated tradesmen, a movement strongly supported by the tradesmen at Hillside, thanks to the Government's desire to quieten matters during the War. The ASRS, partly to out-flank the secessionists, affiliated with other unions in the transport industry to form the syndicalist Transport Workers' Advisory Board. During the war years the National Government ignored this challenge to the status quo but there was a bi-partisan consensus that the ASRS would lose its privileges, such as superannuation, if it became involved in politics. Yet the Prime Minister and the Reform Government did not tackle the issue until after the post-war depression, by when it was clear the ASRS had allied with a paper tiger.<sup>76</sup> The necessity of war doubtless explains the Government's restraint.

In 1923 the Government appointed a commission to investigate the

<sup>72</sup> The shortage of apprentices created a shortage of tradesmen by 1920. The Department tried to cope by increasing the pay for apprentices (and so altering complex relativities) while hiring casuals at the maximum rate of pay. Hundreds of anomalies resulted. See General Manager to District Engineers, 20 Feb. 1920, R-3, 12/2910/1, RDM/NA; F. W. Furkert (Under-Secretary), "Memo for Public Service Commissioner: Rates of Pay for Apprentices", 4 Oct. 1921, R-3, 14/5281, RDM/NA; and Chief Mechanical Engineer, "Memo: Apprentices", 27 May 1925, R-3, 12/1505/1, RDM/NA.

<sup>73</sup> *RR*, 2 June 1916, p. 231; and Tom Brooking, David Thomson and Dick Martin, "Transience in Caversham", Caversham Project working paper.

<sup>74</sup> The Department informed the Military Service Board for Wellington that 2,600 employees had been given leave, which meant that they could return to their jobs; *RR*, 1 June 1917, p. 235.

<sup>75</sup> The list of demands is the first document in a file named "Tradesman's Interview", Amalgamated Society of Railway Servants Mss. National Union of Railwaymen's Head Office, Wellington.

<sup>76</sup> Michelle Slade, "Industrial Unionism in New Zealand: a Study of the Transport Workers' Advisory Board and the Alliance of Labour, 1916–1925" (M.A. thesis, University of Auckland, 1983).

country's railways. This inquiry, headed by Sir Samuel Fay and Sir Vincent Raven, confined itself mainly to the management systems of the General Manager's office but criticized the obsolete machinery, the congested and inefficient layout of workshops, the absence of formal training for apprentices, and the duplication of work. Petone and Addington, they concluded, could undertake all the work. Fay and Raven recommended that an outside production manager be employed to modernize the workshops.<sup>77</sup> In 1924 E. T. Spidy, a New Zealand-born production engineer with Canadian Pacific, one of the first railroad companies to introduce scientific management into its workshops, was appointed to undertake this task. Spidy started at the Petone workshops before visiting all the others, but he found the same situation everywhere. Using the Canadian Pacific's workshops as his yardstick, he found the New Zealand workshops to be slow and inefficient. Moreover the shops were out of date "in type and equipment", much work was wastefully duplicated, and many shops were too small. Most damning, he concluded, "costs, as a means of management, are no factor at all".<sup>78</sup>

In a subsequent report, submitted in December 1924, Spidy repeated his criticisms: locomotives, cars, and wagons were in the workshops too long for repairs, labour was wasted, and the cost of repairs was excessive. He proposed a new system of production scheduling: each foreman should have to estimate the cost of a job and keep a material-requisition book; the work done in each shop ought to be tracked by accountants, not the shop clerk; and each locomotive or wagon should be issued with a cost card which would accompany it from shop to shop. The repairs needed, however, should no longer be estimated by the men charged with doing the work but on the basis of mileage done. Spidy was most astonished, however, by the system of keeping time books. Spidy's recommendations concerning production-scheduling proved relatively uncontroversial but, as he doubtless expected, problems emerged when he recommended that management attempt to establish some control over the labour process. He had no doubt that the existing system, under which workers decided how long each task should take and kept their own time books, not to mention how each task should be done, had to go, but declared himself uncertain how to ensure that management knew the number of hours required for each task.<sup>79</sup>

In January 1925 Spidy recommended that a daily-time card would allow

<sup>77</sup> *Report of the Royal Commission into the Railway Service* [ . . . ] (Wellington, 1924), pp. xxxii–xxxvi; and *RR*, 9 Jan. 1925, p. 1. The fullest account of this investigation and the subsequent reorganization is D.A. Crosado, "The Reorganisation of the New Zealand Railway Workshops 1924–1930", unpublished ms, kindly lent by the author.

<sup>78</sup> Spidy, "Memo/3108", R-3, 1925/343/1, RDM/NA. For the Canadian background see Paul Craven and Tom Traves, "Canadian Railways as Manufacturers, 1850–80", a paper presented to the Canadian Historical Association, June 1983.

<sup>79</sup> Spidy to Chief Mechanical Engineer, 1 Dec. 1924, R-3, 1925/343/1, RDM/NA.



management to ascertain the time required for each job in each shop and “what the work should cost”.<sup>80</sup> The Government abolished graded pay scales, ended the invidious two Divisions, and replaced the old bureaucratic methods of discipline, long irksome to the men, with a merit system based on incentives rather than penalties. The Minister of Railways – who had become Prime Minister in 1925 – enjoyed great popularity among railway workers.<sup>81</sup> The new system was instituted immediately and despite some concern among the men it proved popular. The timing could not have been better, however, for the ASRS had just been routed in its first strike since 1890 and many skilled men of the workshops had just seceded to form the Railway Tradesmen’s Association.<sup>82</sup> There is no evidence that the secession of the tradesmen, bitterly resented by the ASRS (which retained jurisdiction over helpers and strikers), weakened the shop-floor consensus among the skilled or afforded management any advantage. Indeed the Government’s decision to rebuild and modernize the workshops appealed to the pride that most skilled men had in their work. The Government’s decision to recognize the importance of their skills, and equip them with the most modern machines and workshops, won almost unanimous approval.<sup>83</sup> Nor did they have any reason for being unhappy once their anxieties had been allayed by a full process of consultation. The industrial craftsmen of the workshops retained craft control and superannuation. Apprenticeship also remained the only way of gaining access to the skilled metal trades.

By building on a fairly solid foundation of mutual trust and investing in extensive consultation, the Department re-built the workshops on systematic lines, invested heavily in new technologies, and reaped productivity gains. In 1926, however, management recommended introducing Taylor’s premium bonus, presumably on the grounds that the gains could be greater if it wrested more control over the labour process from the skilled workers. Organized workers, in New Zealand as elsewhere, regarded the premium bonus and an ill-disguised piece rate, “the most fruitful source of reductions of wages and capitalistic cheating”, if not, as Marx had said, “the form of wages most in harmony with the capitalist mode of production”.<sup>84</sup> Taylor

<sup>80</sup> Spidy to Chief Mechanical Engineer, 23 Jan. 1925, R-3, 1925/343/1, RDM/NA.

<sup>81</sup> *RR*, 24 July 1925, pp. 375–376; and 2 July 1926, p. 339.

<sup>82</sup> Hillside voted against striking and became a stronghold of the RTA; for the vote see ASRS, “Biennial Conference 1925: Verbatim Report on 1924 Strike Discussion [. . .]” (Wellington, 1925), p. 6. According to Jim Addison the patternmakers, fitters, turners, boilermakers, tinsmiths and blacksmiths joined the RTA while the “unskilled” – machinists, moulders, and fettlers – remained in the ASRS.

<sup>83</sup> See “Railway Workshops: A Tour of Hillside [. . .]”, *RR*, 28 May 1927, pp. 305–307 (reprinted from a major daily newspaper, *The Otago Daily Times*). Those who remembered the shift from old to new shops were still impressed 60 years later.

<sup>84</sup> Cited by Ken Buckley and Ted Wheelwright, *No Paradise for Workers: Capitalism and the Common People in Australia 1788–1914* (Melbourne, 1988), p. 157.



had designed his premium bonus to reassure workers that if they increased their effort to obtain more pay, and at the same time increased productivity, employers would not cut the piece rate. In the United States, however, it proved impossible to persuade skilled workers that employers would treat them fairly given that employers had launched a full-scale attack on craft control of the labour process.<sup>85</sup> By 1926 the premium bonus had achieved symbolic status and the skilled men of the workshops met management's proposal with unanimous opposition. Despite the bitterness between them, even the two unions reacted in unison. The Government, anxious not to jeopardize the substantial gains already made, quickly distanced itself from management and the issue of the premium bonus died an unlamented death.<sup>86</sup>

### 5. Conclusion

The ability of the workshops' employees to successfully resist skill dilution and maintain apprenticeship as the only path of admission to their crafts was, in international terms, remarkable. Yet that ability grew out of the unique situation in New Zealand and the timing of certain key developments. The importance of the railways to the economy meant that even a pro-farmer government agreed on the need to stabilize employment to maintain the skilled workforce. Massey and Reform – Reform governed New Zealand from 1912 until 1928 – might have been more hostile had the railway-labour system been less well entrenched and shop culture less powerful. By and large, however, Reform accepted the labour-system because it did not want to create unrest within the railway system. Yet the unique character of the engineering industry in New Zealand also contributed. Repair work did not lend itself to mass production methods. And the number of locomotives built, while sufficient to meet New Zealand's needs, was too small to justify mass-production methods. Besides, given the small difference between the wages of skilled and unskilled, employers had less incentive than in Britain or the United States to substitute unskilled for skilled labour. Thus the fitters and turners remained in existence, proud of

<sup>85</sup> Lazonick, *Competitive Advantage*, pp. 227–228. Ironically, in Britain, engineering employers assumed that the introduction of piece rates would give them control of the labour process, but the belief proved wrong because, according to Lazonick, pp. 197–201, they “failed to make the investments in managerial structures that, in conjunction with the mass-production technologies, were needed to take control of work off the shop floor” (p. 198).

<sup>86</sup> See *RR*, 24 Sept. 1926, pp. 507–508; and “ASRS Executive Council Interview with Acting Minister of Railways [. . .] November 16, 1926”, *RR*, 22 Oct. 1926. Private-sector engineering firms in Christchurch also pushed for the premium bonus; *RR*, 22 Oct. 1926, pp. 572–573.

their craft skill and their work, and convinced of the advantages of their general training and of the apprenticeship system. The other skilled men, such as boilermakers and blacksmiths, also remained proudly autonomous and craft control largely unquestioned.

Research into the labour process had tended to polarize around the relative importance of structure and agency and labour historians have divided into two loose groupings: one portrays labour on the shop floor as oppositional, resistant to the prerogatives of capital “at the point of production”, while the other has concluded that labour has been largely vulnerable to subordination. In the past few years something of a convergence has occurred. As Richard Price remarked:

Whilst it could be shown that conflicts over job control were an important influence on the nature of production relations, exactly how to assess their meaning remained problematic. It could be argued that these conflicts possessed limited scope, were apolitical, did not contradict the “real” subordination to capitalist domination and, finally, did not signify a uniquely militant property of the rank and file.<sup>87</sup>

To some extent one might agree with these propositions after studying New Zealand’s railway workshops, but without concluding that “their meaning remained problematic”. Only if the proof of agency must be the growth of revolutionary-class consciousness of the overthrow of capitalism can we conclude that the men at Hillside had no agency. One could more easily argue, however, that they had no interest in a revolution because they enjoyed sufficient agency to achieve their main goals.<sup>88</sup>

The issues can be further clarified by taking each proposition in turn. First, it is true that few conflicts occurred and on most days consensus was more important than conflict, yet consensus reflected and underpinned the power of shop culture and rested upon the skilled metal workers’ control over the labour process. True, by and large the skilled workers’ control over the labour process was largely apolitical, and the sort of issue which politicized their counterparts in Britain and the United States after the War – state ownership and joint control – had little salience in New Zealand (for obvious reasons). But if the concept apolitical is not making a teleological point then we need to remember that the men of the workshops always had the power, if united, to politicize their grievances. They showed a marked willingness to do so to protect craft control, and in that essentially conservative cause could threaten militancy. For most of the time they were content if not complacent, because they played a key role in negotiating the terms

<sup>87</sup> Richard Price, *Labour in British Society: an interpretive history* (London, 1986), p. 4.

<sup>88</sup> We use Anthony Giddens, *The Class Structure of the Advanced Societies* (London, 1973), ch. 11, for the forms of class consciousness.

on which they were dominated and retained control over those aspects of the labour process that concerned them most. Their skill was of central importance. It gave them a sense of identity and pride, it was critical to the production process (even after the adoption of production scheduling), and it provided the foundation for shop culture.

Their union – and Hillside did not have its own branch until the War – played an important role in negotiating with Government, especially over wages, but played little part in issues that affected control of the labour process. At crucial points, as in 1916, the ASRS vacillated over issues such as dilution. Even after the reforms of 1925–1926 the skilled tradesmen continued to play a crucial role in the coordination of work, retained a monopoly over knowledge of how the work was to be done, and exercised almost complete control over the execution of all tasks. They also retained control over on-the-job training while shop-floor supervisors, workshop managers, and the personnel in the Locomotive Department continued to be recruited from the ranks of the skilled tradesmen on the shop floor. In short, as Anthony Giddens has perceptively remarked, the structure-agency dualism is not to be resolved by awarding one perspective a victory, for structure is the medium of agency and agency the medium for structure.<sup>89</sup>

This case study also reveals the inadequacy of labour-process theory as it has been formulated. The theory, both in its “oppositional” and “subordination” strands, rests on three assumptions (which often get re-cycled into the conclusions): first, that productive processes determine the social relations of production; that capitalism develops in a uniform and homogeneous manner, regardless of time and space; and that mechanization de-skills, thus debasing labour. It would be excessive to claim that each assumption could sensibly be stood on its head, for matters are more complex, but that possibility needs to be recognized. Mechanization, for instance, certainly changed the skill content of work, as the introduction of electricity and high-speed machine tools did in the workshops, but the existing social relations of production determined how they were used. Once sure that they would retain control of the labour process, indeed, the workers were delighted to have the most modern tools and machines. It might be argued that the labour process in a state-owned railway workshop in a small and colonial economy proves nothing, but it at least defines one possibility, however unusual. This study underlines the importance of the nature of ownership, the size of firms and product markets, and the central significance of politics and culture in determining the outcome of the struggle for control over the labour process or, indeed, whether a struggle occurs.

<sup>89</sup> Anthony Giddens, *Social Theory and Modern Sociology* (Cambridge, 1987), pp. 219–221.

Some observers regard the perpetuation of this system, and the failure to introduce scientific management techniques, as a sign of the backwardness of New Zealand industry and the state sector in particular, a sign of its insulation from the pressures of the world market. It is worth noting, however, that scientific management is currently regarded as one of the main sources of industrial decline in the United States. The successful Japanese approach to management, conversely, bears remarkable similarities to the system established in New Zealand railways between 1894 and 1926, including lifetime employment, strong emphasis on advancement by seniority, relatively little spread in wage levels, broadly-based training, and even growth of skills through job rotation. In another respect, however, it might be argued that the British tradition of craft control survived the Department's, and the Government's, occasional flirtation with American ideas of scientific management. Even in 1925–1926 nobody called for substantial investment in management structures.<sup>90</sup> When that call finally triumphed, at the end of the 1980s, it was again proved that those who refuse to learn from history are destined to repeat it.

<sup>90</sup> The argument in this paragraph is indebted to Lazonick, *Competitive Advantage*.