

*BALLAARAT in the manufacturer's yard, 1871.*

*Photo: Rail Heritage WA Collection, P4717*

## **BALLAARAT – its story**

*by Philippa Rogers*

The locomotive *BALLAARAT* displayed in Victoria Square at Busselton has received many references in *Light Railways* over the years, but a detailed examination of its history has been lacking. This article, based on extensive research in archives, newspapers and other published material, brings the history of this important locomotive together from 1871 though to its current status at Busselton.

### **The railway**

In August 1871 at Lockeville, just outside the township of Busselton, Western Australia's first steam locomotive entered service.<sup>1</sup> The engine, painted black, had cost £780 plus the cost of shipping from Melbourne.<sup>2</sup> It had been intended to land the locomotive before August that year but the winter seas and rough conditions on the Busselton coast delayed its landing. Local residents were ready to celebrate its arrival on 1 June (Foundation Day) but had to wait until the brigantine *Nightingale* delivered it in late August 1871. The first driver of *BALLAARAT* has been named as a Mr Jackson who took charge of it for five years after the Western Australian Timber Company's (WATC) engineer, Mr Watson, who drove it upon arrival, returned to Melbourne.<sup>3</sup>

The 3ft 6in railway was established for the WATC, a syndicate of Victorian investors, and was a consequence of the granting of a timber concession of 181,500 acres. This was the first such concession taken up following Governor Weld's change in policy that permitted large timber concessions on a long-term basis, thus encouraging outside capital. The railway ran between the port of Lockeville, where the WATC's jetty and mill was built, 18km inland to Yoganup. Though it was completed in June 1871, the railway was initially operated by horses because of the difficulties in the landing of the locomotive.

### **Locomotive construction**

A contemporary (March 1871) Victorian newspaper report from Ballarat says:

*A very interesting ceremony took place at Mr James Hunt's Victoria Foundry, Armstrong St, this forenoon, being the christening of a locomotive engine made by Mr Hunt for the Western Australian Timber Company. The ceremony was performed in orthodox fashion by Mr McPherson, the Mayor of Melbourne, a large number of gentlemen and workmen being present. ... The engine had been fixed up on blocks to keep the wheels off the ground, and steam got up and it was set to work. ... It was designed by Mr G Robinson, the general foreman of the Victoria Foundry. ... Mr Hunt says he would have no difficulty in making the largest sized locomotives for our colonial railways as cheaply as they could be imported, if only the material were allowed to enter the colony duty free.*<sup>4</sup>

The same newspaper article gave the locomotive's specifications as:

*... Has two 7in cylinders, of 3ft 6in gauge with coupled wheels, is 8 tons weight and 16 hp nominal but will draw as much as 60 horse actually and is made for iron rails 12 to 15 miles in length.*

The first locomotive built in Australia had been constructed in haste in 1854, as the first railway was almost ready for opening but the locomotives had not arrived from England.<sup>5</sup> It was constructed in just ten weeks and did not manage to run for even three months before being declared unfit for service. As a consequence trains on the Melbourne and Hobson's Bay Railway were suspended for two months until the ordered locomotives arrived. 'Experimental' would probably be the best description for this broad gauge steam locomotive that operated for just a few weeks.

The first steam locomotive constructed in Ballarat had been built by Hunt & Opie and was completed in 1861.<sup>6</sup> It was a strange contraption designed by James Davies to operate on wooden rails using his patent system of guide wheels. Named *LADY BARKLY*, the locomotive was demonstrated to Australian railway interests, without any interested purchaser

coming forward, so Davies exported it to New Zealand in 1863, where he had convinced officials in the Province of Southland to construct a standard gauge wooden-railed railway — the Oreti Railway — to his design. Export to New Zealand proved to be a winner for Davies as he received orders from the Oreti Railway for two more powerful locomotives to be built in Ballaarat to his design by the Soho Foundry in 1864. Unfortunately they were no more successful than the diminutive *LADY BARKLY* and the railway closed in 1867.<sup>7</sup> The construction of the 0-4-0WT locomotive by the Victoria Foundry for the Western Australian Timber Company in 1871 was the commencement of many years of commercial locomotive building by the local foundries. It was the first locomotive built in Ballarat for Australian use, the first locomotive in WA, and the first of 3ft 6in gauge to be manufactured in Australia. It was named *BALLAARAT* to commemorate the town of its manufacture and used the original spelling for that centre.

Of interest is that the second locomotive in WA was also built by a Ballaarat foundry, this time by the Phoenix Foundry Company, which was to dominate locomotive construction in that centre.<sup>8</sup> Named *GOVERNOR WELD*, this locomotive started work in 1872 for the Rockingham & Jarrah Co of WA. Unfortunately it is no longer in existence. A number of writers, including some correspondents in official files, have stated that *BALLAARAT* and *GOVERNOR WELD* were the same locomotive and that just a name change took place. However records of the Ballaarat foundries and the fact that the locomotives were used by different companies at the same time are convincing evidence that the two locomotives are exactly that — two different locomotives.

### The WA Timber Company

The WATC railway continued to grow, reaching 30km in length and two extra mills were built. In 1877, there were reports that the Lockeville jetty was in a poor state of repair and the locomotive was found to be in a dilapidated condition.<sup>9</sup> The company was in financial difficulties by mid 1887 and

the mills closed. No way out of the difficulty was found and so on 2 June 1888 all the WATC assets were auctioned.<sup>10</sup>

MC Davies, Herbert Davies and Mr Butler (Karridale resident engineer) went to Busselton on 3 July 1890 with the intention of inspecting the locomotive *BALLAARAT* at the WA Timber Company. It was reported that they intended to buy it and run it on the railway lines at Karridale and Boranup.<sup>11</sup> As the locomotive remained in situ, it appears that it was found by them to be unsuitable for their purposes.

Due to complications in transferring the WATC's timber concessions a return to operations at Lockeville did not occur until 1893 but even then the operations were not to last. The railway, including the locomotive *BALLAARAT*, was abandoned. The WA Government was the next owner, purchasing the land, railway, mills and machinery as well as the timber concession in May 1895. This was an unusual move for the government, but was the result of a potential problem created when it was realised that the timber concession granted 2000 acres for each mile of railway built but did not say where the concession could be claimed.<sup>12</sup> With the gold boom underway in the Eastern Goldfields, the government could not afford for the concession to be claimed in that area.

In November 1897, the timber concession was passed to the Jarrah Wood and Saw Mills Company and it seems that *BALLAARAT* was just stored in a shed at Lockeville. Unfortunately c1900 the shed caught fire and the locomotive was badly damaged.

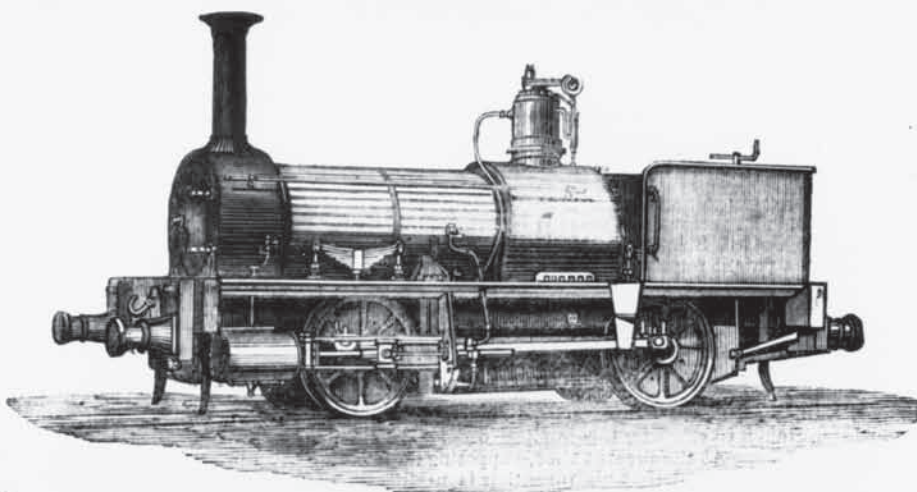
### BALLAARAT – after the fire and out of service

By 1900 *BALLAARAT* had been modified from its original form. The water for its boiler was originally held in a well tank but, with a demand for more water and fuel than the locomotive could carry, a four-wheel tender had been constructed. The footplate was shortened by 12 inches, possibly to facilitate the tender, and the cab moved forward. Entry to the cab was then from the side rear steps, rather than from

## LOCOMOTIVE ENGINE FOR THE THREE FEET SIX INCH GAUGE.

BUILT BY MR. J. HUNT, VICTORIA FOUNDRY AND IRONWORKS, BALLARAT.

IN the annexed engraving we illustrate a neat little four-wheel tank locomotive for a 3ft. 6in. gauge railway belonging to the Western Australian Timber Company, manufactured by Mr. Jas. Hunt, of the Victoria Foundry, Ballarat, and designed by Mr. J. Robinson. The following are the principal dimensions:—Diameter of cylinders, 7in.; stroke, 1ft. 2in.; centre to centre of cylinders, 5ft.; diameter of wheels, 3ft.; wheel base, 8ft. 4in.; length over buffer beams, 16ft. 9in.; height of draw bar, 2ft. 6in.; boiler barrel, 6ft.; diameter of barrel, 2ft. 9in. height of centre above rail, 4ft. 6in.; length of fire-box, 3ft. 4in.; width of fire-box inside frame, 2ft. 11in.; number of tubes, 60; diameter 2in.; tube plates,  $\frac{3}{16}$ in. and  $\frac{1}{4}$ in.; links and pins all steel; boiler all Lowmoor,  $\frac{3}{16}$ in. and  $\frac{1}{8}$ in.; heating surface, about 200ft.; capacity of tanks under frame, 200 gallons. Fuel, wood; foot-plate room inside fence, 1 ton; weight of engine empty, 8 $\frac{1}{2}$  tons; weight in working trim, 10 tons; weight on driving axle, 5 $\frac{1}{2}$  tons; weight on leading, 4 $\frac{1}{2}$  tons. Price delivered in Melbourne, 100 miles from Ballarat, £780. Black finish; working parts first-class fitting; boiler tested to 200 lb.; has been running under steam at 150 lb. for some time. We may state that this



is the first engine ever manufactured in the southern hemisphere for a 3 $\frac{1}{2}$ ft. gauge.

THE BIDDULPH VALLEY BOILER EXPLOSION.—On Tuesday Mr. Booth, coroner, concluded the inquest on the bodies of the eight men who were killed by the explosion of a boiler at Biddulph Valley Ironworks, North Staffordshire, on the 28th of June. After evidence had been given that the usual working pressure of

A contemporary newspaper article on the subject of the locomotive BALLAARAT.

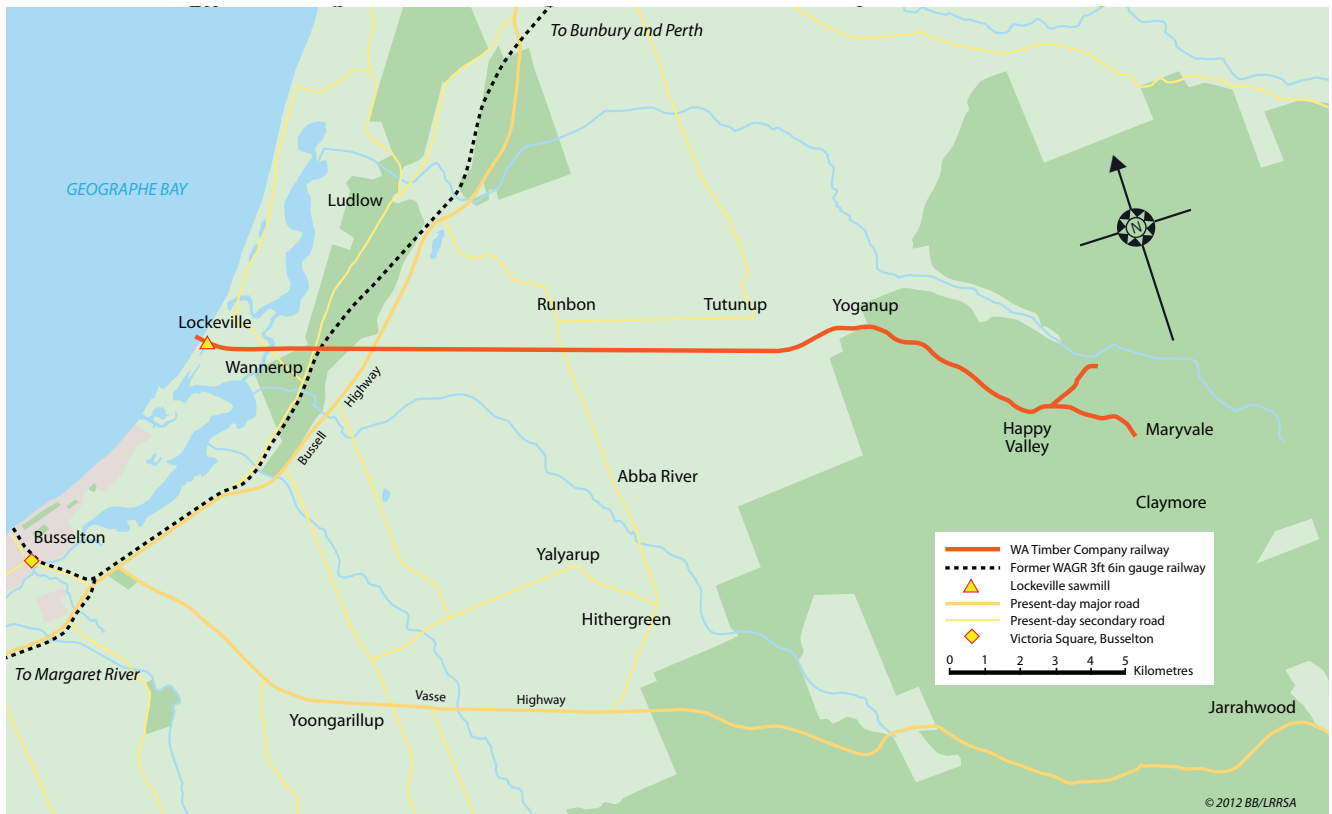


*BALLAARAT in operation with an early home-built tender. This was later replaced by a more sophisticated metal-bodied example, though the under frame was timber. A hand coloured version of this image is on display at the Railway Museum in Bassendean, and cites the date as 1875. Photo: WAGR*

the front alongside the firebox. Other modifications made included replacing the crosshead pump with one driven from an eccentric on the driving axle (as can be seen from photos of *BALLAARAT* after the fire) and fitting a spark-arrestor chimney (photographs show this clearly).

After the fire came an ongoing campaign of concern, with very little outcome until 1937, to see *BALLAARAT*

preserved. Mr Jull, Department of Public Works, wrote on 9 January 1901 to Mr Woodward, Director of the WA Museum and Art Gallery suggesting that *BALLAARAT* as 'the first built locomotive in Australia' and first that ran in WA may 'prove of considerable interest to some of your visitors'.<sup>13</sup> He indicated that Mr Locke, MLA believed he could obtain the loco free of cost for the museum.





A photograph taken around 1908 at Lockeville, showing the fire-damaged locomotive abandoned on the beach.

Photo: R5237/39 'Old Locomotive at Busselton (1st in WA), Rail Heritage WA Archives

But the concept moved slowly and it wasn't until 6 April 1905 that Mr W George, Commissioner of Railways wrote to the Western Australian Government Railways (WAGR) Chief Mechanical Engineer (CME) saying that he had met with Mr Woodward and is prepared to convey the engine to Perth free provided it is put on a truck on the Government line.<sup>14</sup>

As a consequence WAGR loco foreman Bunbury, compiled a report on *BALLAARAT* on 19 April 1905.<sup>15</sup> He describes the engine as being:

*in a very bad state of preservation, a fire about 5 years ago having destroyed all the woodwork, this includes the buffer beams and cab, consequently all attachments to these parts have fallen away. Wood lagging and boiler cleating are destroyed and most of the boiler mountings have been removed. No makers or engine name or date of construction is visible, the connecting, coupling, eccentric rods and link motion are all complete. The tender is a complete wreck owing to fire having destroyed the wooden framing and buffer beams. Apart from the probability of its being the first locomotive built in Australia, it is not suitable for the purpose required, being from an engineering point of view a very poor specimen of locomotive construction of its period.*

Mr Woodward, Museum Director wrote in May 1905 to the Commissioner of Railways to say 'approve of your suggestion that *BALLAARAT* should be left alone, and that eventually No. 1 or No.3 on the Government Railways should, when its work is finished be sent here.'<sup>16</sup>

On 23 April 1909, H Gregory, Minister for Railways, wrote to the Commissioner asking about the practicability of bringing the first locomotive used in the state to Perth and used for exhibition purposes.<sup>17</sup> Commissioner John Short indicated that: 'I think myself it would be a waste of money to do anything, and I cannot recommend it'.

The following year, after Mr Locke, the Acting Premier (Mr Frank Wilson) wrote to the Chairman of the Museum

and Art Gallery Committee asking whether Ballaarat was of sufficient historical import to spend £50 to £100 to have it removed to Perth. Mr Woodward though indicated that the Committee could not afford to contribute towards this cost.<sup>18</sup>

But the battle continued and in April 1910 the Minister for Railways was requested to ascertain the lowest cost at which the loco could be brought to the museum and put in fair exhibition order. He was told by the Premier that his loco foreman 'appears to have very little sentiment. It is not a question of getting a good specimen of locomotive construction: what has to be considered is the fact that this is alleged to be the first locomotive ever to be constructed in Australia and is in fact the first locomotive that ever ran in Western Australia'.

However it was not until 1914 that the District Locomotive Superintendent from Bunbury was sent to ascertain the condition of *BALLAARAT*. He noted that:<sup>19</sup>

*the front buffer beam of engine was originally of timber and has been destroyed by fire; also there were two longitudinal wooden beams carrying the tender have been partly burnt; they together with the buffer beam could be replaced without difficulty or expense. The engine naturally shows signs of the long exposure but a little cleaning up and a coat of paint would make all the improvement necessary.*

But *BALLAARAT* was to stay there as discussions ceased, possibly due to the outbreak of hostilities in World War 1.

In 1919 the *Sunday Times* reported that: 'Busselton has recently acquired the old steam engine (with tender), which was the first steam locomotive engine to be run in the state'.<sup>20</sup> The paper continued to take an interest in the preservation of *BALLAARAT* and was not impressed by the actions, or rather inactions, of the WA Museum.

On 25 September 1921 it published an article entitled 'The Ballarat. First Locomotive in the West' and said:

*We refer to the 'Ballarat' (sic), the first locomotive to be brought*

to these shores. Forlorn, rusting to decay, with all parts that can be removed souvenired, she stands at Lockeville ... Shipped in parts, the 'Ballarat' was reassembled on these shores, and for many a day she played a prominent part in the infant years of our export trade. ... We understand that some years ago the 'Ballarat' was offered to the controlling authorities of the WA Museum but after consideration (we will not say mature consideration) the offer was declined on the grounds of expense. That this priceless old derelict within six miles of sea and rail should be left at the mercy of the elements and the predatory instinct of the souvenir-hunter because the cost of bringing her Perthwards was too great is a weird commentary on our museum authorities. Relics that have blazed the track of progress should be preserved at all costs.

### The tender

In 1922 the Adelaide Timber Company made the change from horses to steam power at its Wilga mill. It constructed its own locomotive made from a traction engine using second-hand locomotive driving wheels and, though successful, 'Snorting Liz' was slow. Like *BALLAARAT* it also needed a greater water carrying capacity and the solution was the same – add a tender! The tender was not one specially made for the task but was the old tender from *BALLAARAT* that was brought from Lockeville.<sup>21</sup> Sadly, when the mill closed in 1984 all the 'scrap metal' lying around the site was sold, and this included the tender.<sup>22</sup>

In 1925 the Mayor of Busselton, Mr R. Elliot, brought to the notice of Mr McCallum, Minister for Works, that the first locomotive used in WA was lying in Lockeville. The owners made a present of the loco to the Municipality of Busselton, who in turn offered it to the WA Museum. The council had two conditions for the gift to the government: 'that the interesting relic be housed and cared for by the Government and that it shall bear an inscription that it was presented by the people of Busselton and Mr P Reynolds'.<sup>23</sup> (Mr Reynolds was the owner of the land where the locomotive had been abandoned and his property reached to the beach at Lockeville where the original jetty was located.) He also indicated that if the WAGR could find a suitable place to display it then, Busselton would hand over the engine to the Railway Department.

The Commissioner for Railways responded that:

*'If a suitable site were available at the Perth Station it certainly would be an interesting exhibit, particularly in comparison with our later types of engines'. Chief Engineer Ways and Works suggested the location of alongside the pier of the William St overhead bridge*



*BALLAARAT stored at the Midland Workshops.*

*Photo courtesy: Jeff Austin*

*between the main and island platforms at Perth Station. It would then be undercover and could be looked after by the station staff.*<sup>24</sup>

In 1925 when the District Loco Superintendent from Bunbury went to inspect *BALLAARAT* he noted that the tender had been removed — and he could not ascertain where it had gone, yet one assumes that the Shire of Busselton or Mr Reynolds, would have known. As for the locomotive's removal, it was advised that it would need to be carted two miles through heavy sand. A quote of £8 was obtained for this removal but an additional £27 13s 3d was estimated to pay for the labour component of transshipping. This did not include the further cost of preparing the locomotive for exhibition at the Midland Junction Workshops — estimated to be another £150.<sup>25</sup> But on 24 April 1925 the Secretary for Railways gave the instruction to bring the locomotive to the workshops.

### To Midland Junction and Perth

Once an inspection was undertaken at Midland, the estimate of £150 was doubled and so work did not commence. Another report on *BALLAARAT* was prepared, this time by the WAGR Chief Mechanical Engineer, Mr E Evans:

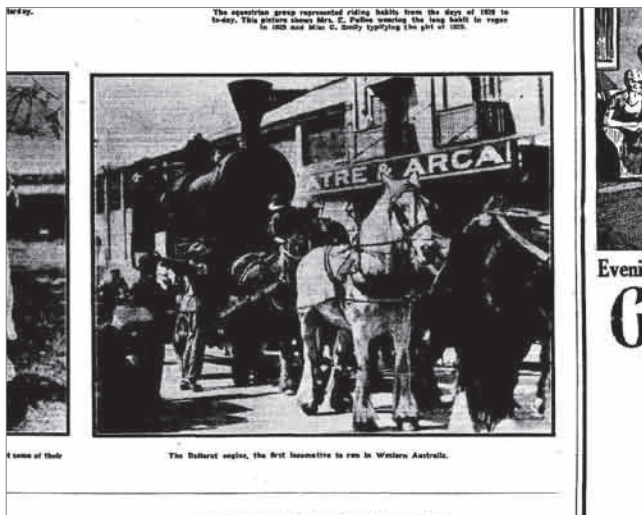
*'The locomotive is in such a dilapidated condition and so many essential parts are missing that will have to be replaced to make it look like a locomotive that it is not altogether possible to lay down a definite estimate for this work until a certain amount of time (and money) is spent to discover the deficiencies. The Workshops Manager, however, advised in July 1925, that to place the boiler on the frame, patch the smokebox and the cab, and renew the missing brasses would — with the necessary painting — absorb fully £150. ... I shall be glad to have instructions on the matter, as we do not want this relic at the Workshops and will be shortly busy with the new locomotives<sup>26</sup> and heavy repairs for the harvest traffic.'*

So on 15 August 1925 the Secretary for Railways wrote to the Busselton town clerk and advised him that 'owing to the very heavy expenditure which would be necessary to fit this locomotive for display purposes it has been decided to abandon this proposal, for the present at all events'. However, he indicated it could be stored at Midland Junction until a more suitable 'resting' place could be found.

But in 1929 the interest in the state's history grew as part of the celebrations for the centenary of its foundation. The Chief Mechanical Engineer was approached by Dr Battye, General Jess and Mr CW Hammond of the State Centenary Committee to allow *BALLAARAT* to be used in the Centenary Celebrations and Pageant. Dr Battye also expressed the opinion that he could probably place the locomotive at the museum upon the conclusion of the celebrations.<sup>27</sup> The Commissioner for Railways supported both of these ideas and presumably a little work, such as placing the boiler on the frame, was undertaken.

The Centenary procession comprised 150 motor vehicles and 15 horse-drawn conveyances and was divided into themed sections. *The West Australian* describes the transport section: 'Introducing it was the first locomotive used in Western Australia. It was made in Ballarat and used in the Vasse District in 1871...'<sup>28</sup> *BALLAARAT* was on one of the horse drawn floats as it passed through the streets. By comparison the first government locomotive, from 1879, was represented by a model as by 1929 it was no longer in existence.

A letter dated 4 November 1929 was sent from Secretary of Premier's Department to Mr Birtwhistle of the *Western Mail* explaining the challenges faced with regard to putting *BALLAARAT* in the WA Museum.<sup>29</sup> Though the railways could send the railway breakdown crane from Midland Junction to Perth to handle the unloading of the locomotive at the



This image, from the *West Australian* newspaper of 3 October 1929, shows BALLAARAT in the Centenary parade on a cart drawn by a team of horses. Some re-assembly had taken place, even if restoration had not.

railway station, the chief difficulty was seen as the handling of the locomotive at the museum. An alternative idea was that the locomotive could be moved by road instead being loaded onto a jinker at Midland Junction Workshops, but again at the museum even primitive equipment was not available. This method of transport would require further money to build a platform and a ramp to the height of the jinker and the roads in the museum grounds were considered to be inadequate to withstand such a load and so the jinker would likely get bogged in sand.

So it seemed that the State Government could not work out how to ensure the relocation of an 8-ton locomotive to the WA Museum. Nevertheless, the Premier's Department promised that they would have it carefully looked after with: 'a view to its preservation until such time as better means can be found for its display'.<sup>30</sup> The Department then wrote to the Secretary for Railways stating that the proposal to move the locomotive to the WA Museum had been abandoned and asked him to make arrangements to preserve the engine to prevent further deterioration whilst another place for its exhibition was found.

## Return to Busselton

Busselton Municipal Council was becoming quite concerned by the on-going lack of progress regarding a new home for BALLAARAT and on 8 March 1934 wrote to the Secretary for Railways asking that 'if the engine is of no more value to your department it is suggested that it is returned to this district where it will be cared for and be of educational interest to the general public'.<sup>31</sup> Contemporary newspaper reports indicate that it was still located at the Midland Junction Workshops.<sup>32</sup>

After referring the matter to the Commissioner for Railways and the Minister it was agreed to return the locomotive to the Busselton district.<sup>33</sup> On 5 April 1934, the Busselton Municipal Council advised the WAGR that it was going into the question of suitably housing the engine and enquired about possible freight concessions for its return. It seems that the engine was in the same condition as when it was sent to Midland, except for the application of a preventative coating to arrest corrosion. As a result of the enquiry the Railways agreed to send the locomotive freight free to Busselton.<sup>34</sup>

But there seemed to be no progress made with regard to the transfer and a Lockeville resident wrote to the *West Australian* newspaper on the matter. The correspondent indicated that

it had been promised that the locomotive would be placed on display at Perth Station. Of interest is his comment that the original set of wheels for the locomotive were worn out and remained at Lockeville.<sup>35</sup> The Secretary for Railways, Mr Tomlinson, was quoted as saying in reply (25 June 1937) that the Railways had received a letter from the Busselton Council saying it was necessary to lay a concrete bed first and that, once provided, the Railways would be notified, but nothing further had been heard from the Council.

The *West Australian* on 7 July 1937 noted that the previous article was referred to at a special meeting of the Busselton Municipal Council. At that meeting it is reported that the mayor spoke of the difficulty in connection with transferring the locomotive from the railway to Victoria Square. It could not be determined whether the locomotive could be moved on its own wheels and 'for various reasons nothing further had been done in the matter'. The outcome was that the Council wrote to the Railway Department to determine its approximate weight, the possibility of its wheels being suitable to allow it to be pulled to the selected site.

On 29 July 1937, by virtue of its then ownership of BALLAARAT, the Secretary for Railways requested more information from the Busselton Council as to future maintenance and location. The Council responded that it would maintain the locomotive in reasonable condition, but were undecided whether this would be by painting or the erection of a shelter. This response was acceptable to the Government and its transfer was approved.<sup>36</sup> (The issue of ownership is not mentioned, though could be considered to be implicit.)

Finally, on Friday 1 October 1937, the locomotive arrived back in the town of Busselton. The Town Clerk accepted delivery of it the following day. On 8 October 1937 the *South-Western News* reported:

*Western Australia's first locomotive – the 'Ballaarat', which has been standing at the Midland Junction Railway yards since being exhibited in Perth during the State's centenary, and which was returned to Busselton last week, was conveyed to its selected site in Victoria Square on Saturday. The handling of the old engine, which weighs in the vicinity of ten tons, presented some difficulty, but its transference to Victoria Square was accomplished with the use of a 40hp caterpillar tractor and a powerful motor truck belonging to Mr Allan Guthrie. The old relic was taken from a truck at the railway ramp and drawn on skids by the tractor to the Kent St crossing. Here some difficulty was experienced as it was feared that the tractor with the heavy load would damage the rails. The old engine was eventually drawn across the line on heavy steel rollers and then dragged along Stanley and Albert Streets to Victoria Square. Some considerable time was taken to get the old relic to its selected site south of the war Memorial, but it was accomplished after much trouble by Mr Guthrie and his men. The transfer of the old engine was watched with keen interest by a number of residents, as considerably ingenuity was required to shift the heavy load.*

Another local paper, the *South-Western Times*, reported on its return but rather than reporting on its arrival in Busselton, focused on the condition of BALLAARAT before the move:

*When viewed at Picton the machine had been cleaned up and some minor repairs effected including the fitting of a new set of wheels and was then in the course of transit to Busselton.*

In an interview Mr Reynolds stated 'that the efficient haulage of the machine was surprising. In comparison with the engine of today this relic used to haul as much and as efficiently as the machines of today'.<sup>37</sup>

Mr Reynolds's affection for BALLAARAT no doubt clouded his judgement about the locomotive power in the state in the 1930s as, whilst some small locomotives were the mainstay of the timber industry, even these would have had a



BALLAARAT 'in Victoria Square, Busselton, c1950s

Photo: Rail Heritage WA Collection

greater tractive effort than BALLAARAT. Also of interest is the report of fitting of a 'new set' of wheels — one set is still clearly marked 1875.

Two years later, in 1939, the Council asked the railways for any information they had about the original colour scheme for the locomotive. In response the railways indicated that the boiler would have been lagged with timber, which was probably varnished or oiled and secured with brass bands. The tender and cab roof were also of timber. They had no record of paint colours but indicated that early WAGR locomotives were black with red lining. However a retired locomotive superintendent suggested when he had seen BALLAARAT c1925 it was painted dark green. This appears to be unlikely and it is more probable that its original black paint livery had deteriorated over time.

But this was not to be the end of the questions about BALLAARAT and its location. In February 1947 its relocation to the WA Museum was once again discussed. This was brought

about by a letter written on 26 February 1947 by JA Cooke, Acting General Secretary of the Australian Labor Party (ALP) to Premier F Wise.<sup>38</sup> The letter advised that the Great Southern Council of the ALP requests that the first steam locomotive used in WA be placed in the WA Museum. The reason was that 'It was considered that this engine is of historical interest, and it is now lying at Busselton, gradually falling into decay'.

In response to the Premier's Department, the Secretary for Railways recommended that: 'In view of the expense to which the Government has been put to in the past in the transfer of the locomotive to Midland Junction and returning it to Busselton, it is recommended that no action be taken particularly as Museum authorities are reluctant to assist in this matter.'

Dr Battye, Principal Librarian in response to question from Premier's office, stated: 'Although it is a relic of the past, and to that extent, interesting, it is so large an exhibit that there would be great difficulty in housing it, especially as it would suffer rapid deterioration unless it were covered in.'

Hence on 30 April 1947 the General Secretary of the State Executive of the ALP was told:

*The museum authorities advise that if the locomotive were transferred to Perth, storage would be a matter of some difficulty and a suitable shed would have to be provided. In view of the existing position regarding building materials, the Government cannot agree at this stage to the erection of such a shed.*

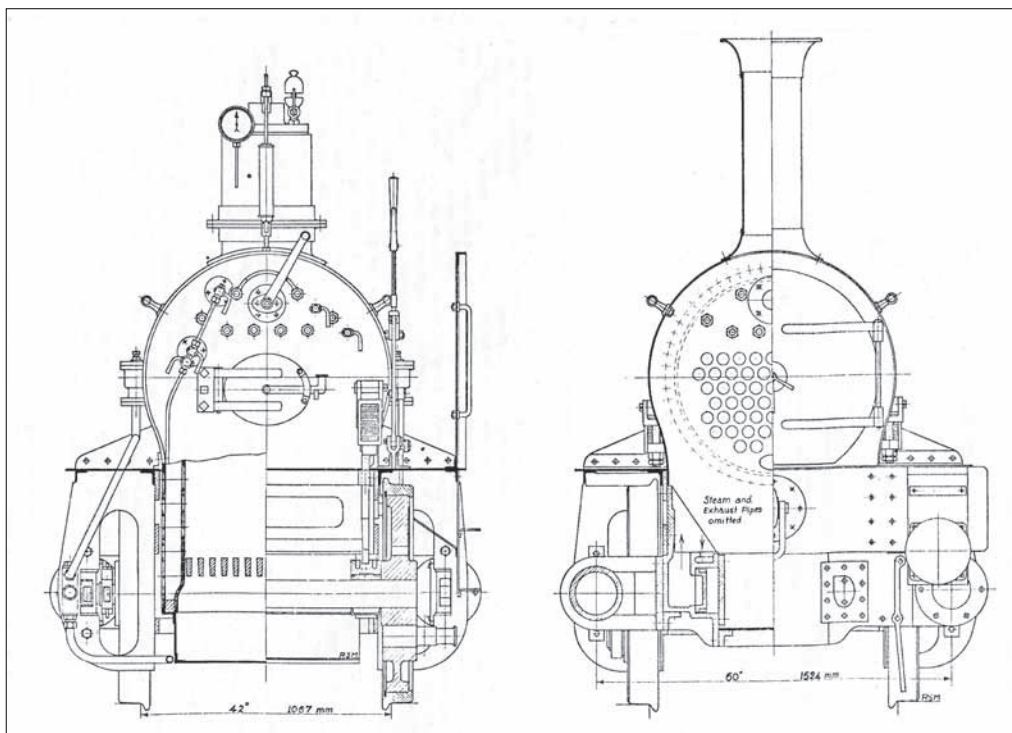
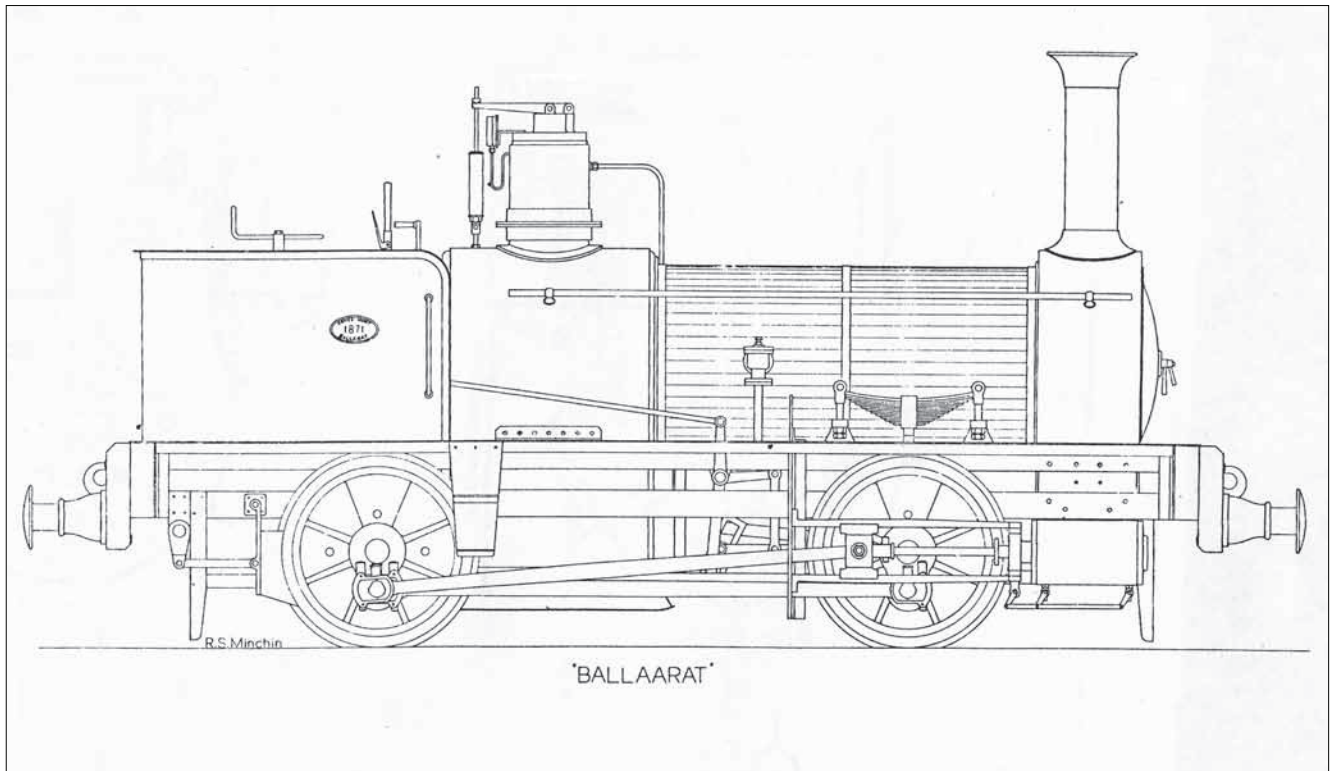
So BALLAARAT remained in Victoria Square, Busselton.

Some years later, on 10 November 1963, the Australian Railway Historical Society (WA Division) (ARHS WA) and the Bunbury and Busselton Historical Societies cooperated in a day of celebration at Wonnerup with about 2000 people in attendance.<sup>39</sup> The purpose of the day was to unveil a plaque to commemorate the opening of the state's first railway. Introduced by Mr S Bishop, President of ARHS WA, the Busselton Shire President, Cr F Jolliffe performed the unveiling ceremony. A special mention was made of Mr P Reynolds, who had made BALLAARAT available for preservation.



Shelter in the form of a roof was later constructed over BALLAARAT. Whilst the fence prevents easy access, children appear to be allowed to play on it — under supervision. January 2011.

Photo: P Rogers



*Front, rear and side elevation drawings of BALLAARAT, as built. Drawn by locomotive engineer Ray Minchin.*

### Technical aspects

The pioneering work in locomotive construction undertaken at Ballarat would no doubt have been influenced by successful designs overseas. Though two locomotives had previously been built in the town, *BALLAARAT* was the first of the 3ft 6in gauge. With its long wheel base and driving axle behind the firebox, the construction reflects features used by the Cumbrian firm of Fletcher, Jennings & Company in their tank locomotive designs. Another characteristic Fletcher, Jennings feature is that of the valve gear being driven by the leading axle instead of the driving axle, using a variety of contemporary link valve gears.

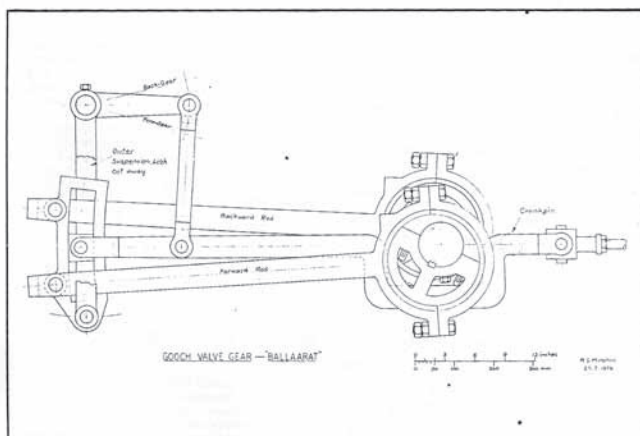
The late Ray Minchin, a Western Australian railway mechanical engineer, described *BALLAARAT* as follows:<sup>40</sup>

*The type of valve gear fitted to BALLAARAT is known as Gooch link motion, developed from the Stephenson link motion by Daniel Gooch, the first locomotive superintendent of the Great Western Railway. Unlike the Stephenson gear, the Gooch reversing link is not lifted for reversing, but is carried on a suspension link which swings about a fixed pivot. Reversing is effected by raising or lowering the die block to which is connected the radius rod.*

*Because the driving axle on BALLAARAT is placed behind the firebox, the two pairs of eccentrics had to be arranged on the leading axle, the reversing links being suspended in front of the firebox.*

Each radius rod, as it reaches forwards to the valve spindle, is guided between its pair of eccentric rods and is cranked downwards to clear the leading axle at the narrow space between the two eccentrics.

Robinson is quite likely to have been influenced by the contemporary products of Fletcher, Jennings as he has, quite understandably, incorporated some elements of these in this design for *BALLAARAT*.



Drawing by locomotive engineer Ray Minchin, showing Gooch Valve Gear on *BALLAARAT*.

Original specifications for *BALLAARAT*, as designed by Mr Jonathon Robinson, general foreman at the Victoria Foundry were:<sup>41</sup>

Rail gauge	3ft 6in	1067mm
Cylinders (2) bore and stroke	7in x 14in	178mm x 356mm
Wheel diameter	3ft	914mm
Wheelbase	8ft 4in	2540mm
Length over buffer beams	16ft 9in	5105mm
Grate area	6 sq ft	0.56 sq m
Working pressure	150lb/sq in	1.03 MPa
Diameter of boiler barrel	2ft 9in	838mm
Height of boiler centre above rail	4ft 6in	1372mm
Heating surface: tubes	190 sq ft	17.65 sq m
firebox	45 sq ft	4.2 sq m
Water capacity	200 gallons	910 litres
Fuel (wood) capacity	1 ton	1 tonne
Total weight (in working order)	10 tons	10.2 tonnes

The safety valve lever from *BALLAARAT*, as displayed in the Railway Museum, Bassendean, 2011. Photo: P Rogers



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