

# The Australian Standard Garratt: the engine that brought down a government<sup>1</sup>

Bobbie Oliver<sup>2</sup>

## *Abstract*

This paper concerns three significant aspects of twentieth century history in both Australia and Britain: trade unions, railways and war. During the world wars trade unionists in both countries worked under poor conditions, and sometimes endured loss of hard-won privileges in order to further the war effort, and in the hope that governments and employers would acknowledge their sacrifices and redress their grievances once peace was restored. The paper discusses two instances, one in Western Australia and one in Britain, where these grievances were not addressed after the War, and examines the different outcomes. After comparing the circumstances in which the Australian Standard Garratt and the WD 'Austerity' heavy freight locomotives were produced, it explores the problems with these engines and the outcomes arising from union grievances. Finally, the paper posits that studying the outcomes of these industrial disputes on the railways, arising out of wartime conditions, furthers our understanding of the stresses of war on society.

## Key Words:

Railways; wartime; Australian Standard Garratt; Austerity engines; disputes.

In October 2013, it will be 70 years since the first Australian Standard Garratt [henceforth ASG] engine entered service in Queensland.<sup>3</sup> This year (2011) marks the sixtieth anniversary of the engine's decommissioning in Western Australia, where it was designed; most others of this class had been consigned to a similar fate by the mid 1950s.<sup>4</sup> Despite having probably the shortest career of any steam locomotive in Australia, the ASG has continued to spark debate in web forums among locomotive enthusiasts as recently as 2010<sup>5</sup>. While the history of the ASG's many technical failings is well known among Australian rail buffs<sup>6</sup> and its industrial history has been recounted by labour historians,<sup>7</sup> it is likely that an international readership may be unaware of the distinction between the ill-fated Australian Standard Garratt and its much better known and superior 'relative', the Beyer, Peacock-built (or Beyer-Garratt) articulated locomotive, which was a popular and successful engine in many parts of the world, including Australia. How and why the ASG differed from the Beyer-Garratt will be discussed shortly.

This paper concerns three significant aspects of twentieth century history in Australia and Britain: trade unions, railways and war. Unfortunately, many studies of the latter two have neglected the influence of the former,<sup>8</sup> yet closer examination shows that during the world wars trade unionists in both countries worked under poor conditions, and sometimes sacrificed hard-won privileges in order to further the war effort, and in the hope that governments and employers would acknowledge their sacrifices and redress their grievances once peace was restored. Exceptions among railway workers during World War I were the 1917 General Strike that began in the Sydney railway and tramway workshops and spread to Victoria and Queensland, and the British 'ten-shilling' strike of September 1918.<sup>9</sup> In World War II, Australian

unions suffered from the popular perception that they were uncooperative and spent much time on strike. Popular Labor Prime Minister John Curtin was reportedly reduced to tears over his frustration at striking coal miners in 1942 and 1943.<sup>10</sup>

The paper discusses two instances, one in Western Australia and one in England, where these grievances were not addressed after the War, and examines the different outcomes. Firstly, it compares the engines central to union complaints, the ASG and the similarly hastily produced WD ‘Austerity’ heavy freight locomotive, designed in Britain by Robert Riddles. Secondly, it explores the problems with the ASG, and examines the consequences for the Western Australian Government Railways [WAGR], the Western Australian Locomotive Engine Drivers’, Firemen’s and Cleaners’ Union [hereafter the WALEDF&CU or the Union] and the WA State Labor Government.<sup>11</sup> The paper then compares these with industrial conflict at Bristol concerning Austerity engines in 1947, and suggests reasons for the very different outcomes of union grievances over these wartime engines. This comparison is justified not only because of the similar circumstances in which the locomotives were designed and created, but also because the unions involved – the WALEDF&CU in Western Australia and the Associated Society of Locomotive Engineers and Firemen [ASLEF] in Britain were both footplate unions, with similar histories, career structures, working conditions and elite traditions which separated them from other railway workers.<sup>12</sup> Finally, the paper posits that studying the outcomes of these industrial disputes on the railways, arising out of wartime conditions, furthers our understanding of the stresses of war on society.

Freight requirements in wartime Australia

During World War II, the State-run railways in Australia desperately needed modern locomotives capable of hauling heavy loads. With funds and resources in short supply, Fred Mills, the Chief Mechanical Engineer [CME] at the WAGR's Midland Workshops near Perth, adapted the design of an earlier Beyer-Garratt locomotive to create the Australian Standard Garratt for service on 3 foot 6 inch gauge railways in Queensland, Tasmania, Western Australia and the Northern Territory.<sup>13</sup> Even before the engine was off the drawing board, rail authorities in Queensland and Tasmania opposed the project. Sixty-five locomotives were constructed, with the first entering service in 1943. The speed of the Garratt's design and construction was regarded as 'an outstanding feat of draftsmanship, fabrication, assembly and logistics, all the more remarkable because it was done in wartime'.<sup>14</sup> Similar praise was accorded R. A. Riddles' 2-8-0 and 2-10-0 heavy freight engines, mass produced in wartime Britain, and known as 'Austerity engines' because of their 'no frills' design. Whereas Riddles' engines were mainly successful, however, the Australian Standard Garratt turned out to be an expensive failure.

Despite opposition from the Queensland and Tasmanian governments and demands for further modifications, the Garratt entered service in 1943-44. Because of the movement of both American and Australian troops to Northern Queensland during the Pacific War, Queensland Government Railways [QGR] was under incredible pressure. Whiting states that in early 1943, '14,000 tons of military traffic was ... stranded in New South Wales because of the inability to trans-ship it to QGR'. The Army required a weekly minimum of sixty-three trains but was getting only forty.<sup>15</sup> The states were required to lease them from the Commonwealth Government, with option to purchase. The WAGR bought twenty-five engines to help replenish their aging locomotive stock, 84 per cent of which was at least thirty years old, which was

regarded as being the end of an engine's economic life. This circumstance had arisen because locomotive production at Midland ceased during the Depression and had not recovered sufficiently prior to the war. Additionally, the WAGR had responded to an urgent request from the Federal Government in 1942 for twenty-six shunting engines for use in the Northern Territory, further depleting their stock.<sup>16</sup>

#### The Beyer-Garratt and its Australian modifications

H.W. Garratt designed the original, articulated engine in 1911. Because of its ability to work on light lines and negotiate tight bends while pulling heavy loads, the Garratt was used extensively on narrow gauge railways in Western Australia and Tasmania. The WAGR purchased twelve 'M' and 'MS' class engines from Beyer, Peacock and Company in Manchester, and the WAGR Workshops constructed ten new Garratt engines in 1929. Fred Mills (then the WAGR's Chief Draftsman), modified the MS class design, and produced 74-ton 'MSA' class engines. Capable of hauling 302 tons over a grade of one in forty-five, they were the first locomotives manufactured entirely in Western Australia.<sup>17</sup> There were no major problems with the MSA engines, a fact that was noted by the Royal Commissioner in his 1946 Report.<sup>18</sup> The findings of this Report will be discussed in detail later in this paper.

In 1942, the Commonwealth Land Transport Board appointed Jack Ellis, the WA Commissioner of Railways, to investigate the carrying capacity of all three-foot-six-inch gauges in Western Australia and Queensland, where the impact of the Pacific war was greatest. Ellis recommended building light, medium and heavy models of locomotives on the Garratt principle. To reduce the Garratt's rigid wheelbase from 13 feet 6 inches to 9 feet to comply with Queensland restrictions, the leading coupled

wheels were made flangeless, giving the locomotive greater ease in riding around severe curves.<sup>19</sup> The flangeless wheels would cause derailments on the new engines.

The Commonwealth Land Transport Board approached Beyer, Peacock, who offered two models, but the Board rejected both, and a subsequent offer of drawings only, as too expensive. Instead, the War Cabinet accepted the Board's recommendation to design and build the locomotives in Australia. This decision was probably based on the success of Mills' MSA engines, as well as expense. Using Beyer, Peacock's earlier type 120328 drawing as a basis, Mills, now Chief Mechanical Engineer at the WAGR Workshops, designed and supervised construction of the ASG engine. Mills' modifications created a larger firebox, boiler, coal bunker and water tanks, enabling the engine to travel long distances, but increased the overall weight by 9.5 Imperial tons (8.6 metric tonnes). This additional weight was decreased by reducing the thickness of plates used for frame stays, cutting holes in the sides of the boiler cradle frame and in main plates of engine frames, making some of the control rods hollow, and introducing other 'economy features', which arguably weakened the structure of the locomotive.<sup>20</sup>

The Commonwealth Land Transport Board spread the manufacture of the components over 105 different shops, with four assembly points including Midland. The manufacturers did not build a prototype for rigorous testing before mass production; the first locomotive was built in four months and, as mentioned previously, entered service in Queensland in October 1943.<sup>21</sup> By April 1944, after being in service only a few months, ten ASG engines were standing idle at the Rockhampton Workshops in Central Queensland, following the discovery of serious defects in their design.<sup>22</sup>

## British 'Austerity' Engines

Although the sixty-five Garratt engines were produced with what may have been unprecedented haste in Australia, Britain built 935 modified 2-8-0 heavy freight 'Austerity' engines for wartime use in less than half the time it took to produce the ASG. Larger 'Austerities' with a 2-10-0 wheel configuration began rolling out of the North British foundry in June 1944. Like the ASG, the 2-10-0 was designed to haul heavy loads over 'light, impoverished, or imperfect track', and it had many modifications including flangeless centre coupled wheels to aid in negotiating tight curves.<sup>23</sup> In this characteristic as well as size, the 2-10-0 (or 'WD') compares more closely to the ASG, than other 'Austerity' models used in Britain.<sup>24</sup>

Prior to this, American S160s (also called 'Austerity engines'), had arrived in Britain at the end of 1942. British crews had not been trained to drive these imported engines, often working them in unfavourable conditions such as wartime blackout. After the firebox of an S160 collapsed at Thurston, Suffolk, in the early hours of 12 January 1944, causing serious injuries to the driver and fireman, crews were ordered to maintain boiler pressure at or below 200 pounds, although the engines' official rating was 225 pounds.<sup>25</sup> But, in his report to the Ministry of War Transport, the accident investigator, J. L. M. Moore, regarded the driver and fireman as being at fault for not checking the test cocks to ascertain the level of water in the boiler.<sup>26</sup>

The British-built engines also met with opposition, but not initially from the footplate staff. Several railway managers opposed their introduction, with the Chief Engineer of the London, Midland & Scottish Railway refusing to run them on the company's lines until they had been adequately tested to demonstrate their ability to negotiate sharp curves safely. Arguably, the role of the railway managers of private companies under government control for the duration of the war has some parallels

with Australian state rail authorities in the same period. Normally, there was no federal interference in the running of the Australian state railways, but the wartime *National Security Regulations* granted the Commonwealth government many new powers, including over transport. The British locomotives passed the tests satisfactorily and entered service.<sup>27</sup> Even so, the engines were quite rough to operate, which may have caused safety issues, and they were restricted to a maximum speed of 40 miles (64 kilometres) per hour.<sup>28</sup>

### Problems with the ASG

ASG enginemmen found difficulty travelling at even half the engine's maximum speed of 45 miles (72 kilometres) per hour. By July 1944, three State government railway departments were complaining about the ASG's structural weaknesses and numerous mechanical failings. Despite Queensland's hostility to the engines, and Tasmania's refusal to accept any more until modifications were made, however, WAGR's Chief Transport Officer declared that the locomotives were satisfactory. The State Government purchased twenty-five engines at a unit price of £12,000, which Mills and Evans, the Chief Traffic Manager of WAGR, thought was a bargain.<sup>29</sup>

[Fig 1 Here– first Garratt produced in WA outside the shed at Midland]

Early complaints from footplate staff concerned the engine passing through the Swan View Tunnel in the hills outside of Perth. Built in the shape of a Gothic arch in 1895-96 for smaller engines, the tunnel measured over 1,000 feet in length, with a maximum height of fourteen-foot-two-inches and a width of only twelve-foot-six-inches. The ASG had a clearance of less than two feet at the highest part of the tunnel and six inches at the sides. In 1942, Thomas Beer was asphyxiated in the tunnel, while driving a smaller engine than the Garratt, and the three other crew members on

the double-headed train lost consciousness.<sup>30</sup> The WALED&CU staged a stoppage in February 1944, resulting in the Commissioner of Railways agreeing that ASGs would not be used up-grade through the Swan View Tunnel until tests had been conducted.<sup>31</sup>

On the night of 12 September 1944, fireman Frank Whitmore, working locomotive ASG29 on a suburban line between Perth and the port of Fremantle, died after being struck by an object on a passing train. The shocked driver, Robert Stafford, continued in his journey with only the guard's assistance and derailed his engine on the bridge over the Claremont subway, further along the line.<sup>32</sup> The inquest into Whitmore's death heard that the ASG's extra width might make the crew vulnerable to being struck by an open carriage door of a passing train, if they were leaning out of the cab. The Coroner ruled that Whitmore's death was caused by a fractured skull and 'laceration and disorganisation' of the brain, after being struck – possibly by the open carriage door of the passing passenger train.<sup>33</sup>

Fig. 2. Claremont subway crash

The Union's response

Union Secretary Harry Webb insisted that the width of the ASG cabin constituted a safety hazard. In a similar accident, a carriage door struck a cleaner – fortunately without fatal consequences – and other mishaps included a potentially fatal derailment near Bridgetown in April 1945, but the enginemen continued working ASGs until the end of the war. When the Union again demanded that the engines be withdrawn from service and undergo modifications, William Marshall, the Minister for Railways, mentioned the 'colossal' sum of money spent on purchasing the ASG locomotives, and the loss of haulage power if they were taken off the road ('which would provide

an opportunity for road competition to become firmly established'). A Union ultimatum that members would not to take any Garratt engines on traffic after 12.01am on 11 October 1945, sparked activity in the Premier's Department. By 1945, the ALP had held government in Western Australia since 1924, with the exception of one term in the worst years of the Depression (1930-33). Always moderate politically, the party in Western Australia was strongly influenced by its largest affiliated union, the Australian Workers Union. Prior to 1963, the ALP served as both the workers' political party and their industrial representatives, there being no separate Trades and Labor Council in Western Australia, such as existed in all of the other Australian states. Unions were affiliated to the ALP and elected representatives to District Councils who in turn sent delegates to the State Executive and the triennial State Conference. Consequently, if a union disaffiliated from the ALP because of a disagreement, it had no representation in the Councils of the Party, although it was still a registered union in the Arbitration Court.<sup>34</sup>

On 8 October, Premier Frank Wise called the Union's bluff. Although he allowed some concessions, such as giving priority to repairing other types of engines and running ASGs on single lines to avoid a repeat of the accident that caused Whitmore's death, Wise insisted on keeping them in service, but he agreed to appoint a Royal Commission to investigate their structural and mechanical efficiency and their operation and safe-working.<sup>35</sup>

Railways Department officials, however, scoffed at the Union's concerns. The Assistant Commissioner, Mr. Tomlinson, said the Union's objection was based 'only on the safety factor' – as if this was an insignificant issue – and claimed that 'excessive speed' (or driver error) caused the Bridgetown derailment. Tomlinson asserted that the ASGs had 'only one case of derailment in 330,000 miles of running

... less than half the rate of normal derailments'; there was 'no substance' in the Union claim that they were dangerous. ASGs represented seventeen per cent of the available WAGR goods engine stock and were hauling twenty-five per cent of the goods load, 'proving that they are above average efficiency'. The Department was prepared to test any ASG locomotive on any section of line where they were authorised to run, under conditions determined by the Union, and would abide by the result of the test.<sup>36</sup> This was a very different reaction from that of QGR, which had complied with the ban that the AFULE placed on the engines after they started derailling. By 1945, twenty ASGs were lying idle in Queensland sidings.<sup>37</sup> According to Whiting, the greatest opposition to ASGs came from the Commissioner, P.R.T. Wills, who opposed the Commonwealth Land Transport Board's decision to construct them instead of the C17, a Queensland-built engine which, Wills believed, was more suited to that State's railway system. Whiting attributes this hostility at least partly to a conservative culture that had seen little technological innovation in several decades. Unlike Western Australia, QR did not have a history of using Beyer-Garratt locomotives, having resisted previous attempts to import them from Britain, despite the fact that they were ideally suited to Queensland's light, narrow-rail lines, and proved to be so when introduced after the war.<sup>38</sup>

On 10 October, in Western Australia, Premier Wise announced the appointment of a Royal Commission to investigate all aspects of the dispute between the Commissioner of Railways and the Union, to determine whether the locomotives were safe, economical and satisfactory, and if not, to advise what modifications were practicable.<sup>39</sup> Pending the Royal Commission's outcome, Wise asked the Railways Department to come to an immediate agreement with the Union on removing ASGs from passenger services; restricting their speed to twenty-five miles per hour, and

eliminating all bunker-first running. ASGs in the Workshops for repairs should be examined for defects mentioned by the Union.<sup>40</sup>

The Union feared that the Railways Department would not honour the agreement, as evidenced by the fact that engine ASG30, which the Union claimed required major repairs and should be placed on low priority, was being repaired in the Workshops. Nor had the Department complied with the request to run ASGs only on single lines. Webb warned that if the Department continued to ignore these conditions, the Union would again instruct its members to stop working the locomotives.<sup>41</sup> On 22 October, Webb threatened to declare ASG30 black if it was repaired and put back into service, and he asked for work on it to cease. Commissioner Ellis appeared to comply and tensions eased briefly.<sup>42</sup>

By the end of 1945, however, Union and Departmental differences seemed irreconcilable. Ellis complained to Marshall of the ‘irrationality’ of seven ‘modern, powerful engines standing idle’ when the State’s resources were so stretched. As the results of the Royal Commission would not be known for months, he ‘strongly’ recommended that the Government urge the Union to agree to repairs being made.<sup>43</sup> Yet even when the Union accepted compromise, the Department continued to be obstructive, for example, refusing to provide free pairs of goggles for crews working engines bunker first – which would have facilitated lifting the embargo – because they estimated that it would be necessary to provide at least eighty-two pairs. Soon, they argued, all crews would want goggles, and the expense could not be borne.<sup>44</sup> Considering the potential loss of freight revenues if the ASGs ceased operating, it was a false economy, but it indicates the extent to which WAGR Departmental policy was determined by financial constraints and short-term thinking.

## The Royal Commission into the Australian Standard Garratt engine

The Royal Commission began on Monday 5 November 1945, in an atmosphere of mutual hostility. The WALED&CU President, Alexander Davies, outlined his members' complaints against the engine. Although ASGs pulled 20 per cent more than next strongest type of engine, they had to make more steam; the fireman was continually shovelling when going up a heavy grade; they were unsuited for shunting, because the excessive escape of steam seriously hindered visibility, especially in winter; they tended to derail, and their width made it dangerous when drivers and firemen had to lean out of the cab, as demonstrated by Whitmore's death in 1944.<sup>45</sup>

P.C. Raynor, the Deputy Assistant Secretary for Railways, disagreed with Davies about the Garratt's capacity to derail. Davies asserted that there was evidence of many derailments in Queensland.<sup>46</sup> He denied that union objections were based on a fear of job losses. Indeed, the Union advocated the use of more powerful engines and a broader gauge railway.<sup>47</sup> Certainly, there is no evidence of the Union making sustained criticism of any other engine on the WAGR system, and this also applied to the AFULE in the Eastern States, who, like ASLEF crews, adapted to imported American engines with little complaint. Railway staff involved in preparing and driving the engines testified that ASGs had excessive oil consumption, problems with wheel bearings running hot and more need of mechanical attention than any other engine; they had been involved in shunting mishaps because of faulty steam brakes, and they tore up track.<sup>48</sup>

The divergence in points of view put by the Union and railway officials was starkly evident when Royston Macaulay Evans, the Chief Traffic Manager, gave evidence. Evans asserted that the ASG was 'in every way a safe, economical and satisfactory engine and is the answer to our transport problem of today and in the

immediate future'.<sup>49</sup> Mills reiterated that the engines were 'completely safe'. Although they had been 'completed hastily with little skilled assistance', they were 'regarded as a proud achievement'. He declared that safety had never been overlooked, nor ignored. WAGR had 'an unsurpassed record for safety', with no passenger fatalities. In 1945, Mills claimed, the ASG had lower repair costs than any other mainline engine.<sup>50</sup>

After the Royal Commission finished hearing evidence, several ASG and other types of engines underwent rigorous tests. Justice Wolf and Alex Davies were accompanied by three testing officers and a Commonwealth government representative. Experienced drivers and firemen were chosen to drive the engines. Between January and June 1946, twenty-one trials involved four ASGs and six other types of freight engines over country and metropolitan routes. Overall, the other engines outperformed the ASGs, although several times the testers complained that the engines were poorly prepared for the tests, which Davies strongly denied.<sup>51</sup>

After taking evidence in the Eastern States, Justice Wolf released his report on 3 September 1946. He concluded that the WAGR should not have purchased so many locomotives of 'experimental design', especially as the Commonwealth Land Transport Board knew of their many defects by mid 1944. But, while the purchase was 'an error of judgment', it was 'unthinkable' that such expensive locomotives should be 'thrown on the scrap heap' if they could be made 'roadworthy'. While QR decided to scrap their locomotives,<sup>52</sup> Justice Wolf recommended that the WAGR adopt the same determination as Tasmania's CME 'to make the best of an unsatisfactory position'. He asserted that the locomotives could be made safe for traffic and more efficient in operation, despite finding that they had 'certain features which render [their] operation in some degree dangerous'.<sup>53</sup> Wolf recommended

making thirty-six modifications, including fitting flanges to correct the controversial un-flanged design of the leading and intermediate wheels.<sup>54</sup>

By the end of 1946, WAGR locomotives and rolling stock were in a dire state. Years of neglect occasioned by penurious and short-sighted government policy had been exacerbated by wartime demands. The WAGR faced the prospect of spending £137,000 to correct the defects in their twenty-five Garratts, with additional costs of altering buildings in some depots. This begs the question of why it would not have made more financial sense to purchase new locomotives. The Queensland Government, meanwhile, was expending £450,000 on ten new British-built Beyer-Garratt engines, which they were at pains to stipulate were ‘completely different from the ASGs’.<sup>55</sup>

‘No Garratts – no surrender’

The Triennial Delegates’ Conference of the WALEDF&CU on 21 October 1946 asked the government to withdraw the ASGs from service. A week later, the Union announced that its members would refuse to operate any ASG locomotives from midnight on 4 November. At a compulsory conference in the Arbitration Court on 1 November, Justice Dunphy threatened the union with deregistration if it took strike action.<sup>56</sup> Deregistration would remove the union’s status as the legal representative of its members and open the way for a rival union, the WA Amalgamated Society of Railway Employees, to ‘poach’ members.<sup>57</sup> The ALP’s State Disputes Committee also put pressure on the union, but the ban went into effect. When the Commissioner suspended six members for refusing to work ASGs, the Union went on strike from midnight on Wednesday 6 November.<sup>58</sup> Although a handful of unions supported them, the WALEDF&CU received little sympathy from most of the labour

movement. Premier Wise stated in Parliament that some of the union's leaders were 'allied directly with Communism'.<sup>59</sup> This was a splendid irony, considering that several Union leaders had represented the ALP in Parliament, including Wise's immediate predecessor as Premier.<sup>60</sup> But, as Australia became embroiled in the Cold War politics that were enveloping the rest of world, the ALP entered an internecine conflict that would culminate in a party split. A vocal minority of unions, including the WALEDF&CU, were frustrated by the absence in Western Australia of an independent, non-partisan Trades and Labor Council [TLC]. It was not until 1963 that a politically independent TLC formed in Western Australia, partly as a result of a curious alliance between Communist union officials and those who were members of the Right-Wing Democratic Labour Party that formed after the ALP split in 1955.<sup>61</sup>

The strike not only represented a wider conflict between moderates and militants within the political and industrial branches of the Western Australian labour movement after World War II;<sup>62</sup> its economic impacts were significant: an estimated 90,000 people were thrown out of work, and power cuts had ramifications for industry and commerce.<sup>63</sup> In the Arbitration Court on 12 November, Justice Dunphy began deregistration proceedings against the Union for instigating an illegal strike.<sup>64</sup> Deregistration increased the Union's hostility towards the Arbitration Court, the State ALP and its Disputes Committee. The Union's General Committee resolved on 13 November not to resume negotiations unless the ASGs remained out of service and the suspended men were reinstated. The Union lost its appeal to the Supreme Court against deregistration, which took effect from 18 November. The government offered to appoint an independent engineer within ten days, establish 'an independent, adjudicating authority acceptable to the union' to determine the basis and conditions under which ASGs would operate, and withdraw all penalties from the suspended

men if the Unionists would return to work.<sup>65</sup> But the Union remained adamant that it would be ‘the final arbiter as to whether or not the ASG engines would run’.<sup>66</sup>

Attempts by the Premier to influence the union rank and file made the situation even worse, with the Union closing ranks, and its Midland branch demanding that either the Cabinet resign or the government hold an election. ‘No Garratts – no surrender’ was their blunt message.<sup>67</sup> On 21 November, the full bench of the Arbitration Court fined the Union £100 and each member of the Executive £10 for ‘initiating an unjustifiable strike’.<sup>68</sup>

Yet the dispute ended surprisingly quickly. The Collie Miners Union, whose membership was affected by the strike because much of the WAGR’s coal came from the mines at Collie, arranged for Stipendiary Magistrate W.J. Wallwork, an independent and highly respected negotiator, to act as mediator for the WALEDf&CU. The government accepted Wallwork’s recommendation to appoint a five-member Industrial Board, comprising two union representatives, two technical representatives and a non-technical independent chairperson, to decide the minimum modifications necessary for each ASG before it was returned to traffic, and to oversee implementation of all of the Royal Commissioner’s recommendations. The government also agreed to cease legal proceedings against the Union and support its application for re-registration in the Arbitration Court. Settlement was reached on 22 November, and the Union re-registered.<sup>69</sup> No ASG was returned to traffic until the Midland Workshops had carried out modifications on all twenty-five, which were completed on 7 August 1948.

Problems with Austerity ‘WD’ engines.

Meanwhile, in Britain in December 1947 some Bristol branches of ASLEF threatened to strike over the issue of safety on wartime locomotives. Like the WALED&CU, ASLEF had eschewed direct action during the war, despite not gaining adequate remuneration in a time of prosperity for railway companies. Both ASLEF historians, McKillop and Griffiths, commented on the Railway Staff National Tribunal granting a pathetic one-shilling a week pay rise in 1942 – deemed ‘insulting’ by ASLEF Secretary Bill Allen, when the railways were making revenue in excess of one hundred per cent of their pre-war earnings. But, while McKillop asserted that ‘the war effort had its narrowest escape from disruption’ over the issue, Griffiths stated that ‘a national strike was unthinkable at this juncture’ as ‘no industry more visibly epitomised the mobilisation for war’.<sup>70</sup> Although lacking serious design defects, problems footplate staff experienced with WD engines<sup>71</sup> included the glass breaking on water gauges, resulting in some cases of eye injuries; the driver’s view being obscured by equipment or excessive steam; inadequate weather protection, and difficulties with fire door handles, sanding apparatus and vacuum brakes. Initially, there were problems with the firebox design of 2-8-0 models, which resulted in the drop gate mechanism in the ash pan warping and burning after a build up of ash and clinker. Cracks and failure of the copper firebox tubeplates became common after the war.<sup>72</sup> The executives of the private railway companies had either dismissed union requests for modifications as ‘impractical’ or blamed staff for being ‘unfamiliar’ with the engine, rather than accepting that there was any defect in the design.<sup>73</sup> Yet several months earlier, the Rail Executive had countermanded an order to overhaul the twenty-three remaining heavy freight ‘Austerity’ engines in Britain, the others having been sold overseas.<sup>74</sup> This suggests that they regarded the engines as being not worth the expense of repair.

At a meeting on 14 December, 1947, Bristol No 1 Branch of Great Western Railways footplate staff decided unanimously to refuse to operate Austerity engines after 31 December, as they were tired of receiving 'platitudes and promises' from ASLEF's head office. Members felt that the long-awaited nationalisation of the railways had not changed their circumstances, they were still dealing with same Ministry of Transport, and they were bitterly disappointed. ASLEF Bristol No. 1 branch's position was the opposite of the Western Australian union's. It argued that the government could deploy resources spent building new engines, more profitably in reconditioning 'a score or so of Austerities'. In its December 1947 circular, the Branch demanded:

Are we a Trade Union or a political party? Are we paying contributions to make nationalisation a success at the expense of serious injuries and loss of careers to our Members? The Ministry of Transport made no progress in six months... If an accident should occur, who suffers mental and perhaps physical pain: Head Office, The Ministry of Transport, the CME, or the Labour Government? Neither [sic]. The men who keep saying these engines are not safe. They are the men who will face the Ministry of Transport Inspector, to be criticised and possibly censored for some technical error .... Give us the engines, we will do credit to the trade union and contribute our part to the success of the Labour Government. Ask the Driver who has had the gauge glass break on the road. Ask the fireman who has had a blow on the head with the regulator. Try yourself, to take a fire-iron out of the rack. Get on the footplate and see what visibility you get ...[T]ake two suits of clothing, a face shield and gauntlet gloves if you are going to drive one [of these engines].<sup>75</sup>

Despite this aggressive circular, expressing similar frustrations to those experienced by the ASG footplate staff, no industrial action eventuated. Neither of the histories of ASLEF mentions an industrial dispute over the Austerity engines, while Rowledge makes only a very brief reference to the GWR footplate staff forcing the matter of their grievances ‘to the highest level through the “Machinery of Negotiation”’ but does not state what the outcome was.<sup>76</sup> Of the records sighted by the author, apart from Bristol, only Carmarthen branch referred to the complaint; their Minutes of November and December 1947 and January 1948 mentioned receiving circulars from Bristol No. 1 Branch concerning Austerity engines. The correspondence was noted and ‘commented upon’, but no further action appears to have been taken.<sup>77</sup> This may have been because Carmarthen footplate staff did not work these engines, as appears to be indicated in Rowledge’s location figures.<sup>78</sup> In the absence of any records from Bristol branch and the apparent silence of the Union’s central executive, or the press, on the matter, one is drawn to conclude that no dispute eventuated. All of the WD engines were withdrawn from service in Britain by the end of 1962.<sup>79</sup>

In Western Australia, the Garratts were permanently withdrawn from service in 1951, a decision perhaps made easier by Fred Mills’ early death, at the age of fifty-one years, on 22 June 1949, after an illness attributed to the strain of the 1946 Garratt Royal Commission and two subsequent Royal Commissions into WAGR in 1947.<sup>80</sup> No blame had been laid upon Mills but he must have taken some responsibility for the engine’s many problems.

Outcomes – a comparison between Western Australia, Queensland and Britain

Why were the WA government and the WAGR so insistent that ASGs should remain in service when QR had heeded the complaints of the AFULE? The Commissioner's hostility towards the Commonwealth Land Transport Board undoubtedly helped and Wills felt vindicated in his earlier objection to the locomotives. Conversely, the Western Australian CME, Mills, had designed the engine. Arguably, the WAGR, and in particular CME Mills, had a vested interest in declaring the ASG safe. Mills' reputation as an engineer rested on his ability to refute accusations of poor design and construction. Furthermore, during and after World War II, the WAGR was in difficult financial circumstances, exacerbated by the increased demands of wartime, and were unable to meet production targets for engines and rolling stock. But neither of these reasons was reflected in the reaction of Commissioner J.A. Ellis, who, in reporting to his Minister, rebutted Justice Wolf's criticism of the Railways administration. Ellis claimed that safety was 'hardly an issue' until just before the Royal Commission was appointed; although he admitted that the Union had raised safety issues regarding Fireman Whitmore's death, and the Swan View Tunnel.<sup>81</sup>

Despite Ellis' defence, the most damning evidence against the ASG's roadworthiness appeared in his own figures, which showed that while constituting only 6 per cent of WAGR's locomotive stock, Garratts had been involved in over 10 per cent of main line derailments, almost 11 per cent of yard derailments and 13.5 per cent of all other accidents in the previous three years. More than 50 per cent of WAGR's locomotives were over forty years old;<sup>82</sup> the Garratts were the newest engines in service. Yet, despite this evidence and the finding that Garratts performed poorly compared with similar heavy locomotives used in the Royal Commission trials, WAGR officials continued to re-iterate that these engines were 'safe', 'productive' and a good bargain. Further evidence that cost was a significant factor in

Railways Department decision-making is in Ellis' observation that the Royal Commission's conservative costing of £5,500 per engine for modification, compared favourably with the 'Sudan' locomotives being imported from Britain at £14,000 each, with half the ASG's tractive effort.

Although the WALEDF&CU had not had a lot of support among other unions when it went on strike, in the minds of many unionists the outcome of the Union's deregistration clearly demonstrated an unpalatable truth that they had suspected and accused the Arbitration Court of over several years: it was not always the neutral arbitrator between employer and employee. By the 1940s, the WALEDF&CU was the largest of several dissident unions, with grievances dating from conditions imposed during wartime, which were not rectified with the coming of peace.<sup>83</sup>

Several unions and the ALP's Fremantle District Council called upon the ALP State Executive to demand that the Federal Government, led by former engine driver Ben Chifley, immediately institute long over due wage rises, end wartime rationing of clothing and foodstuffs, and raise the tax free threshold. The State Executive refused, claiming that the necessary steps had already been taken to raise the Basic Wage, and that redressing the other grievances was on the Federal Government's agenda.

The unions took their revenge upon the Wise Labor government, which lost the March 1947 State election, sending Labor into Opposition for the first time in over a decade. The party had been confident of winning the election and defeat was completely unexpected. ALP State Secretary Tom Davies clearly saw union grievances, including the ASG dispute, as a contributing factor in the government's defeat. He wrote that, 'the election campaign was handicapped from the start by lack of support and finance' from the unions – out of a total of £820 in union donations almost half came from the Australian Workers Union – and 'many thousands of

workers, including government employees, had voted against ALP candidates'.<sup>84</sup> Reporting to the ALP State Executive, Davies also alluded to the strike by stating that the party 'could not pay lip service to arbitration, using it on some occasions' and at other times resorting to strike action.<sup>85</sup> Although other factors contributed to the government's fall, the electoral defeat provided a salutary lesson to the ALP of just how much it depended upon its union base for funds and for votes. The swift demise of the ASGs, despite their expensive modifications, indicates a further victory and vindication for the Union. Others have gone further in suggesting that the opposition to the ASGs in both Western Australia and Queensland set back Commonwealth Government attempts to introduce a standard railway gauge in all states,<sup>86</sup> but it is noting that in 1944, when the inefficiency of the nation's rail system and its incapacity to meet wartime demands was most evident, the Australian electorate had rejected a proposal to grant the Commonwealth a number of powers including 'to make laws with respect to the uniformity of railway gauges'.<sup>87</sup>

In contrast, in the Bristol dispute, the ASLEF Central Executive appears to have wanted to avoid embarrassing the newly-elected Labour Government while it was passing the Transport Act that would introduce permanent government ownership of Britain's public transport system. Certainly Clement Atlee's Labour Government wished to avoid being side-tracked by industrial disputes. But unionists were mistaken if they thought that a state-owned system under a Labour government would be markedly different from the privately-owned railways. Nationalisation, according to Strangleman, 'represented a change of legal ownership but was marked by continuity in organizational and managerial structures, and this had important implications for both workers and managers in the industry...'<sup>88</sup> Griffiths noted the appointment of Sir Eustace Missenden, former general manager of the Southern

Railway, as chair of the Railway Executive, and the lack of union representation on the British Transport Commission, which renewed tensions between ASLEF and its rival, the National Union of Railwaymen, as they competed for representation on the various sectional councils.<sup>89</sup> Thus the union had little time to devote to internal strife, and the dissident ASLEF members found themselves without the support of either the Labour Government or their own union. Indeed, the debate regarding the future of industrial action that might have been had in 1947 was in fact held the following year in the pages of the *Locomotive Journal* in the form of the question, ‘How far and how fast should the union go in fighting for its national programme now that the industry is in public ownership?’<sup>90</sup> The two sides of the argument were represented by militants such as E.W. Jackson, who sneered bitterly that unionists were expected now to be ‘very good boys and work very hard to make the railways pay their way before we can ever hope to reach that Utopian dream [which] is fading away like the “Cheshire Cat”, leaving the grin behind as if to remind us that we have been completely fooled,’ and moderates such as Norman McKillop, who chided the militants for their ‘immaturity’.<sup>91</sup> Much wider union support for an ‘unofficial’ dispute that broke out in the northern English depots in 1949, in which one hundred crew members refused to operate a new timetable which would necessitate extra lodging turns<sup>92</sup> suggests that the militant view was gaining precedence, and that the patience which members had awaited the changes they believed would come with peace and nationalisation was exhausted.

In summary, the wartime circumstances in the which the ASGs and the ‘Austerities’ were constructed were quite similar, and although the outcomes were very different, it is suggested that these two cases illustrate the frustrations suffered by unionists during wartime, on the one hand trying to contribute to victory and on

the other fighting to avoid unnecessary loss of wages and conditions – and in these cases, trying to maintain adequate safety standards despite pressure to cope with inferior or unfamiliar equipment . These cases assist our understanding of the pressures that workers, and their union executives, experienced during wartime – such as working in blackout conditions, working longer shifts and foregoing pay rises. These pressures were not immediately alleviated with the coming of peace because of political and economic circumstances in which governments often found themselves after the cessation of hostilities.

Finally, what of the engines at the centre of these disputes? In Britain, despite some objections to Austerity engines expressed initially by rail management and later by some footplate staff, the dispute was brief, localised and disappeared with barely a trace. While, like the ASG, Austerity engines were replaced from the early 1950s in both Europe and Britain, it was largely due the advent of diesel and electric engines; as testimony to their longevity, some 2-10-0s remained in service in Greece until the 1980s.<sup>93</sup> In his history of the Austerity engines, Rowledge writes that these ‘stopgap’ engines were ‘capable of valued service’.<sup>94</sup>

[Fig. 3 here Image of restored 2-10-0 (not attached).]

No such testimony exists for the ASG. Inadequately resourced, incompetently modified from a successful design, and with insufficient safety restrictions placed upon its use, the engine has had few advocates. It is known only for its notorious history of causing a major strike in Western Australia, with severe economic, industrial and political ramifications, as well as accidents, derailments and one fatality. The only surviving ASG is a Victorian-manufactured and operated engine preserved at the Williamstown Railway Museum in Melbourne.<sup>95</sup> It is a sad fate for

the flawed giant of WAGR's steam era. Historian and former rail engineer Richard Hartley observed that the ASG played an essential role in 'keeping the Allies' war effort on the rails ... for a vital six months'. Yet, he concluded, 'those achievements are now almost forgotten and the ASG is recalled with bitter memories of industrial disruption and struggles for safe working conditions'.<sup>96</sup> The WALEDF&CU won a belated victory after a bitter struggle but, with dieselization just around the corner – the first Y and X class diesels arrived in 1953 and 1954 respectively – there would soon be other challenges for the Union, as the era of steam disappeared and with it much of what made the men of the footplate an industrial elite.

## End notes

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<sup>1</sup> I wish to thank the four anonymous peer referees for their advice on revising my paper. I am especially grateful to Associate Professor Robert Lee, of the University of New South Wales, who generously responded to my queries with extensive comments.

<sup>2</sup> Associate Professor Bobbie Oliver lectures in Australian history at Curtin University, Perth, Western Australia.

<sup>3</sup> *Canberra Times*, 27 October 1943.

<sup>4</sup> See, for example, [http://www.comrails.com/sar\\_locos/r\\_c\\_300.html](http://www.comrails.com/sar_locos/r_c_300.html) (item on South Australian Railways commissioning six Garratts in 1952 and scrapping them in 1956.)

<sup>5</sup> See, for example, a heated debate in September 2010 on: [http://www.tonews.com/post/3751922/aus/australian\\_standard\\_garratt\\_a\\_lemon.html](http://www.tonews.com/post/3751922/aus/australian_standard_garratt_a_lemon.html) including the two contrary opinions cited below: ‘I don't believe that the ASG was an unmitigated disaster. None of the design problems were insoluble. For what it is worth, even the best of designs are often beset with "teething troubles", and require some change or modification’. And, ‘If the ASG was so good, why did 3 states then get rid of the ASG quickly, when 2 of these states went on to use Garratts of different design. It is also reported that the ASG was disliked by crews of the TGR. In conclusion, after weighing up the evidence I will agree with Les Brown, one Royal Commission, 3 railway administrations and the crews of 4 states. The ASG was a lemon; count the faults.’

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<sup>6</sup> A Google search for ‘Australian Standard Garratt’ will yield almost 90,000 references, not all informative, accurate or useful, but indicating the amount of ASG material uploaded onto web pages.

<sup>7</sup> Kevin Barry, ‘Labour Divided: The Garratt Strike of 1946’, *Papers in Labour History*, No. 17, (December 1996), pp. 46-67; R. G. Hartley, ‘Midland Junction Workshops: Mechanical engineering and Government policies’, in P. Bertola and B. Oliver (eds), *The Workshops. A History of the Midland Government Railway Workshops* (Crawley, The University of Western Australia Press, 2006), pp. 116-19; Bobbie Oliver, *Unity is Strength. A history of the Australian Labor Party and the Trades and Labor Council in Western Australia, 1899–1999*, (Bentley, API Network, 2003), pp 177 ff.

<sup>8</sup> For example, such diverse British railway histories as: Alfred Williams’ *Life in a Railway Factory* (Stroud, Alfred Sutton, 1915, reprinted 1992) and J.W.P. Rowledge’s *Austerity 2-8-0s & 2-10-0s* (Shepperton, Ian Allen Ltd, 1987) make barely any reference to unionism, while Diane Drummond’s *Crewe. Railway Town, Company and People, 1840-1914* (Aldershot, Scolar Press, 1995) observes (p. 37) that ‘an institutional consideration of trade unionism yields little’ because there were few strikes and unions were moderate. Philip Bagwell’s *Doncaster. Town of Train Makers, 1853-1990* (Doncaster, Doncaster Books, 1991), refers briefly to each of the unions operating at the railway workshops.

<sup>9</sup> Accounts of the 1917 General Strike include Ian Turner, *Industrial Labour and Politics. The dynamics of the labour movement in Eastern Australia 1900-1921*, (Sydney, Hale & Iremonger, 1965), and Robert Bollard, ‘”The Active Chorus”. The Great Strike of 1917 in Victoria’, *Labour History*, No. 90, (May 2006), pp.77-94. For

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the ‘ten-shilling strike’, see Robert Griffiths, *Driven by ideals: a history of ASLEF*, (Hampstead, ASLEF, 2005), pp. 82-4.

<sup>10</sup> David Day, *John Curtin, a life* (Sydney, HarperCollins, 1999), p. 500.

<sup>11</sup> The Australian Labor Party adopted the American spelling for its title early in the twentieth century, as did the Trades and Labor Council of Western Australia, although British spelling is used for all other uses of ‘labour’.

<sup>12</sup> Bobbie Oliver, ‘ASLEF and the Locomotive Engine Drivers’, Firemen’s and Cleaners’ Union of Western Australia: Some Comparisons and Contrasts in their early development’, (York, Institute of Railway Studies & Transport History, York University, 2009) <<http://www.york.ac.uk/inst/irs/irshome/academic/workpaper.htm>.

<sup>13</sup> In Australia, all major railway systems were State or Federal government-owned until late in the twentieth century. Each state had its own rail gauge, with Queensland and Western Australia laying the narrowest gauge of 3 feet 6 inches. ASG locomotives were also used on some narrow gauge lines in other states, such as the Portland Cement line at Geelong, near Melbourne in Victoria. See <http://www.railgeelong.com/lineguide/fyansford/private-railway>, accessed 26 August 2011.

<sup>14</sup> Hartley, ‘Midland Junction Workshops’, p. 117.

<sup>15</sup> Alan Whiting, ‘Queensland v. The Commonwealth: The State’s Objection to the Australian Standard Garratt Programme’, *Royal Historical Society of Queensland Journal*, volume XIV, No. 1, (February 1990), p. 12.

<sup>16</sup> State Record Office of Western Australia [SROWA], WAGR Collection, CONS 1389, ‘Royal Commission on ASG Engines Parts I-V’, Part I, File no. 17616/45, Justice Wolff, *Report of the Royal Commissioner*, Royal Commission into Australian

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Standard Garratt Locomotives 1946' [hereafter Wolff, *Royal Commission Report*], pp. 6.

<sup>17</sup> Hartley, 'Midland Junction Workshops', pp. 113-4.

<sup>18</sup> Wolff, *Royal Commission Report*, pp. 6.

<sup>19</sup> *Ibid.*

<sup>20</sup> *Ibid.*, pp. 8-10.

<sup>21</sup> *Ibid.*, p. 8.

<sup>22</sup> *Canberra Times*, 1 May 1944.

<sup>23</sup> H. C. B. Rogers, *The Last steam locomotive engineer: R.A. Riddles CBE*, (London, George Allen & Unwin, 1970), [www.steamindex.com/loco/warloco.html](http://www.steamindex.com/loco/warloco.html) accessed 25 November 2009 [hereafter *The Last steam locomotive engineer*], pp. 118 ff; Rowledge, *Austerity 2-8-0s & 2-10-0s*, pp. 8 ff.

<sup>24</sup> Figures provided in the following two sources indicate similarity in tractive effort, and height of the engine, although the Garratt, weighing 119 imperial tons was much heavier than the WD (78 tons 6 cwt). See 'The Riddles "Austerity" (WD) 2-10-0s', *The London & North Eastern Railway (LNER) Encyclopedia*, [http://www.lner/locos/O/WD\\_Austerity.shtml](http://www.lner/locos/O/WD_Austerity.shtml) accessed 14 January 2011; 'Australian Standard Garratt' <http://www.qrig.org/motive-power/locomotives/steam/australian> accessed 14 January 2011.

<sup>25</sup> Eric Fry, 'USA Class S160 2-8-0 locomotives on the Great Eastern, 1943 to 1944', *Great Eastern Journal*, 137 (January 2009), n. p. The author thanks Bill King, Great Eastern Railway Society, for this reference.

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- <sup>26</sup> J. L. M. Moore, 'Report on the Accident at Thurston on 12 January 1944', <http://www.railwaysarchive.co.uk/eventsummary.php?eventID=1342> accessed 14 January 2011.
- <sup>27</sup> Rowledge, *Austerity 2-8-0's & 2-10-0's*, pp. 32-33.
- <sup>28</sup> Norman McKillop, *The Lighted Flame. A history of the Associated Society of Locomotive Engineers and Firemen*, (London: Thomas Nelson, 1950), p. 294.
- <sup>29</sup> Wolff, *Royal Commission Report*, pp. 10-11.
- <sup>30</sup> Hartley, 'Midland Junction Workshops', p. 117; newspaper cutting, unidentified, dated 8 March 1944, in J. S. Battye Library of Western Australian History, Perth, WA, Records of the WA Locomotive Engine Drivers', Firemen's and Cleaners' Union, MN 2472, Accession no. 6526A, [hereafter WALEDF&CU Papers], Item no. 9 'Accidents 1920-44'.
- <sup>31</sup> WALEDF&CU Papers, Item no. 375 'Long Hours'; File 1, '1943-47', Circular to All Branch Secretaries and Stewards.
- <sup>32</sup> WALEDF&CU Papers, Item no. 9, 'Accidents 1920-44', 'Statement by Driver Robert Stafford' and related correspondence.
- <sup>33</sup> Coroner's Report, in *ibid.*
- <sup>34</sup> Oliver, *Unity is Strength, passim*. The Arbitration Court was established at Federation as a compulsory arbiter in disputes between employer and worker (represented by the union) and as a determinant of wages. There were Courts in each State and a Commonwealth Court.
- <sup>35</sup> Wise to Webb, 8 October 1945 in Royal Commission on Garratt Engines, Part 1'; also Wolff, *Royal Commission Report*, pp. 11.

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- <sup>36</sup> Notes of a discussion between Assistant Commissioner (Mr Tomlinson), the Chief Civil Engineer, the Chief Mechanical Engineer, the Deputy Departmental Secretary and the Superintendent of Loco Running, 10 October 1945, in WALEDF&CU Papers, Item no. 9, 'Accidents 1920-44'.
- <sup>37</sup> *Sydney Morning Herald*, 12 August 1947.
- <sup>38</sup> Whiting, 'Queensland v. The Commonwealth', pp. 1-16.
- <sup>39</sup> *West Australian*, 11 October 1945.
- <sup>40</sup> 'Royal Commission on Garratt Engines, Part 1', Wise to Commissioner, 10 October 1945.
- <sup>41</sup> Webb to Wise, 16 October 1945, in *ibid.*
- <sup>42</sup> Webb to Commissioner, 22 October 1945, and replies from Deputy Secretary for Railways (C. Reymond), 23 and 25 October 1945, in *ibid.*
- <sup>43</sup> Deputy Secretary of Railways to Webb, 12 December 1945, in *ibid.*
- <sup>44</sup> Minute to Commissioner, 21 December 1945, in *ibid.*
- <sup>45</sup> *West Australian*, 6 November 1945
- <sup>46</sup> Davies' contention was confirmed by evidence collected in Queensland by Justice Wolf. See also Whiting, 'Queensland v. The Commonwealth', p. 13.
- <sup>47</sup> *West Australian*, 9 November 1945.
- <sup>48</sup> *West Australian*, 10 November 1945.
- <sup>49</sup> *West Australian*, 21 November 1945.
- <sup>50</sup> *West Australian*, 28 & 29 November, 3 December 1945.
- <sup>51</sup> Wolff, *Royal Commission Report*, Appendix IX, Part 4, Summary of Test Results; Alexander Davies, Report to the Royal Commission, 25 July, 1946, in 'Royal Commission on Australian Standard Garratt Engines, Part V', pp. 1-5.

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<sup>52</sup> According to Whiting, 'Queensland v. The Commonwealth', p. 14, 'all the available evidence indicates that the Commonwealth never received payment for the Queensland ASGs, the resultant loss to the Commonwealth on the entire project running into millions of pounds'.

<sup>53</sup> Wolf, *Garratt Royal Commission*, Part IX, General Conclusions, pp. 52-3.

<sup>54</sup> *Ibid.* pp. 54-5. These modifications included: re-designing the bogie unit; lowering the tanks on both units to improve visibility; substituting a power reverse apparatus in place of the reversing screw and a live steam injector for the exhaust steam injector; providing manual control of the regulator, and fitting bunker doors and ventilators in cab roofs.

<sup>55</sup> *Sydney Morning Herald*, 12 August 1947.

<sup>56</sup> Cited in Barry, 'Labour Divided', pp. 51-2; also *Westralian Worker*, 22 November 1946; Webb to Marshall, 8 October 1946 in 'Royal Commission on Garratt Engines, Part V'.

<sup>57</sup> Unlike ASLEF's rival union, the National Union of Railwaymen, WAASRE consisted only of non-footplate railway employees, but there had been moves to amalgamate the two unions in the past.

<sup>58</sup> Barry, 'Labour Divided', pp.51-2; *Westralian Worker*, 22 November 1946.

<sup>59</sup> *Western Australian Parliamentary Debates*, vol. 118, (1946), p. 1855.

<sup>60</sup> John Willcock, Premier 1936-45; J.J. Kenneally MLA 1927-36 and H. Styants MLA 1936-56. See Oliver, *Unity is Strength*, passim.

<sup>61</sup> *Ibid*, chapters 9 and 10.

<sup>62</sup> Barry, 'Labour Divided', p. 46; Oliver, *Unity is Strength*, chapter 9.

<sup>63</sup> *Westralian Worker*, 22 November 1946.

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<sup>64</sup> Barry, 'Labor Divided', p. 58.

<sup>65</sup> *Westralian Worker*, 22 November 1946; Barry, 'Labour Divided', p. 59.

<sup>66</sup> *Westralian Worker*, 22 November 1946.

<sup>67</sup> WALEDF&CU Midland Branch Minutes, 18 November 1946, cited by Barry, p.

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<sup>68</sup> *West Australian*, 22 November 1946.

<sup>69</sup> Barry, 'Labor Divided', pp. 61-62; *Westralian Worker*, 22 November 1946.

<sup>70</sup> McKillop, *The Lighted Flame*, p. 287; Griffiths, *Driven by Ideals*. p. 148.

<sup>71</sup> Unfortunately, it is often unclear from these reports whether 2-8-0 or 2-10-0 engines are being referred to.

<sup>72</sup> 'The Riddles 07 (WA) "Austerity" 2-8-0s' <http://www.lner.info/locos/O/o7.shtml>, accessed 7 September 2011.

<sup>73</sup> Carmarthenshire County Archives, ASLEF Carmarthenshire branch records 2208-4006, 3/24 General Correspondence 1940-49, Circulars regarding 'Austerity Engines' [12 & 22 December 1947] and the various problems that need fixing [hereafter ASLEF Carmarthenshire branch records]. See also Rowledge, *Austerity 2-8-0s & 2-10-0s*, p. 83.

<sup>74</sup> *Ibid*, p. 84.

<sup>75</sup> ASLEF Bristol No. 1 'Austerity engine & HO Circular 112, December 1947, ASLEF Carmarthenshire branch records.

<sup>76</sup> Rowledge, *Austerity 2-8-0s & 2-10-0s*, p. 83.

<sup>77</sup> Carmarthenshire ASLEF records, Minutes 1945-48, 30 November and 28 December 1947, and 25 January 1948.

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- <sup>78</sup> Rowledge, *Austerity 2-8-0s & 2-10-0s*, ‘Locomotives loaned to GWR 9/1946–12/1947 (89)’, p. 79.
- <sup>79</sup> *Ibid.*, p. 133.
- <sup>80</sup> Hartley, ‘Midland Junction Workshops’, pp. 117, 118 and 120.
- <sup>81</sup> Ellis to Marshall, 18 page report in response to findings by Royal Commissioner Justice Wolff, in ‘Royal Commission on ASG Engines, Part IV’, especially pp. 4-6, 13.
- <sup>82</sup> The accident rates and ages of locomotives were provided in a table in Ellis’ report and in a document tendered by Railways Commissioner to President, Arbitration Court, 31 October 1946, in *ibid.* The author calculated percentages from the figures.
- <sup>83</sup> Oliver, *Unity is Strength*, p. 179.
- <sup>84</sup> *Ibid.*, p. 181.
- <sup>85</sup> Tom Davies, Report to the State Executive, cited in Barry, ‘Labor Divided’, p. 64.
- <sup>86</sup> Whiting, ‘Queensland v. The Commonwealth’, p. 15; also Associate Professor Robert Lee, email to the author 6 September 2011.
- <sup>87</sup> Vamplew, W, ed. *Australians Historical Statistics* (Melbourne, Fairfax, Syme & Weldon, 1988), Table POL. 29-37 ‘National Referendums, Australia 1906-1977’.
- <sup>88</sup> Tim Strangleman, *Work Identity at the End of the Line? Privatisation and Culture Change in the UK Rail Industry*, (Basingstoke, Palgrave Macmillan, 2004), pp. 43-4.
- <sup>89</sup> Griffiths, *Driven by Ideals*, pp. 158-9.
- <sup>90</sup> *Ibid.*, p. 163.
- <sup>91</sup> *Ibid.*
- <sup>92</sup> *Ibid.*

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<sup>93</sup> Rowledge, *Austerity 2-8-0s & 2-10-0s*, p. 138. Two of these were returned to Britain in 1984, and restored.

<sup>94</sup> *Ibid*, p. 7.

<sup>95</sup> <http://www.steamlocomotive.com/australia/vic/> accessed 4 March 2011.

<sup>96</sup> Hartley, 'Midland Junction Workshops', p. 119.