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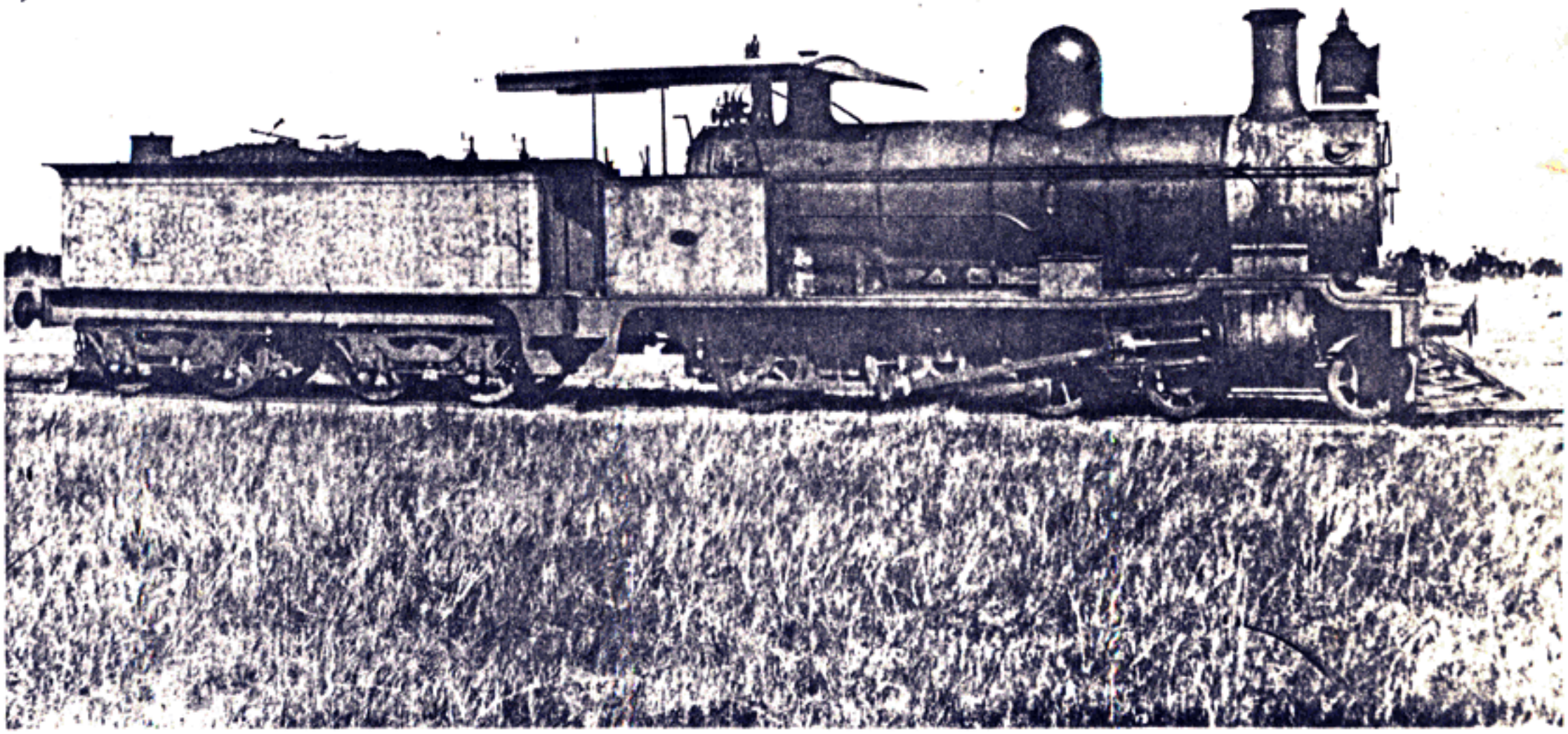


The portrait of No. 219, last of the B15 engines built by Nasmyth Wilson and Coy. shows the original concept of the design. Note the absence of protection for the crew in the rudimentary cab.
(Photo: Queensland Railways)

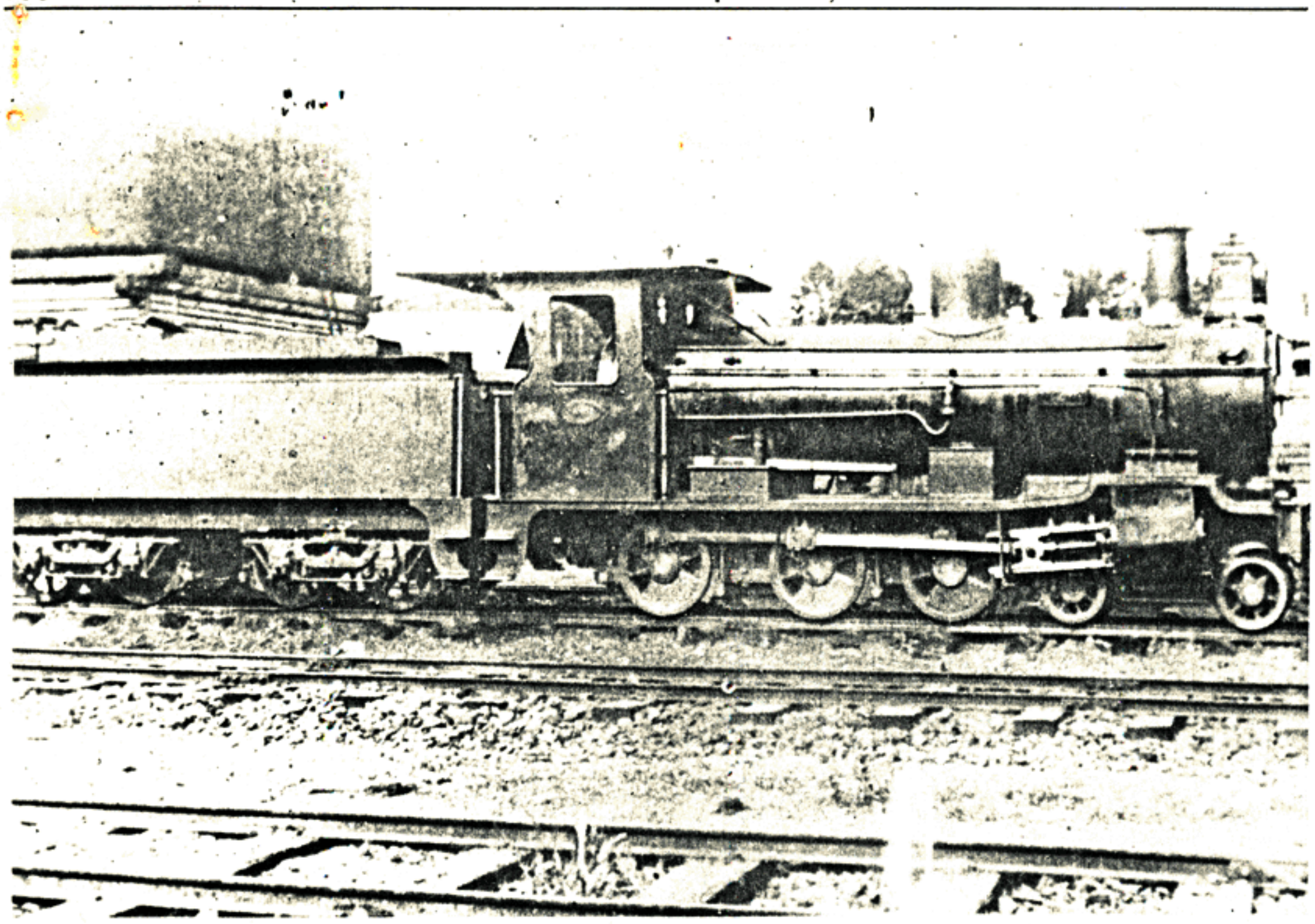
THE B15 CLASS GOODS LOCOMOTIVES (QLD)

by J. Armstrong

Queensland Railways

Within four years of introduction of the F class (B13) engines (see Bn. 482, December, 1977) the question of obtaining more powerful steam locomotives was being discussed by the Traffic and Locomotive branches of both the Southern and Western and the Central Railway. It was 1887, and Locomotive Engineer Horniblow, who had been head of the Mechanical Branch since the advent of the F class, reported that it was likely steps would be taken "shortly" to procure a few locomotives of greater power for the S. & W.R. But traffic in Central Queensland had fallen off to such an extent that there were "at present far more locomotives on that railway than work can be found for", a situation which, though temporary, was confirmed by rollingstock tables for that year showing that at least four were not even used.

Commissioner F. Curnow in his Annual Report for 1888 stated that good progress was being made with locomotives under construction in the colony (which was government policy) but in order to avoid any inconvenience to traffic for want of engine power, it had been decided to invite tenders for "fifteen heavy traffic engines" through



The first batch of B15's built by Evans, Anderson, Phelan and Coy. of Brisbane had more enclosed cabs with rectangular side window openings as this early view of No. 241 shows.
(Photo: G.E. Bond Collection)

the Agent General. An "exceedingly favourable tender" was duly accepted f.o.b. London for £1,599 each, the first five to be delivered in London at the end of April, 1889, the balance of ten by August.

The First Batch

The first locomotives were built by Nasmyth Wilson and Coy. at their Bridgewater Foundry near Manchester and they carried 1889 works numbers 354 to 368.

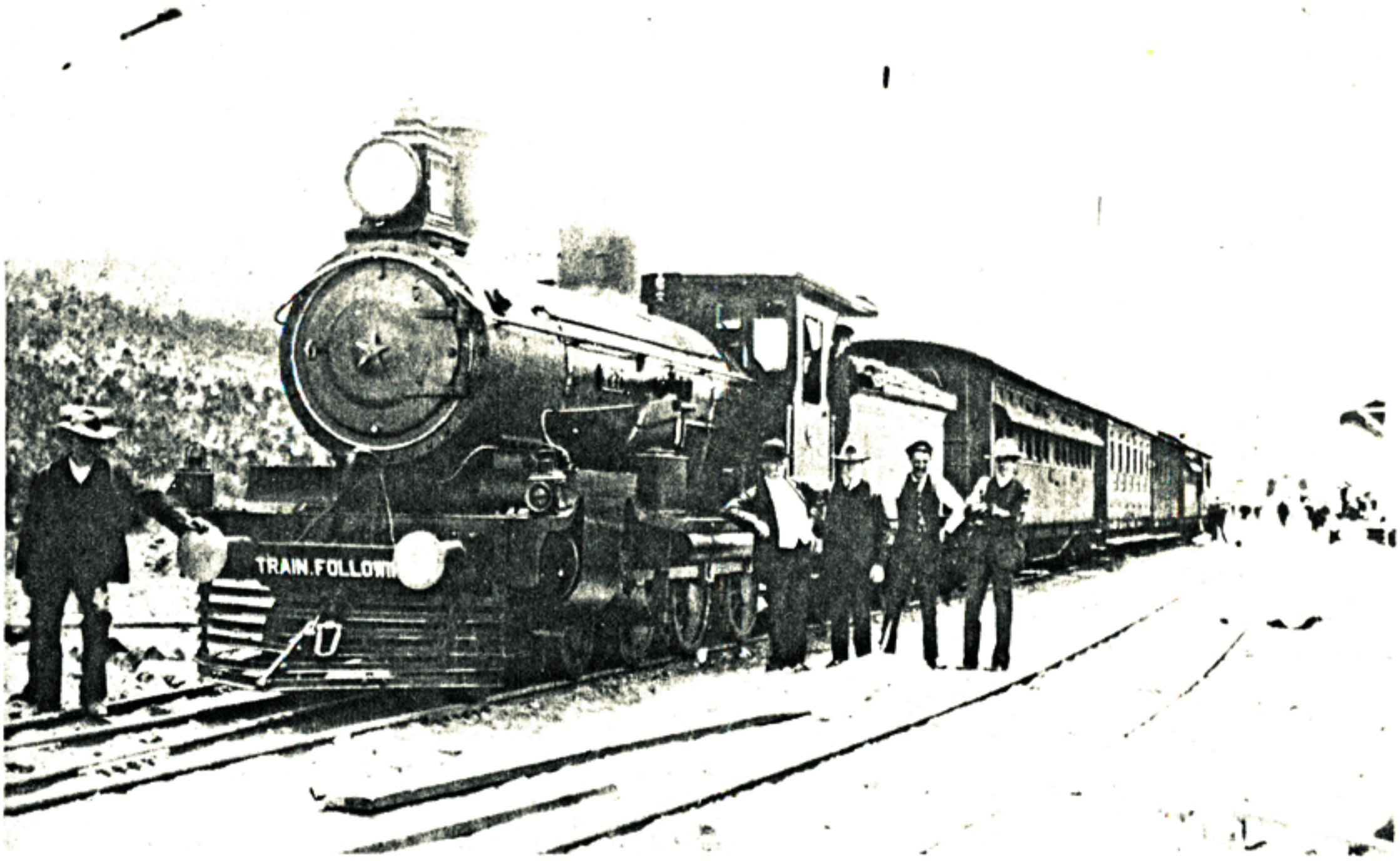
Despite earlier intentions, it was decided to allocate some to each of the three major districts in Queensland. Eight went into service on the S. & W.R., four on the Central Railway (Rockhampton) and three on the Northern Railway (Townsville). All were numbered in one batch instead of being allotted numbers by each district, which had hitherto been normal practice. This innovation was part of administrative changes made in 1889 to centralise railway management, thus treating all existing systems more as part of a State wide enterprise than a collection of individual entities. One good reason for doing this was that the S. & W.R. and the Maryborough and the Bundaberg Railways would shortly be linked together to form what was to become known as the Southern Division.

The fifteen imports were given the following road numbers and allocations:-

Road Nos.	Works Nos.	Allocation
205 - 212	354 - 361	S. & W. Railway
213	362	Central Railway
214 - 216	366 - 368	Central Railway
217 - 219	363 - 365	Northern Railway

It is thought the locomotives on the S. & W.R. were at first known as the "G" class, but as each railway until then had indulged in their own forms of locomotive identification there was obviously a need to standardize and the letter-cum-cylinder diameter method used by the Northern Railway in 1890 was eventually adopted throughout the State, and these new engines became the B15 class. Later, when the passenger B15 (PB15) was introduced they became known as the B15 Goods engines.

Despite the use for which they were intended they were six-coupled machines like the B13 mixed traffic locomotives, and were not quite what the Central Railway officers had advocated (viz;- Baldwin "Consolidations"). In fact, the B15 class could be described as a larger version of the successful B13s and can be compared with them. Differences included separate regulator and safety valve domes mounted on the boiler barrel and firebox respectively, and smaller driving wheels of only 36 inch diameter. The two 15 inch diameter cylinders had a stroke of 20 inches. Inside Stephenson type valve gear, adjusted by Johnson



No. 271 was the second last of these engines built with the rectangular cab window. In this view, thought to have been taken at Herberton, the engine has been fitted with Westinghouse brakes. The "Train Following" board was not uncommon in Queensland and it was carried (usually above the buffer beam) to indicate that a second division running at short notice was following.
(Photo: J.H. Fraser Collection, courtesy G.E. Bond)

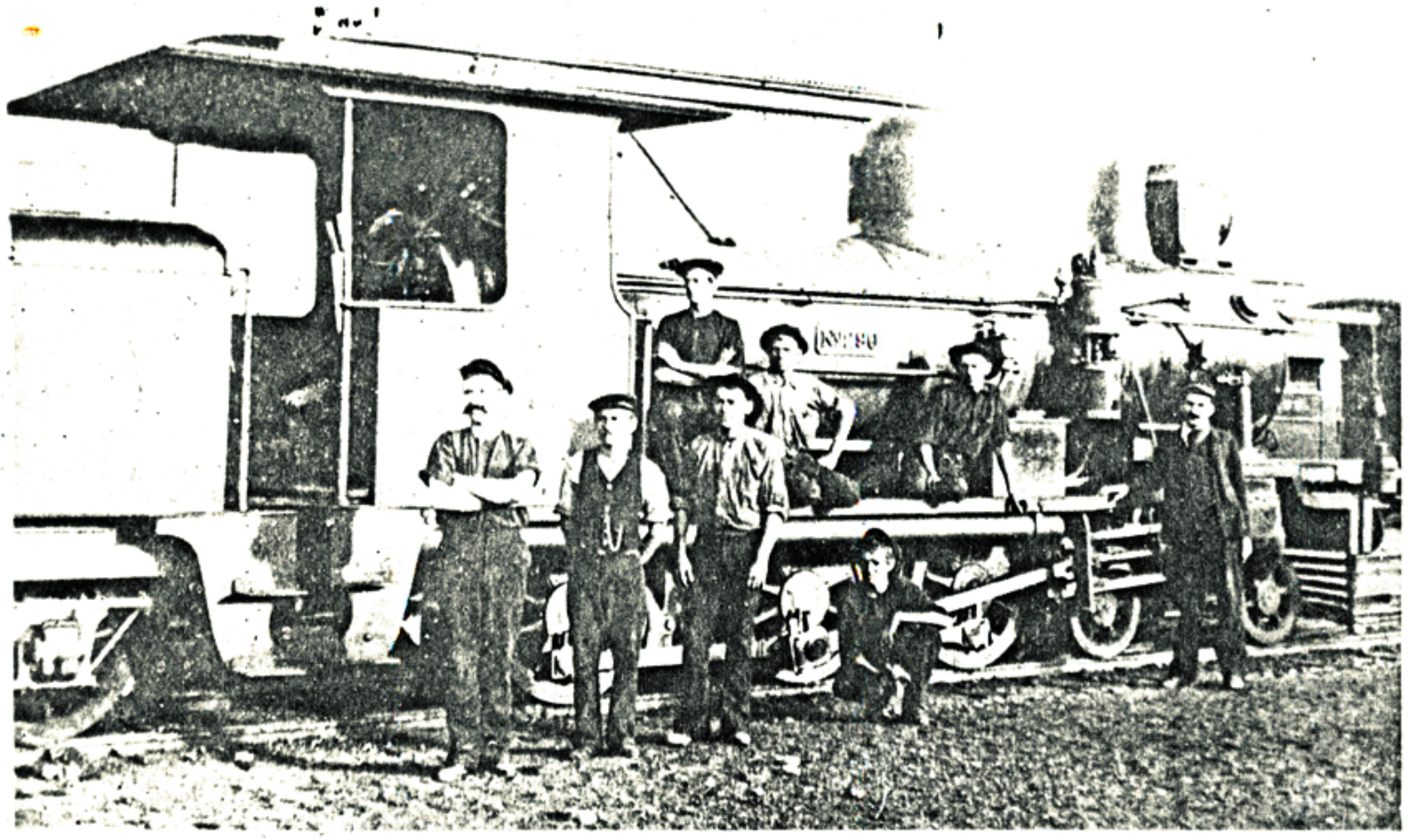
bar lever, actuated slide valves via the usual eccentrics and by means of rocker bars to the steam chests mounted above the cylinders. The boiler carried a working pressure of 120 lbs sq. inch which gave a theoretical tractive effort at 80% boiler pressure of 12,000 lbs. All up weight of the engine was recorded as 27.95 tons and the tender as 23.75 tons.

The B15s were fitted with capped chimneys of fairly large diameter but had cylinders inclined at 1 in 12 to give greater clearance and the running boards were also sloped upwards at the same angle towards the top of the steam chests. The boiler was pitched slightly higher than the earlier engines because of its larger diameter, making them seem much bigger machines, even though overall they were only about 2 feet longer. Their 8 wheel tenders were of roughly similar dimensions as the B13s, and like them, the B15s were built with quite rudimentary cabs comprising a canvas covered wooden roof supported by four metal staunchions. A sloping visor was mounted in front of the roof proper and partial crew protection was afforded by steel plates to waist level and a "lady's waist" front spectacle plate little wider than the dome housing the two 3½ inch Salters safety valves mounted just in front of it and protruding through the roof.

The selection of a 4-6-0 wheel arrangement for a goods engine was probably dictated by the civil engineering branch. Eight coupled engines had been used before, and Horniblow had also been successful in introducing in 1885 the 8D15 tank locomotives known as "Donald Dinnies" after a contemporary famous strong man. But, though the traffic branch wanted more of them, the Chief Engineer objected to their weight. Thus the B15 as built, though having a boiler with 40% more heating surface than the B13, had an adhesive weight only 25% more than it, and 20% less than the tank engines. Yet their theoretical tractive effort was 46% greater then the former and only 7½% less than the latter, a case of having one's cake and eating it!

Second Batch

Up to the time of delivery of the Nasmyth Wilson B15s, all but six locomotives built at the original Ipswich Shops had been imported into Queensland. In 1887 public tenders had been called within the colony for manufacture and delivery of steam locomotives anticipated to be required for the ensuing five year period, with the result that two local firms - Evans, Anderson, Phelan and Coy. of Brisbane, and Messrs Springall and Frost of Ipswich were awarded contracts for a total of 75 units. The former secured the bulk of the work - 25



The ten engines built by the Yorkshire Engine Coy. included No. 290, which is now preserved at Redbank. Taken before conversion, this illustration shows the standard type of cab adopted in 1895. The number plate is located unusually close to the firebox probably because of the W.H. pump's position. (Some of the Nasmyth Wilson engines had theirs relocated on the smokebox sides when they were fitted with air brakes.) *(Photo: S.W. Petford Collection)*

passenger engines and 25 B13s, while the latter were also to supply 25 B13s.

Horniblow reported of the imported goods locomotives in 1890 that "though they are rather heavy for some of the light lines (they) run very steady and take sharp curves admirably; having a roomy firebox and large boiler . . ." His statement that they were "found highly suitable for Queensland coal" seems a little curious, but they were reported to be "on the whole doing excellent work":

It was decided in 1890-91 to vary part of the Evans, Anderson, Phelan B13 contract from fifteen mixed traffic engines to thirteen B15 engines, thus leaving ten B13 of the original contract "to be dealt with as circumstances warrant". This was not so much due to any outstanding success of the B15, for as John Mathieson, the Chief Commissioner, explained in his report for the year, the stoppage of railway construction resulted in orders being in excess of requirements. Attempts had been made, in fact, to cancel some of the B13 contracts outright, but without success. The contractors naturally claimed compensation which the railways equally naturally considered excessive. A change to supply fewer but larger engines was an obvious compromise.

Rail construction, incidentally, had been halted about this time by several factors. Depression, stevedoring and maritime strikes over wool handling, a change in government, floods in the south-east, and the Great shearers' strike were predominant.

The first of the locally built batch of B15s, Nos. 235 and 236, entered trial service on 13th May, 1893 in remarkably quick delivery time considering the company's works at Kangaroo Point had been inundated during the great flood three months earlier. These and the next pair delivered in June were shipped to Rockhampton about August after completing their trial mileage in the Southern Division.

The next two were shipped to Townsville about the end of the year, and of the remaining seven which were delivered by 24th May, 1894, four were sent to the Central Railway.

Eight more B15s were built by the company in lieu of the ten other outstanding B13s of the original contract, these being delivered the following year as Nos. 273 to 280. The initial four were allotted to Townsville and the others went to the Central Division, though there were some transfers made later.

An interesting feature of engines supplied by the firm was that their works were two kilometres from the nearest railway line at Wooloongabba. There-

fore they delivered them two at a time whenever possible, and did so by steaming them along on short lengths of portable track temporarily laid in Main Street and snigged around the engines as they slowly steamed forward!

Although similar to the Nasmyth Wilson products the Brisbane built machines incorporated some improvements. The first batch of thirteen (Nos. 235-244 and 270-272) were fitted with enclosed cabs with four glazed windows on their full width spectacle plates, and an unglazed rectangular window opening at the sides. A different pattern of smokebox door was also incorporated, using four circumferentially mounted bolts to secure it, in lieu of the British style centre pin fastening used on earlier engines.

While the new style door was successful and formed the basic pattern followed with a few modifications during the remainder of the steam era in Queensland, the cab sides were altered on the second batch delivered. On this group, a compromise between open and enclosed sides was reached by sheeting a narrow portion of the leading part of the cabsides to the roof and leaving the remainder open above waist level. The reason for this has not been established, but the author considers the juxtaposition of the side "window" opposite the backplate was such that neither driver nor fireman could comfortably lean out of it to see forwards or rearwards. The cabs on the first batch from this company may not have been felt entirely suitable for Queensland's hot summer weather either.

More significant from an engineering viewpoint was that all the Evans Anderson Phelan engines were fitted with steel instead of iron boilers. These carried a working pressure of 140 lbs sq. inch which lifted tractive effort to 14,000 lbs - but reduced the adhesive factor to 3.3. A Baldwin style steam regulator with pullout arm and toothed quadrant and sector with spring loaded pawl was also incorporated, providing more positive control of regulator openings than the English style pull-over type used on earlier engines. Other changes included provision of Sellars injectors, but two whistles mounted on top of the cab were retained, as were front visors (rather superficially it seems) on each side of the copper cover of the steam dome. The last six built by this firm may also have been fitted with Westinghouse brakes when delivered.

The Evans, Anderson, Phelan and Coy. machines were numbered and allocated as follows:-

Road Nos.	Builder's No. and Year	Allocation
235 - 238	26 - 29 of 1893	Central Railway
239 - 240	30 - 31 of 1893	Northern Railway
241 - 244	32 - 35 of 1893	Southern Division
270 - 272	36 - 38 of 1894	Southern Division
273 - 276	39 - 42 of 1895	Northern Railway
277 - 280	43 - 46 of 1895	Central Railway

Four builder's plates were carried by each of them, two as usual on the cab sides, and one each side of the tender.

Yorkshire Engine Company Batch

Resumption of construction on railway extensions soon put a strain on existing resources. Horniblow reported in 1895 that to cope with anticipated traffic increases, particularly livestock, it would be necessary to obtain more goods engines. The purchase of additional B15 locomotives was shortly afterwards approved, and an order was placed with the Yorkshire Engine Company of Sheffield on 30th December, 1895 for ten, the policy of obtaining locally made products being put aside in this case to achieve a continuity of supply.

They were built at the company's Meadowhall Works and were generally similar to the second batch of Evans, Anderson, Phelan machines with cabs with a larger opening, each side extending to the trailing edge. Staunchions supported the roof at the rear, and the forward edge of the side plate swept forward at waist level to a handy grab rail. The Yorkshire engines had numberplates of distinctive design, which were fixed unusually close to the cab between the third and fourth brass bands of the boiler cladding, as the exhaust steam pipe from the Westinghouse air pump to the smokebox took up the space normally occupied by Q.G.R. number plates.

It was 1897 when the first seven of them (Nos. 289 - 295) went into service on the Northern Railway. The other three (Nos. 296 - 298) were involved in a maritime accident and suffered some damage from salt water when the "Duke of Sutherland" in which they were being conveyed, was beached on Thursday Island. Two of these were subsequently reported to have been landed in Brisbane and one in Rockhampton, the latter being No. 296.

Details of numbering:-

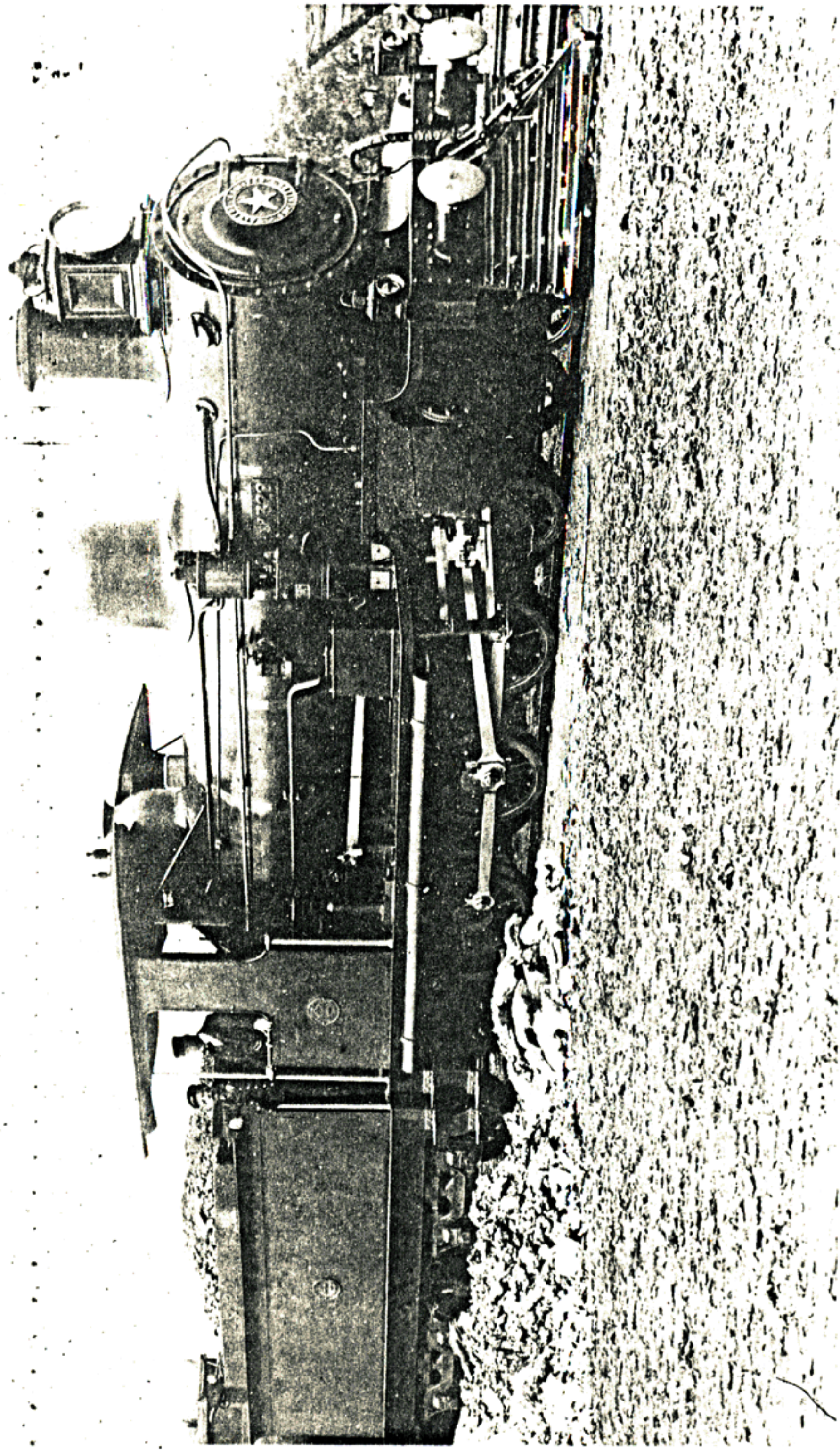
Road Numbers	Builder's Nos. and Year
289 - 298	531 - 540 of 1895

It would appear from the date cast on the plates that the company's policy at the time was to allocate a works number and year on receipt of a firm order, and not when the machines were completed, for the order is recorded to have been placed, as mentioned, just two days before the close of 1895.

Enter Walkers Limited

There was another contract placed as a result of Horniblow's report which is particularly significant, as it marked the entry of Walkers Limited of Maryborough, Queensland, into the locomotive building world (though they had first tried their hand at it with the little vertical boilered "Mary Ann" of 1873). The contract was let on January 8th, 1896 for delivery in thirty months of thirty B15 engines, quite a substantial order for the time.

The Walkers Limited machines incorporated the improved cab, but without visors, making the roof a more conventional item. Two whistles protruded



B15 Goods No. 322 poses at the head of a cane train at Huxley in the Isis district north of Maryborough during the early part of the century. *(Photo: Queensland Railways)*

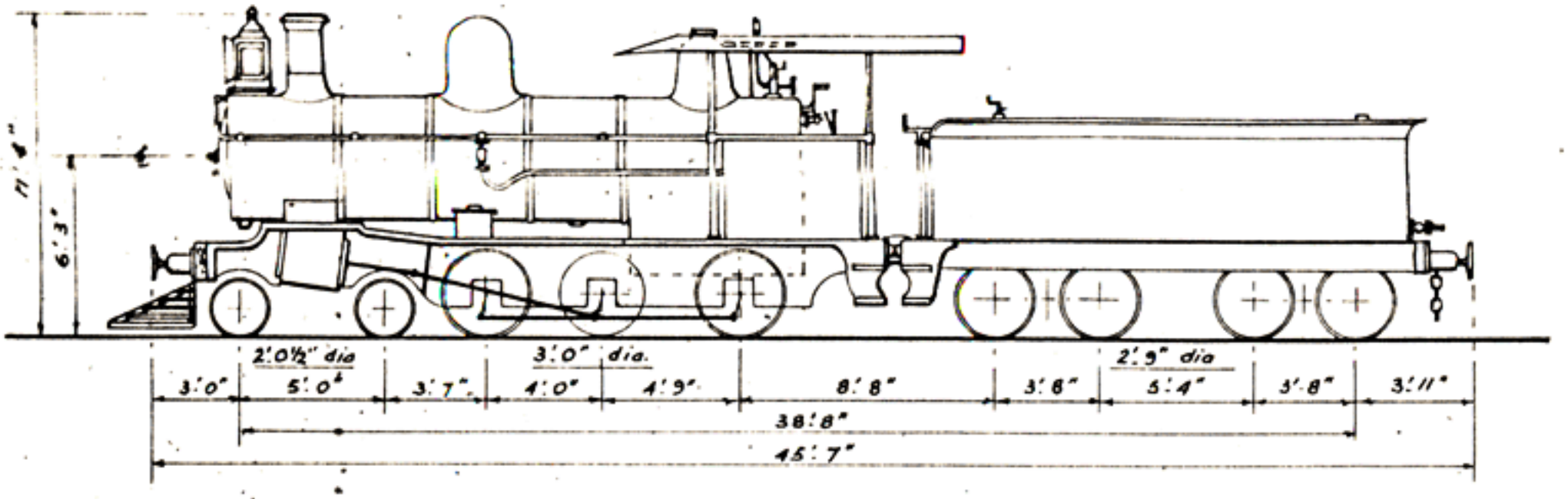
through the roof. The first of the contract was delivered on 31st July, 1897, carried builder's plate No. 1, and road number, No. 299. After undergoing trials it was shipped to Townsville where it entered service on 21st September, 1897. No. 300 was also sent to Townsville. Subsequent deliveries were made in good contract time, the last (No. 328) entering service on 27th October the next year. Several of them were allocated to the Northern Railway and to the "Central and Emu Park Railway" while the others remained in the Southern Division.

A second contract for twelve B15s was let to Walkers Limited for £31,548 on 25th August, 1898, for completion in twelve months. Company management must have been jubilant when on 23rd March, 1899 they secured a further contract for 25 passenger and 15 goods B15 engines worth £105,100. Any celebrations would have been premature, however, for just as earlier contracts with other firms had been altered in the past, so, too, were the B15 contracts reduced, though in this case the pill was sweetened by an alternative contract for 6D16 tank engines.

The decade between the delivery of the first and the 94th B15, when the isolated Queensland lines were beginning to be reorganised into a more unified system was punctuated by a number of significant events. Perhaps the most far reaching of them so far as the mechanical branch was concerned were the two boiler explosions of 1898 (see Bulletin No. 369) that led to William H. Nisbet's appointment as C.M.E. (Chief Mechanical Engineer) the following year. Horniblow was relegated to "second in charge" of the branch, though without alteration to salary. Charles B. Pemberton, District Loco. Superintendent at Rockhampton objected strongly to the appointment of an outsider to the position, and appealed directly to the Premier of Queensland, an act which was considered as "gross insubordination" and which led to his transfer to a more distant post of D.L.S. (District Loco Superintendent) Townsville.

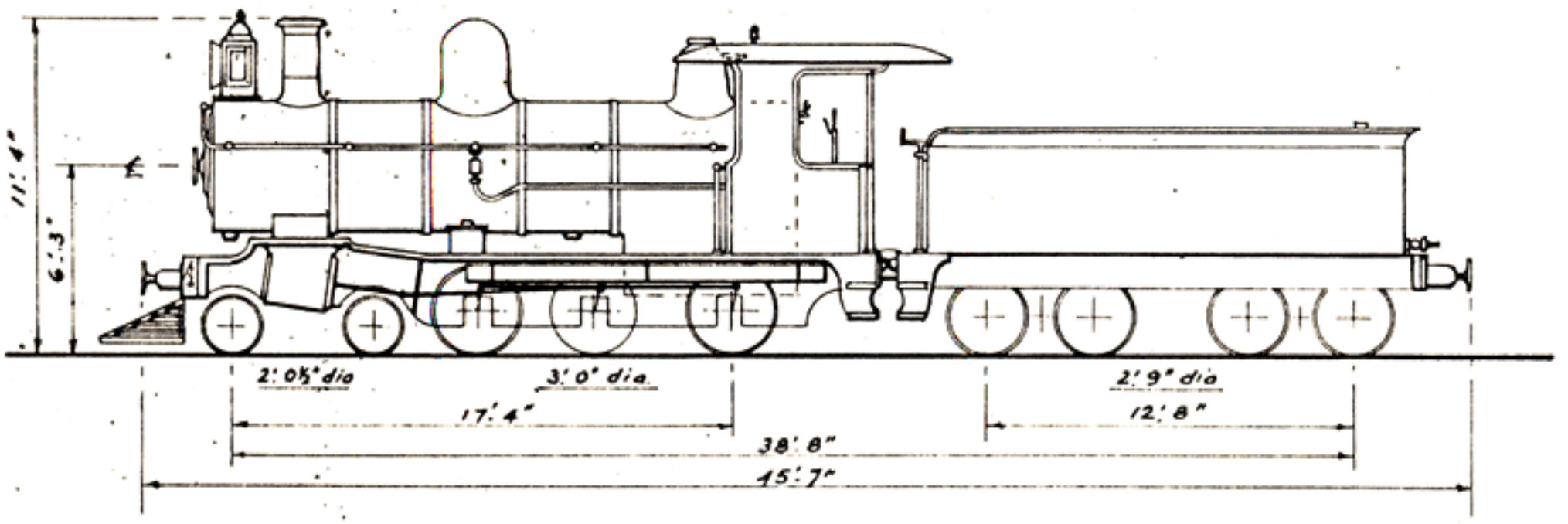
One of Nisbet's first recommendations was to cut down the number of PB15 and B15 engines ordered from Walkers, from 25 and 15 to 16 and 6 respectively, and he reported in 1900 that a fresh contract had been entered into for construction of

Opposite Page:
The Walkers Limited engines carried a distinctive plate on the smokebox door, and a cover at the side of their steam chests curved to the running boards. The numberplate is in a conventional position for Q.G.R. steam locomotives, and No. 329 can be considered the final development of the B15 Goods class.
(Photo: Queensland Railways)



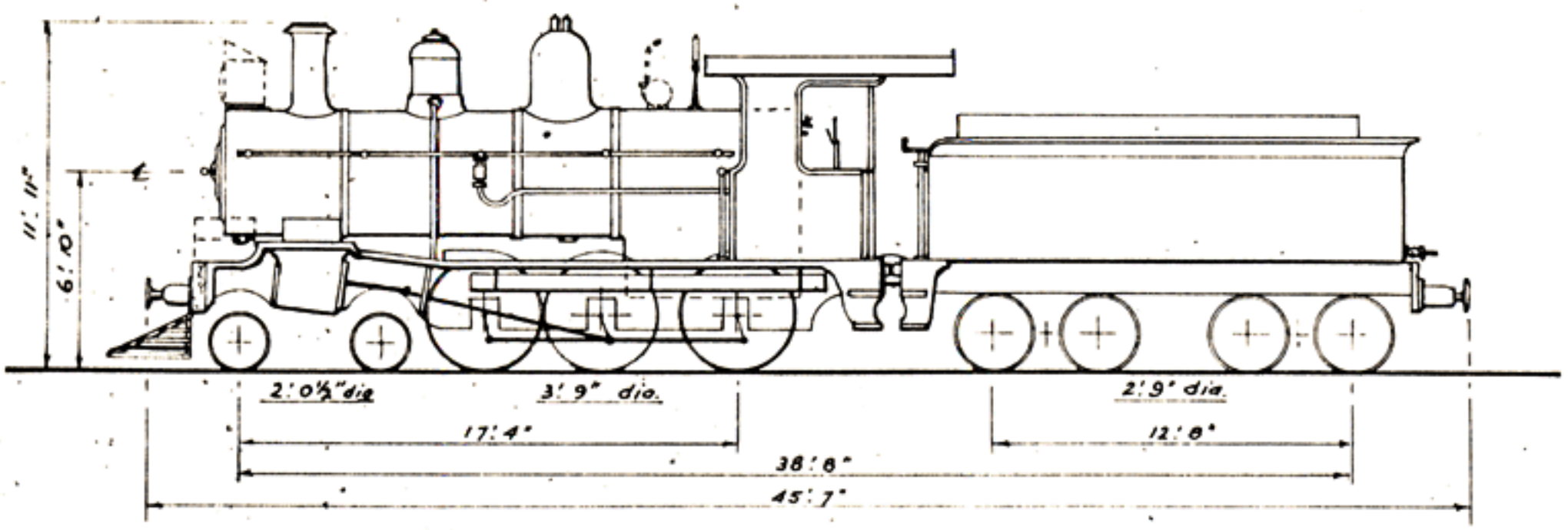
B15 ORIGINAL 1889

NASMYTH WILSON & CO.



B15 GOODS

EVANS ANDERSON PHELAN & CO, 1895,
YORKSHIRE CO., AND WALKERS LTD.



B15 CONVERTED

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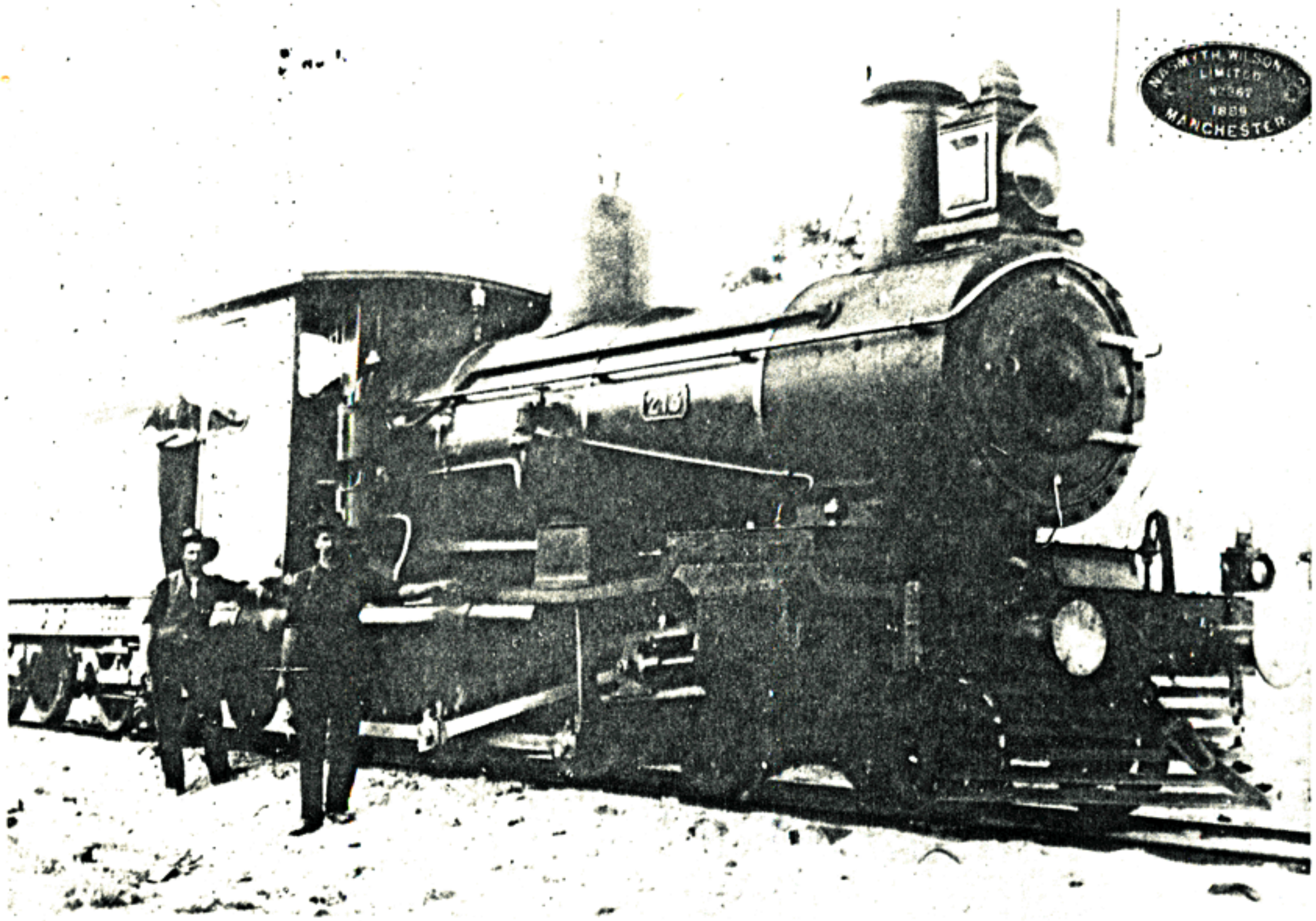
No. 539, shown here with a materials train on the Cairns range in 1911, was built for the Chillagoe Railway but was bought by the Q.G.R. Here it is in its original form as built with a centrally mounted steam dome and boiler top sandbox, features that had by then been introduced on the reboilered B15 Converteds. It was the last B15 built, and also the last one converted, some years later.
(Photo: J.H. Fraser Collection, courtesy G.E. Bond)

suburban tank engines.

The B15 numbers quoted cannot be reconciled with those quoted in the 1900 report by Nisbet which appear in error. The number of B15 engines actually supplied by Walkers, in the final contract was six. An opportunity was also taken to dispose of two of the second batch by selling them to the Chillagoe Railway and Mining Company of North Queensland, as they came off the production line. This explains what otherwise seems at first glance to be a discrepancy in allocation of builder's numbers. The Chillagoe engines were works numbers 38 and 42. Initially, 38 was to have been Q.G.R. No. 336, but this machine was allotted to the mining company. Hence Nos. 337 and 338 carried works numbers 39 and 40, and the eventual No. 336 was works number 41. Walkers 38 became No. 2 on the Chillagoe roster, and 42 became Chillagoe No. 3.

The firm built two more B15s for the Chillagoe Railway in 1900 (works 65 and 66) which became Nos. 4 and 5. They commenced building a further two in 1909 that were apparently ordered in a wave of optimism following one of the Chillagoe company's few good trading years, but a volte-face was about to take place. Walkers 115 became Chillagoe No. 6, but the other was bought new from the Chillagoe company by the Q.G.R. in December 1909 for £3,300! It was shipped to Cairns in February, 1910, where it commenced service the same month as No. 539.

These were the last of the class to be built. They differed from their earlier counterparts by being equipped new with a Baldwin style sandbox mounted on the boiler, a combined regulator and safety valve dome, and a single high pitched whistle mounted above the firebox, modifications (except to whistles) that many of the others had received in the interim. The Westinghouse pump was mounted in a more practical position just in front of the cab, and only one pair of builder's plates was fitted, fixed conventionally on the cab sides. Like those of Evans, Anderson, Phelan, earlier Walkers engines had been fitted with additional plates each side of the tender. The Maryborough constructed engines up to this time also carried a circular cast plate incorporating a star and the company's name mounted quite



The Nasmyth Wilson engines were fitted with flat fronted cabs in the course of time. Here, 213 has been reboilered, fitted with new cab, but is not converted and has retained running board mounted sandboxes. The W.H. pump has been relocated to a position finally adopted for all of the class, but the reason for the number plate not having "No." on it is not known. (Photo: G.E Bond Collection)

impressively in the centre of the smokebox door. The other Chillagoe locomotives were later acquired by the Q.G.R. when it took over the company's railway assets following the demise of the northern mining empire. The B15s were taken into stock on 19th June, 1919 as Nos. 23, 3, 42, 54 and 95 respectively, numbers that had become vacant through retirements of their earlier possessors.

Numbers of the Walkers products are summarized below.

Chillagoe Nos.	Q.G.R. Road Nos.	Builder's Nos. and Year
	299 - 316	1 - 18 of 1897
	317 - 328	19 - 30 of 1898
	329 - 335	31 - 37 of 1899
2	23	38 of 1899
	337 - 338	39 - 40 of 1899
	336	41 of 1899
3	3	42 of 1899
	341 - 346	43 - 50 of 1899
4	42	65 of 1900
5	54	66 of 1900
6	95	115 of 1909
-	539	116 of 1909

Modifications

Before Nisbet's appointment Horniblow had been experimenting with American Balanced slide valves on this class following approaches in April, 1898 by Jos. D. Russell, a principal of the American Slide Valve Company of Jersey Shore, Pa., U.S.A. who offered them on a royalty basis.

No. 329, the initial engine of Walkers second contract, was the first to be equipped with this improvement which it received during construction.

It was found that the valves were being scored after a short time, and though at first thought to have been caused by inadequate lubrication, it was soon found to be caused by ashes being drawn into the steam chest when the engine was coasting. It was then decided to fit snifting (or anti-vacuum) valves, one each steam chest. No. 330 had ¾ inch gun metal snifting valves fitted in May, 1899. About June, Nos. 331 and 329 had them added as a result of instructions issued by Horniblow to have them fitted to all engines equipped with balanced valves. Similar snifters were sent to Townsville for 332 and 333 which had already been trialled in the Southern Division and been shipped north. They probably entered service in Townsville with the snifters fitted.

Nisbet, when he took over in August, 1899, decided to increase the size of snifting valves to 1⅝ inch. No. 336 was the first of the B15 engines delivered with this further modification.

It is obvious from available records that the B15 class was not the success that its strength of numbers would suggest. The original iron boilered Nasmyth Wilson engines with 120 lbs pressure were much more powerful than their contemporaries with the exception of the 8D15 class tanks and a few Consolidations. But the later 4-6-0-machines with the higher 140lbs steam pressure had a very low factor of adhesion which led to excessive wheelslip, much to the detriment of both machine and track. The Chief Engineer, Henry C. Stanley on an inspection trip to the north in July 1899 complained about rails on the Northern Railway being broken by B15s with grooved tyres, which led to an exchange between Horniblow and Stanley over the condition of each other's equipment, resulting in the permissible speed of these engines being reduced. Pemberton suggested the problem could be overcome by increasing driving wheel diameter, and pointed out how it could be done.

Nisbet, who took up duty at this juncture, took the opportunity to castigate Pemberton, stating the alteration was "out of the question as it would mean rebuilding the engines at very great cost" and that he thought it "unfortunate that suggestions like these should be made by District Officers before they had evidently considered the thing sufficiently to enable them to arrive at a reasonable estimate of what their suggestion means."

Nisbet may have had cause to regret his outburst for it is obvious from his action to obtain 13½ inch cylinders to fit to six of the class, that he eventually had to acknowledge that something just had to be done about the engines. Luckily, this retrograde approach to the problem did not eventuate. The cylinders were later used in construction of six 6D13½ shunting tank locomotives after his departure from the Q.G.R. scene.

During his brief career as C.M.E., Nisbet recorded his criticism of his predecessors, stating, amongst other things that existing workshops were "totally inadequate" and that the ordering of new boilers for A12 and B12 locomotives was "ill advised", which was nevertheless true. He reduced some existing contracts as mentioned and placed an order for tank engines of his own design to haul the new American suburban cars (see Bulletin No. 514). He prepared designs for other passenger and goods locomotives that were most interesting but highly impractical as they were much too large for existing tracks and bridges. The outcome of his plans can only be guessed at, for, following the death of his brother, he tendered his resignation and went back to the Westinghouse Brake Company of Australia from whence he had come.

He was replaced by George B. Nutt, an experienced mechanical railway engineer who had had previous dealings with colonial narrow gauge railways. Nutt was appointed in February, 1901 and took up duty at the beginning of April.

At the instigation of Deputy Commissioner J.F. Thallon, Pemberton's suggestion to fit larger driving wheels to the B15s was revived. The proposal was to remove the flange from the leading driving wheel and place it on the centre driver, to fit a new top pivot casting under the saddle to compensate for the larger driving wheels, and to make slight adjustments to brake hangers. Pemberton proposed to fit 41 inch diameter wheels, which he pointed out, would reduce tractive effort but increase the adhesive factor "from 2.9 to 3.3". Actually, the incredibly low figure of 2.9 was an embroidery of the facts, as to obtain it, Pemberton calculated tractive effort at 90% boiler pressure instead of the 80% factor normally used in Queensland. Nevertheless, using the usual formula, the adhesive factor would have been increased from 3.3 to 3.8. He said that he doubted even with 41 inch wheels that maximum power could be developed (probably referring to full utilisation of maximum boiler capacity).

Thallon agreed that the "B15 Goods" was undoubtedly "over cylindered" and strongly urged the C.M.E. "to allow Pemberton every opportunity".

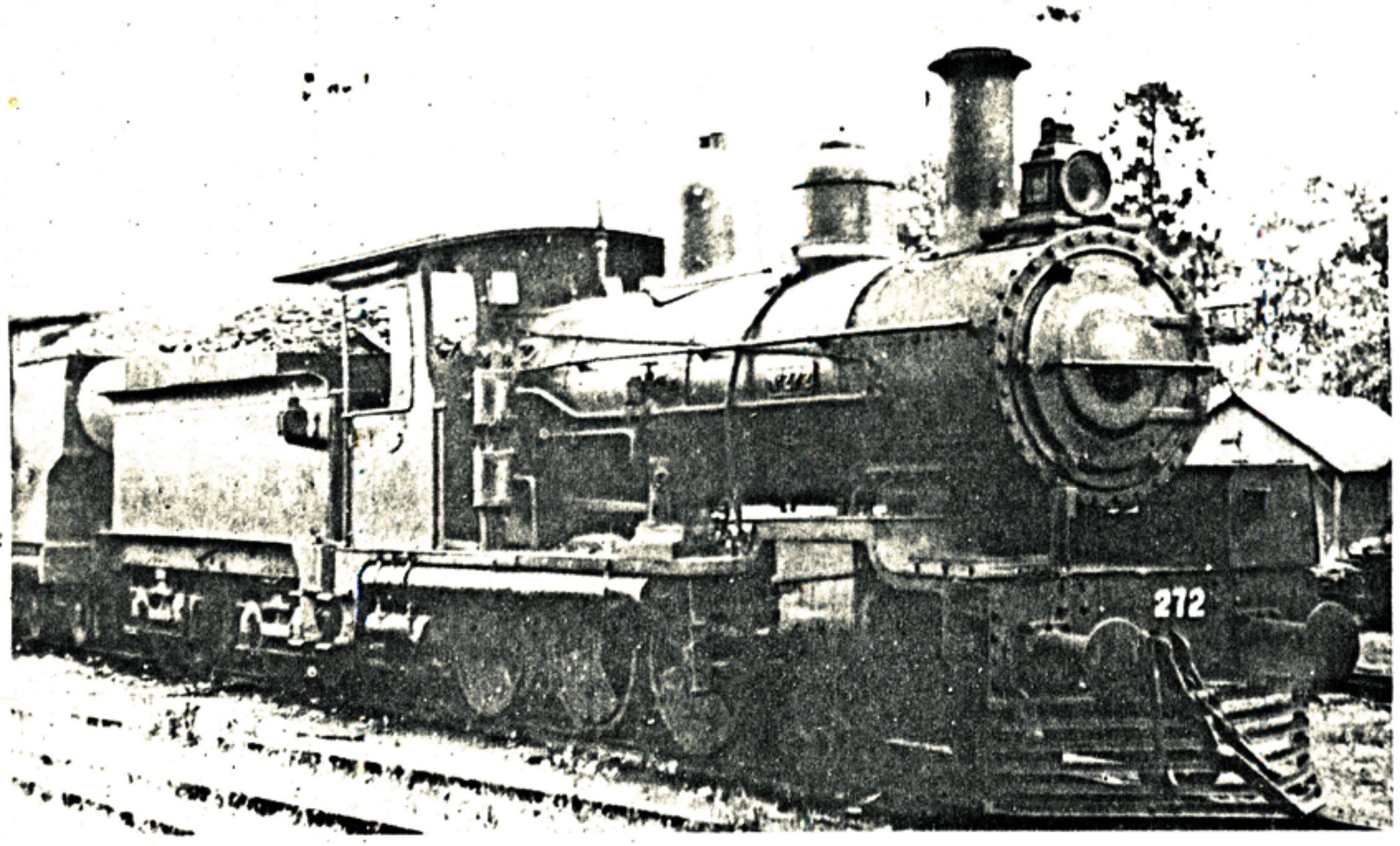
Nutt pointed out the matter had been dealt with previously, but was more disposed to accept the suggestion. In fact he decided to fit larger wheels than Pemberton had suggested, which involved cutting slots in the running boards and fitting splashers. Nutt also decided to fit castings to the bogie pivots of the tender to bring it into line with the cab footplate. Pemberton had mentioned both this method, and a cheaper but less effective solution of fitting a block on top of the floor plate, which had apparently already been done to some of the American built tenders.

In June, 1901, Nutt made enquiries of the N.S.W.G.R., V.R., S.A.R. and W.A.G.R. to see if they had any 45 inch tyres, and was able to obtain six from C.M.E. Woodruffe of the South Australian Railways.

First B15 Converted

No. 336, the first of the Walkers engines of the latest type incorporating balanced valves, large snifters and solid bushed connecting rods, was selected for conversion. The work was carried out at Ipswich Railway Workshops and was completed late in November, 1900. On 5th December the first of several tests was conducted up the Main (Toowoomba) range under the supervision of draftsman J.E. Robinson who was to later become Works Manager at Ipswich. Boiler pressure of No. 336 was raised to 150 lbs sq. inch during the conversion.

The first test run was from Ipswich to Toowoomba conveying 240 tons at the outset, 230 tons from Laidley, and 100 tons up the range from Murphy's Creek. Five more trips were made from Murphy's Creek to Toowoomba before the engine was returned to Ipswich for fitting a longer brick arch



To offer crews some extra protection, B15s with the altered cabs had an additional side plate added to reduce the size of the opening to conform closer to the "standard" cabs. No. 272 is shown at Wooloongabba loco. depot with a cast iron chimney and small headlamp.
(Photo: K.J.C. Rogers Collection)

which had not been done during the conversion as instructed because of a misunderstanding. The seventh test from Ipswich to Toowoomba was followed by five more up the range, culminating in a trial on 22nd December, 1901 hauling 26 Up Sydney Mail.

The first tests had not been satisfactory as great difficulty had been experienced trying to maintain 150 lbs pressure particularly with local Gowrie and Oakey coal. Bundamba coal was found little better. Robinson was concerned by the fact that all driving wheels were flanged and thereby increased resistance on the severe curves, but reported it was quite evident the coal was not being consumed economically.

He then directed his attention to the front end, remarking that Q.G.R. orifices and chimney diameters were much larger than those adopted in American practice. He was able to achieve much better results with a "jimmy" (a ¼ inch iron bar placed across the exhaust pipe which was normally prohibited) and the following tests concentrated on improving the draughting by varying the blast pipe and chimney diameters, resulting in improved performance, achieved by increasing the orifice and putting in a chimney liner to reduce its diameter. When the original chimneys eventually wore out, they were replaced by a cast iron chimney pattern of noticably smaller diameter.

The best load taken up in one of the later tests was 135 tons, then 10 tons over the load. It was decided to fix working pressure at 140 lbs sq. inch, though 336 retained 150 lbs pressure until February, 1903.

Nutt stated he was "well satisfied" with the results, but suggested any further conversions be deferred as in the following two to three years there would be 15 to 20 B15 engines requiring boiler renewal. The Commissioner agreed so far as the Southern and Central Divisions were concerned, particularly in the former which had PB15 engines available for passenger work. But the Northern Railway had no adequate power, so in May, 1902 it was approved to convert Nos. 327, 328, 332 and 333 to enable them also to be used for passenger as well as goods work. The alterations were to be carried out at Townsville workshops using the necessary castings sent from Ipswich but retaining their existing boilers. It was also intended to use the same axles and wheel centres, but as this would have involved sending the wheelsets to Ipswich for the larger tyres to be fitted on a sufficiently strong wheelpress, it was finally decided to use new wheelsets. The old sets released were sent to Ipswich and were eventually fitted to the 6D13½ shunting tank engines, together with Nisbet's hitherto unused 13½ inch cylinders.

However, it was not until May, 1903 that wheels and castings were shipped to Townsville. On 1st June, Nutt sent copies of drawings to the District Loco. Superintendents at Rockhampton and Townsville of alterations to chimneys and blast nozzles, instructing them to incorporate them on their B15s when they were under repair before returning them to traffic. On 30th June, 1903, conversion of No. 328 was completed.

The necessity for a more powerful passenger engine for the Drummond range, west of Emerald on the Central Line, had been discussed and it was again brought up by the Traffic Manager around this time. It was pointed out that there was one mail train a week and frequently it had to be divided to get it up the range. It was therefore approved in July, 1902 to convert two C.D. engines. Nos. 344 and 345, the newest in the district, were selected. The old wheels off 345 were shipped from Rockhampton to Maryborough then railed to Ipswich in April, 1903, but new wheels were not forwarded until August, and it was 9th September before the rebuilt 345 worked a train of 150 tons to Moonmera and back satisfactorily. Conversion of 344 was completed in November.

Their old wheelsets went towards the building of the other two 6D13½ engines.

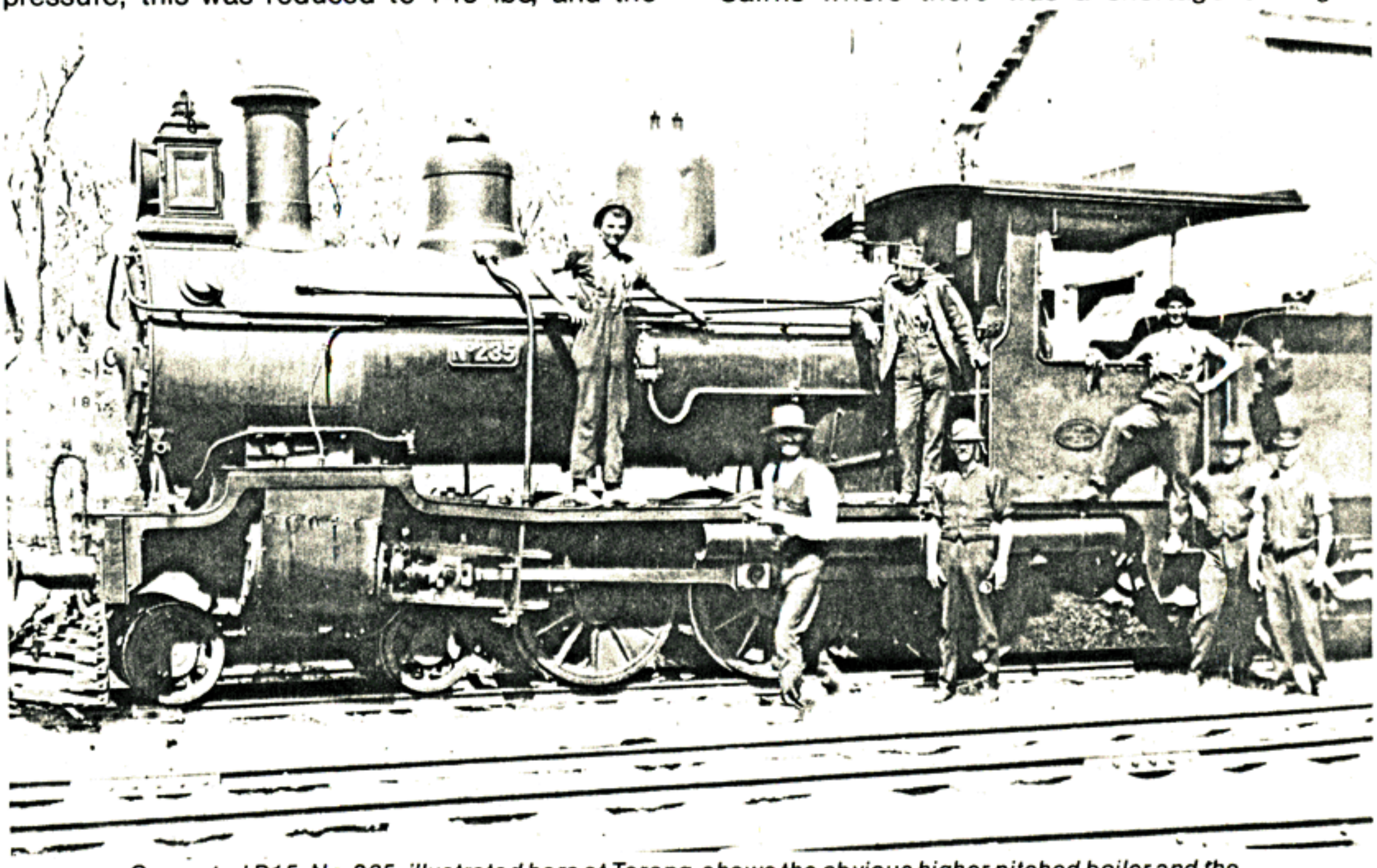
More Conversions and Reboilering

Though the original "B15 Converted", No. 336, had been running with 150 lbs sq. inch boiler pressure, this was reduced to 140 lbs, and the latter pressure was also carried by the Central and Northern Division conversions. Henry Horniblow, who had resumed control of the branch under his old title of Locomotive Engineer when George Nutt's term as C.M.E. ended in 1904, began obtaining replacement boilers that carried 150 lbs pressure. It was approved to obtain ten such boilers and to convert a similar number of engines. These were presumably the first of the "standard" boilers, which later carried a higher working pressure of 160 lbs sq. inch.

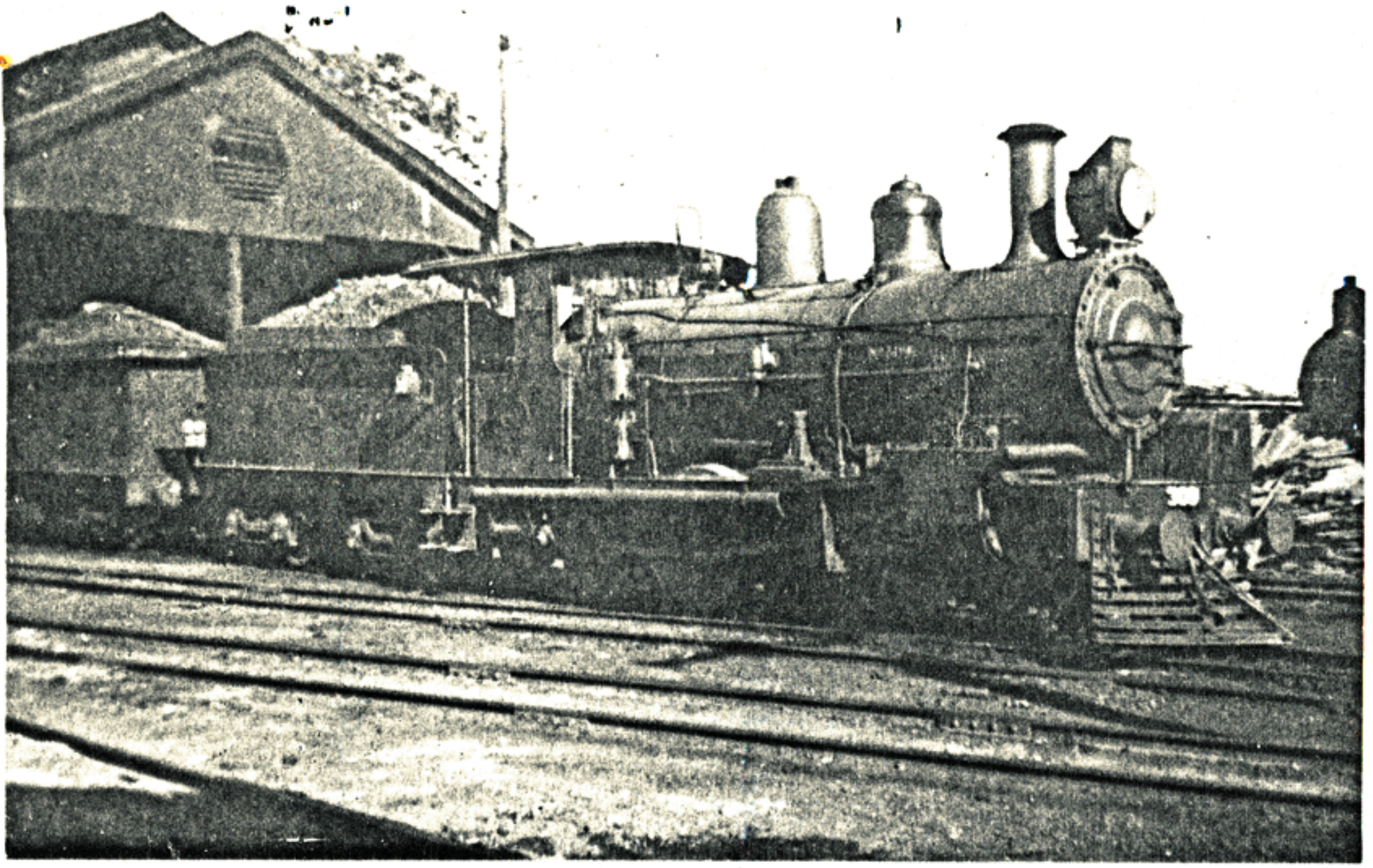
The new boilers were fitted with a regulator dome incorporating safety valves mounted on top, thus dispensing with the separate safety valve manhole and dome cover on the firebox. Also acting on a suggestion by Works Manager Neild the number of tubes was reduced from 162 to 158 to strengthen the tubeplates, and brass tubes were fitted, too.

The change to 45 inch wheels had reduced the theoretical tractive effort of the 140 lbs engines to 11,200 lbs, compared with 14,000 lbs of the goods engines with the same pressure. Raising it to 150 p.s.i. restored the figure to 12,000 lbs, the same as the first Nasmyth Wilson machines, while the change to 160 p.s.i. brought the figure to 12,800 lbs.

No. 206 was the first of the initial batch to be equipped with a 150 lb boiler and 45 inch wheels. It was outshopped from Ipswich in December, 1906, and the following month it was transferred to Cairns where there was a shortage of engine



Converted B15, No. 235, illustrated here at Tarong, shows the obvious higher pitched boiler and the deepened buffer beam. This is one of the Brisbane built locomotives that had rectangular cab windows which had been dispensed with by this time. *(Photo: G.E. Bond Collection)*



Electric lighting equipment was fitted to a large portion of the fleet. At first, turbo-generators were located behind the steam dome as shown in this illustration of No. 309 at North Bundaberg in July, 1938. *(Photo: G.E. Bond)*

power.

No. 214 was also outshopped in December, 1906 but at Rockhampton. Three more had been done at Townsville that year, making a total of eight. A few engines were altered each year until 1910, when a more vigourous programme was commenced, and by 1916 a total of 82 had been altered into the "B15 Con." class. Half of these were done at Ispwich Shops during this seven year period, two at Rockhampton, eleven at Townsville and four at Cairns. The first at the latter was No. 241, which turned out in November, 1912, after having been previously fitted with new boiler at Ipswich in July, 1911. It is of no small significance that the C.M.E. during this particular time was Charles Pemberton, who had risen to the post following Horniblow's death, and the retirement of his lifelong assistant R.T. Darker, who for a short period was in charge.

Pemberton was promoted to Deputy Commissioner in 1916, but at his request, reverted to C.M.E. in 1918. He finally resigned in 1922. Another three engines had been converted during the interim, and a further five to the end of 1926.

In 1927, C.M.E. Robert Chalmers recommended that no further conversions be made. At this stage the number of engines with small wheels had been reduced to eight; No. 301 stationed at Rockhampton, No. 273 shunting at Townsville and Nos. 239, 330, 3, 54, 95 and 539 at Cairns.

Complaints were lodged by the A.F.U.L.E. in 1928 stating that the 36 inch engines in the Cairns District could not run to time. District Superintendent W.A. Hooper was not in favour of transferring PB15s there as requested, as they would be restricted, he said, to the Innisfail section (i.e. the North Coast line). It was therefore decided to convert four of the Cairns engines and also No. 273. The work was deferred when inspections of the Cairns engine's boilers revealed that pressure could not be increased to 160 lbs. In fact No. 539 was then running with 120 p.s.i. Chalmers stated the work should not be carried out until the need for new boilers arose, and eventually only three of the northern engines were converted, the last, appropriately, being No. 539.

Set out below is a summary of conversions, and the Shops at which the work was carried out.

Years	Ipswich	Rock-hampton	Town-sville	Cairns	Total
1901-04	1	2	4	-	7
1905-09	7	1	9	-	17
1910-16	41	2	11	4	58
1917-29	-	-	3	8	11
Totals	49	5	27	12	93

Other Modifications

Variations in fittings such as balanced slide valves, snifting valves, air brakes, cabs etcetera have been already mentioned.

The original wide capped chimneys were fitted with 2 inch smaller diameter liners to improve steaming, and were eventually replaced by less impressive but more functional/narrower cast iron pieces, most with French style capuchion, but some with caps. Like other classes a few were temporarily fitted with external mesh spark arrestors to burn wood during two extensive strikes in the coal industry.

Baldwin style sandboxes were mounted on top of the boilers as the B15s were reboilered, replacing the footboard mounted boxes of the B15 Goods.

Boiler handrails, which swept around and above the smokebox doors were modified and most engines had a separate handrail fitted to the door itself to facilitate opening. A few at one time carried a circular hoarding board in front of the door for advertising displays.

Those fitted new with Westinghouse brakes had their air pumps mounted on the driver's side near the smokebox end of the boiler, resulting in engine number plates being fixed on the rear boiler ring on the Yorkshire built engines, and on the smokebox sides on some of the Evans, Anderson Phelan machines. Shifting the pump to a position closer to the cab enabled not only this to be standardised, but enabled the driver to get a better forward view. Larger 8" x 8½" pumps were also fitted to most engines, mainly during the twenties. A fixed metal toolbox was added to the buffer beam platform on those still in service after World War II, though No. 277 was an exception.

The position of whistles was changed from atop the cab roof to the top of the firebox in front of the cab when they were reboilered. Replacement of the original two whistles with a single dual (high and low) note reed was carried from about 1913.

Between 1909 and 1914 the Nasmyth Wilson products were fitted with improved cabs similar to the post-1895 built B15's, but the front spectacle plate and cab sides were flush, and they did not have a ballustrade pillar.

Another revision was an alteration to rocker bars to enable the entire grate to be rocked to clean the fire. No. 275 had been so modified in Townsville in January, 1914 and an experimental steam powered rocker unit using obsolete wagon parts was fitted to No. 295 at Charters Towers in 1917. Pemberton was opposed to fitting extra rocker bars on grounds of economy, but eventually agreed to Union requests to have it done, and had all but a few B12 and shunting engines fitted with rocking grates by July, 1922. With this and steam ejector shoots to clear ashes from the smokebox, Queensland enginemen must have been the envy of their brothers in other States. A non standard arrangement on Wooloongabba engine 345 was a constant source of complaint for a decade until it was fitted with standard rocking bars in 1924. In later years, remaining engines in service eventually were fitted with improved hopper ashpans with pneumatically operated sliding doors.

The original water stop cock control handles on the top of earlier tenders were removed, and coal boards were added to increase capacity. In the southern part of the State the usual 9 inch high boarding was generally fitted, but in the north and west, two or more boards were added, increasing coal capacity considerably. Minor alterations were made to bogie side bearer clearances between 1915 and 1921.

Turbo generators and electric headlamps were added in later years, particularly to northern based units. Ex Chillagoe Nos. 3, 42 and 95, and C.D. engine No. 238 was listed with this equipment in 1935, while just over half of those remaining in service in 1950 were so equipped. Most had the usual Pyle National gear, but at least one had Stones equipment. Headlamps and generators were often swapped from one engine to another, quite often being taken off an engine just in for overhaul and being fitted to another completing repairs.

Dimensions

A brief summary of principal dimensions of the original locomotives was given earlier, but at this point it is worth elaborating briefly on the whole class.

The modification from B15 Goods to B15 Con. did not involve major alteration to dimensions though it made a major alteration to performance. It was not a drastic rebuilding and cylinders, frames and valve gear did not have to be altered. Valve travel remained at 3⅝ inch, lap was 13/16 inch and with Stephenson link motion lead was variable.

Boiler centreline was raised from 6 ft. 3 in. to 6 ft. 10 in. by the larger wheels and by an additional saddle casting or packing piece above the cylinders. This raised the firebox, and consequently the firehole by about 3 inches relative to frames and cab floor. The slight discrepancy was caused by altered construction of the new boilers with which they were fitted (either before or during conversion) which were of lap jointed ¼ inch steel plate instead of butt jointed 7/16 inch plate of the originals. Other general boiler dimensions were retained - 4 feet (minimum) diameter and 9 feet 11¾ inch between tubeplates. The number of 1¾ inch diameter tubes was reduced as mentioned, affecting the heating surface as can be seen in the following table.

The firebox was not altered - 5 feet 10 inches long by 2 ft. 11¼ in. outside, but probably by the fitting of rocker bars, grate area was reduced slightly. The crown of the later units was also slightly arched and not flat as on the originals.

The new wheels, tyres, castings and boilers added to engine weight. The bogie pivot packing pieces must also have added to the mass of the tenders but the increase is not recorded. Likewise. the author has not seen any official figures for

increased coal capacity through fitting coalboards. The recorded tender dimensions are 4 tons of coal, 1700 gallons of water and weight of 23.75 tons. It can be calculated that the boards increased the coal load to about 5½ tons.

Comparative Dimensions

	B15 Original	B15 (1893)	B15 Converted
Driving Wheel dia.	36"	36"	45"
No. of Boiler Tubes	162	162	158
Heat. Surface, Tubes	740	740	721
Heat. Surface Total	820	820	808
Grate Area (sq. ft.)	13	13	12.8
Boiler Pressure	120	140	160 (a)
Tractive Effort @ 80% B.P.	12 000	14 000	12 800 (a)
Factor of Adhesion	3.9	3.35	4
Adhes. Weight, tons	20.95	20.95	4.18 (a)
Engine Weight, tons	27.95	27.95	23.93
Total Weight, tons	51.7	51.7	31.64
			55.39 (b)

(a) Figures for B15 Con. with 150 lbs sq. inch pressure -
Tractive Effort 12,000 lbs
Factor of Adhesion 4.4
(b) Estimated weight including extra coal - 57 tons.

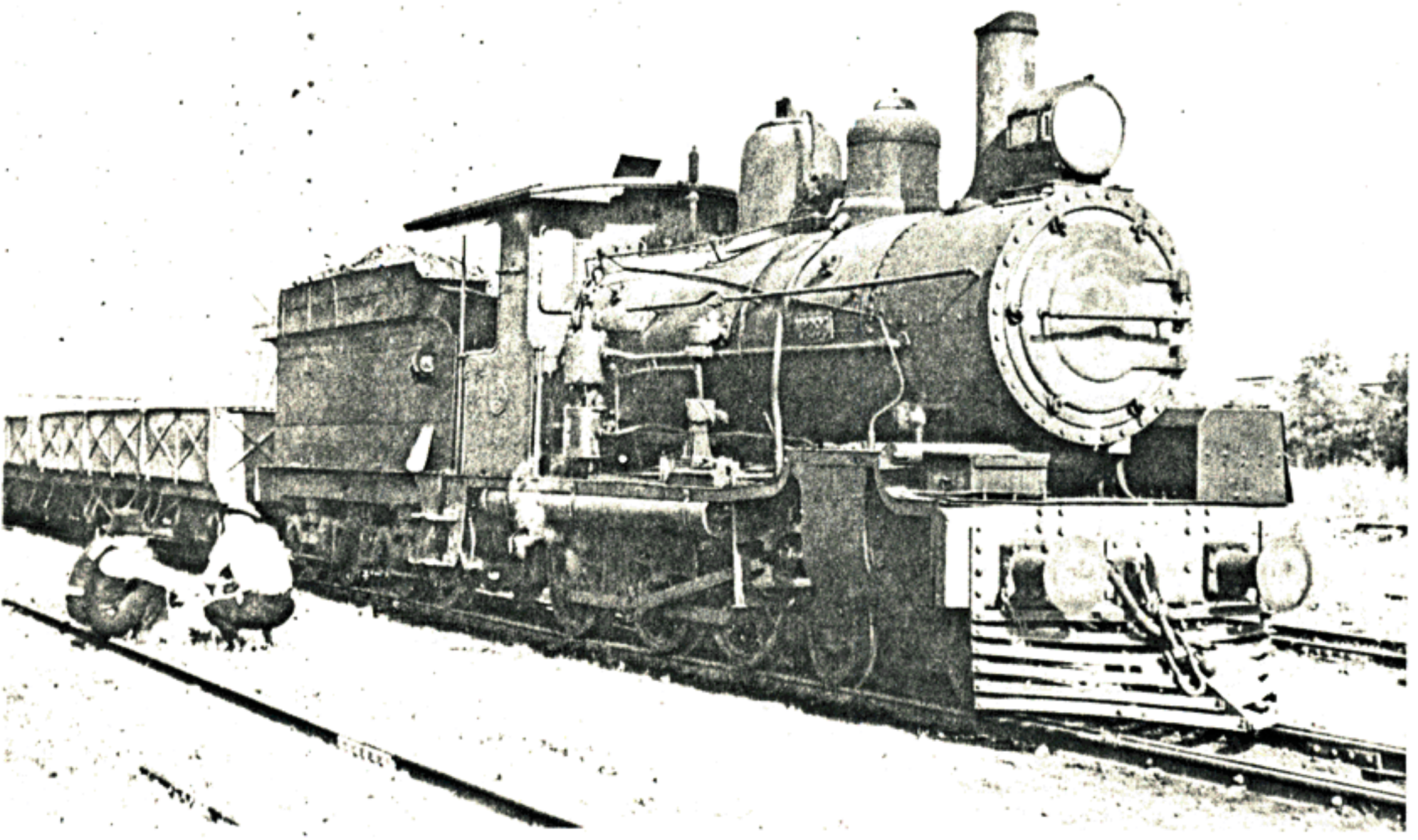
General

The working span of the B15 class extended over a period of 79 years when great changes occurred to the Queensland railway scene, and they worked in localaties as far apart as 1,800 miles (2 900 km). A summary of their use, characteristics and output can therefore be very generalised. Perhaps a four part division of their careers can be made:

- 1889 to 1910, when they were regarded primarily as large goods engines;
- 1901 to 1929, when they were converted for mixed traffic use;
- 1934 to 1950, when their numbers gradually dwindled and they were relegated to secondary duties;
- 1955 to 1968, when all except the Cairns engines were regarded simply as shunting engines.

When new they played the role of mainstay for goods and livestock on the three major railways. Apart from the three C16 Baldwin engines (Bulletin No. 503) they were at least theoretically the most powerful engines available. (The tank engines had a higher figure than the first batch from Nasmyth Wilson). All three systems had B13 engines at their disposal for mixed traffic work, plus A12 4-4-0 engines for passenger work, except the Northern Railway which did not get any of the latter until about 1895.

However, the efficiency of the "B15 goods" left



Generators were later repositioned in front of the steam dome. No. 299, which is now preserved by Walkers Limited at Maryborough shunts at Cairns in July, 1963. (Photo: E.W.H. Ward)

something to be desired. The majority had 140 lbs boiler pressure and a particularly low adhesive factor. Loads were based on 120 lbs pressure, but a note in the 1897 General Appendix states "it must be understood that when boilers carry 140 lbs pressure and conditions are favourable the load can be increased by as much as one sixth on many sections of the line." It may have been this provision that led to the problems of excessive slipping and grooving of tyres which in turn resulted in a temporary speed limit of 15 m.p.h. being placed on those with bad tyres. The usual maximum speed was 25 m.p.h. (40 km/h).

It was at this juncture that Pemberton suggested fitting bigger wheels. The cost of rewheeling and conversion amounted to less than 8% of their original cost and was a good investment.

Front end draughting had been unsatisfactory as shown in the previously mentioned 1901 tests. Two years later tests were being carried out on the Main Range with B13 engines, and it was decided to make trial trips with B15 No. 341, though, as this was incidental to the B13 boiler tests, no indicator gear was fitted. Nevertheless, the results are quite interesting.

No. 341 had been built with American balance valves and large snifters and had been later fitted with a 3⅞ inch blast pipe nozzle and chimney liner, so these results could be indicative of the best capabilities of a 36 inch wheeled B15.

The load up the range was currently 125 tons, and scheduled goods running time for the 19 miles was 120 minutes. On the first test on 20th October. 1903 a load of 145.7 tons was taken and running time was reduced to 100 minutes. This represents an average speed of 11 m.p.h. (18 km/h) for the 1212 feet (370 metres) climb. J.E. Robinson who supervised, stated steam pressure was never below 130 lbs and there appeared to be steaming capacity for a further 20 tons load, but it was impossible to work on the 4th notch (of the reverser) on account of insufficient adhesion.

On 22nd October however, a load of 156.35 tons was successfully tackled. But though running time was only 113 minutes, the engine almost stalled at the 86½ miles and again at the final pinch into Harlaxton due to the same problem. Coal consumption was 88.4 lbs per mile, or 68 lbs per sq. foot of grate per hour.

No recommendation appears to have followed, but when Colonel Chas B. Evans, who was very train load conscious, took up a Commissioner in 1911, a general revision of all load tables was made and the goods load of a B15 Goods was in fact increased to 145 tons over this section.

The comparative goods loads for these engines shown below in tons, indicate increases of between 10% and 17% which would probably not have been practical but for the alterations to the front end resulting from the 1901 tests.

	1897	1913	Track Characteristic
S. & W. Main Line			
Brisbane & Ipswich	250	280	undulating
Laidley & Gatton	325	380	level
Murphy's Ck to Toowoomba	125	145	Main Range
North Coast Line			
Eumundi to Cooroy	175	190	Blackall Range
Central Railway			
Bogantungan to Hannam's Gap	110	140	Drummond Range
Northern Railway			
Pentland to Burra	120	130	Burra Range
Cairns Railway			
Jungara to Kuranda	-	128	Cairns Range

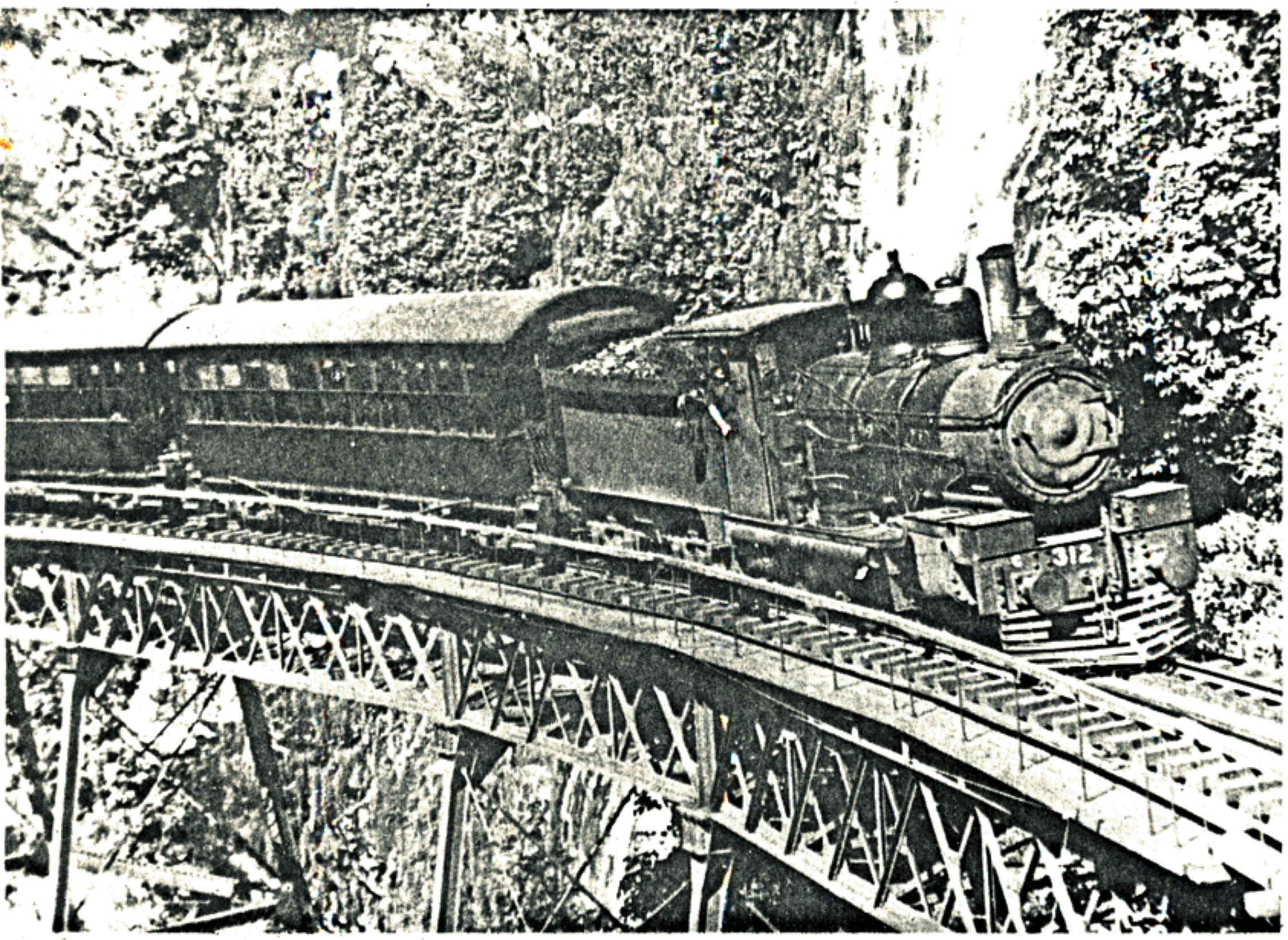
The B15 goods load on the Drummond Range had been increased to 126 tons according to the Appendix of 1907, possibly as a result of the test carried out with No. 345 when it was first converted.

Lines for which B15 loads were published during this period included the Main, Southern, Western and South Coast Lines and branches, the completed portions of the North Coast Line and branches, the Central Railway and Northern Railway and branches, the Cairns Railway (after 1903) but not the isolated Mackay, Bowen or Normanton lines.

The 1901 - 1929 (Converted) Period

On Nisbet's departure from the Q.G.R. scene, Pemberton's suggestion was acted upon and No. 336 underwent tests up the Main Range between 5th and 22nd December, 1901, culminating on the latter date with its first official passenger duty - hauling the important Sydney Mail from Brisbane to Toowoomba.

The load on this occasion was six 45 feet coaches, a T.P.O. and an "A" wagon (a 4-wheeled box wagon, probably for baggage), tare 106 tons. gross 120 tons. The train, which then left Brisbane Central at 7.10 a.m. and was due to arrive Toowoomba at 11.50 a.m., actually left 13 minutes late, and arrived 22 minutes late, lost time being attributed to stops for holiday passengers. Steam pressure was set at 150 lbs sq. inch, but was kept to 140 lbs during the run. Robinson suggested that pressure be reduced to the lower figure, and that the brick arch, which had been lengthened from 19½ inches to 36 inches, be lifted to a higher angle to prevent the fire from being directed at the firehole.



The Cairns ~~area~~ was a stamping ground for the B15 engines for years. Here, B15 Converted No. 312, fitted with a cast iron chimney with capuchion, heads the famous "Grandstand" train over Stoney Creek falls bridge in May, 1937. *(Photo: K.J.C. Rogers Collection)*

In 1902, Nutt made enquiries of several English and American railways about dynamometer car designs. Dugald Drummond of the L. & S.W.R. who was amongst those approached, suggested instead the use of Boyer's Speed Recorders, which he considered adequate for Queensland's needs. This apparatus produced a speed graph on a narrow roll of paper by means of a flexible shaft drive from a pulley wheel connected by belt drive to the leading wheel of an engine bogie. Nine of these recorders were subsequently purchased.

Several B15s were fitted at different times with the gear, including 213, 273, 322, 328, 329 and the converted 336.

Of these, No. 329 recorded some remarkable speeds in October, 1903 between Brisbane and Gympie, the highest being 47 m.p.h. (75.6 km/h) between Caboolture and Morayfield (2 miles), which seems incredible, considering the engine had only 36 inch diameter wheels and that it would have undoubtedly stopped at Caboolture for water. Other maxima of between 37 and 43 m.p.h. on known "racing" stretches of the line are more acceptable as factual, while some extremely good average running speeds for this undulating, winding 106 miles of railway of between 28 and 31 m.p.h. were recorded - very creditable for an engine officially limited to a 25 m.p.h. maximum speed! The maximum for a converted engine on 60 lbs per yard rails was 40 m.p.h.

The first Central Railway B15 Con., No. 345, after a successful trip on the Mount Morgan line, made a test working 24 Up goods from Emerald to Alpha on 13th October, 1903, hauling 126 tons over the Drummond Range. The only concern expressed was that the tapered tread of the outside driving wheels appeared to lift on 4 chain curves. This load was then adopted for all of the class, converted or not, for goods trains until institution of revised loads in Evans' time almost a decade later. The original goods load of 110 tons was adopted as the passenger train load on this tortuous climb.

In the Northern Division, though A12 engines had become available, they could haul only 55 tons westbound on many of the hilly sections of the G.N.R., and B13s could handle only 20 tons more, so it may have been necessary to double head mail trains. The situation was retrieved after conversion of the B15s, No. 328 being the first one done at Townsville Workshops, in June, 1903.

Cairns had seen its first B15 Goods in 1901

No. 297, one of the trio beached on the "Duke of Sutherland" on Thursday Island, ended its days in Toowoomba. It is shown fitted temporarily with a spark arrestor to burn wood fuel during a coal strike.
(Photo: K.J.C. Rogers Collection)

when No. 271 was shipped up from the S.D., commencing a long association that lasted until the introduction of lightweight diesel locomotives some 60 years later. The Cairns Tablelands District abounded (and large parts still do) in pioneer type railway lines built to very low engineering standards. The B15 class in both forms made it a popular stamping ground, being the most powerful engine capable of operating over all lines.

The first of many transfers between Townsville and Cairns (which took place by sea until the final links of the North Coast Line were completed in 1924) occurred in 1901/02 when No. 239 arrived in Cairns. The first converted engine to work in the district was No. 206, sent up in 1907 shortly after its rebuilding at Ipswich.

By June, 1912 over half the class had been equipped with 45 inch wheels, and allocations were as follows:-

	Goods	Converted	Total
Southern & Central Divisions	26	28	54
Great Northern Railway	9	17	26
Cairns Railway	11	2	13

The Mackay Railway got its first B15 the following financial year when goods type No. 301 was transferred to the then isolated line. It saw out its remaining working life at Mackay and was written off in 1934.

In April, 1915, twenty were shown allocated to the Brisbane District, two (272 and 341) to the Maryborough District, and seven to the South Western Division. The latter included 277, 309, 317 and 320 at Toowoomba with Nos. 205, 242 and 297 at Roma.

No. 308 was converted at Ipswich in December, 1915 and was sold the same month to the Aramac Shire Council, which operated it on their 42 miles tramway which linked Aramac with the Central line at Barcaldine. It operated on that line until about 1943, was unsuccessfully offered for sale in 1949 and was cut up ten years later at Wooloongabba.

In May, 1920, No. 273 was transferred from Townsville to Innisfail to assist with construction of the remaining isolated part of the North Coast Line.

The Cairns Railway had acquired the Chillagoe Railway engines by this time, and as the great north-south link approached completion, more B15s were transferred there to cope with increased activities, leading to as many as 26 being based there. After 1924, some of them found their way back to more temperate climates, but their numbers revived once more.

During the twenties a number of larger steam

Road No.	Builder's and Year	No.	Date in Service	Date/Place Converted	Written Off	Notes
205	NW 354	1889	.89	12.09 lps	4.54	
206	NW 355	"	"	12.06 lps	2.11.49	
207	NW 356	"	"	11.07 lps	4.35	
208	NW 357	"	"	4.11 lps	6.42	
209	NW 358	"	"	4.10 lps	4.35	
210	NW 359	"	"	8.08 lps	6.42	
211	NW 360	"	"	7.10 lps	2.11.49	
212	NW 361	"	"	11.13 lps	6.42	(a)
213	NW 362	"	1.11.89	2.26 Tv	18. 1.43	
214	NW 366	"	1. 1.90	12.06 Rton	6.42	
215	NW 367	"	31. 1.90	10.11 lps	6.42	
216	NW 368	"	28. 2.90	5.08 lps	21. 9.50	
217	NW 363	"	5. 5.90	6.07 Tv	21. 9.50	
218	NW 364	"	20. 5.90	7.08 Tv	1.35	
219	NW 365	"	28. 2.90	7.07 Tv	4.59	
235	EAP 26	1893	13. 5.93	8.10 lps	28.12.51	
236	EAP 27	"	"	2.12 lps	4.35	
237	EAP 28	"	10. 6.93	3.12 lps	5.51	(b)
238	EAP 29	"	9. 6.93	5.12 lps	6.42	
239	EAP 30	"	30.12.93	-	11.34	(c)
240	EAP 31	"	25. 1.94	8.12 Tv	2.52	
241	EAP 32	"	4.12.93	11.12 Cns	18. 1.43	
242	EAP 33	"	"	11.10 lps	4.35	
243	EAP 34	"	20. 2.94	10.11 lps	6.42	
244	EAP 35	"	19. 2.94	9.10 lps	1. 8.54	
270	EAP 36	1894	24. 5.94	11.07 lps	4.35	
271	EAP 37	"	"	11.24 Cns	9.57	
272	EAP 38	"	"	4.12 lps	6. 5.53	(d)
273	EAP 39	1895	15. 6.95	-	11.34	(c)
274	EAP 40	"	15. 7.95	7.13 Tv	2.52	
275	EAP 41	"	23. 8.95	11.13 Tv	11.12.62	
276	EAP 42	"	7. 9.95	12.11 Tv	6. 5.53	
277	EAP 43	"	19.10.95	4.11 lps	28. 6.62	
278	EAP 44	"	17. 8.95	6.11 Rton	5.51	
279	EAP 45	"	11. 7.96	6.12 lps	19.12.53	
280	EAP 46	"	"	12.13 lps	13. 8.57	
289	Y 531	1895	24. 2.97	6.10 Tv	28. 6.65	
290	Y 532	"	23. 3.97	6.23 Cns	15. 5.68	(e)
291	Y 533	"	12. 4.97	1.16 Cns	21. 9.50	
292	Y 534	"	30. 4.97	2.13 Tv	28. 6.65	
293	Y 535	"	19. 4.97	11.16 Tv	21. 9.50	
294	Y 536	"	7. 6.97	1.11 Tv	4.43	
295	Y 537	"	26. 9.97	2.10 Tv	"	
296	Y 538	"	10.97	2.15 lps	28.12.51	
297	Y 539	"	24. 7.97	9.08 lps	15. 9.61	
298	Y 540	"	29. 7.97	4.13 Cns	28.12.51	
299	W 1	1897	31. 1.97	5.15 Tv	30. 6.66	(f)
300	W 2	"	10. 2.97	9.09 Tv	5.51	(g)
301	W 3	"	6. 3.97	-	11.34	(c)
302	W 4	"	21. 3.97	7.13 lps	4.35	
303	W 5	"	28. 4.97	6.17 Tv	2.11.49	(h)
304	W 6	"	15. 5.97	11.12 lps	9.57	
305	W 7	"	10. 6.97	5.15 lps	4.35	
306	W 8	"	26. 6.97	9.12 lps	21. 3.67	
307	W 9	"	4. 8.97	4.16 lps	6.35	
308	W 10	"	21. 8.97	12.15 lps		(i)
309	W 11	"	8. 9.97	6.12 lps	28.12.51	

Road No.	Builder's No. and Year		Date in Service	Date/Place Converted	Written Off	Notes
310	W 12	1897	25. 9.97	11.06 Tv	4.35	(j)
311	W 13	"	12.10.97	5.07 Tv	"	(k)
312	W 14	"	28.10.97	3.23 Tv	9.57	
313	W 15	"	13.11.97	4.06 Tv	11.35	(l)
314	W 16	"	30.11.97	10 Tv	4.35	(m)
315	W 17	"	31.12.97	3.06 Tv	6.54	(n)
316	W 18	"	20. 1.98	11.12 Ips	4.35	
317	W 19	1898	3. 2.98	3.14 Ips	"	
318	W 20	"	22. 2.98	11.13 Ips	6.42	
319	W 21	"	24. 3.98	2.19 Cns	2.10.39	
320	W 22	"	16. 4.98	10.13 Ips	28.12.51	
321	W 23	"	5. 5.98	11.12 Ips	19.12.53	
322	W 24	"	23. 5.98	4.14 Ips	4.35	
323	W 25	"	11. 6.98	9.14 Ips	30. 6.66	
324	W 26	"	28. 6.98	7.13 Ips	4.35	
325	W 27	"	19. 7.98	10.16 Ips	"	
326	W 28	"	9. 8.98	11.05 Tv	"	(o)
327	W 29	"	24. 9.98	1.04 Tv	9.57	(p)
328	W 30	"	27.10.98	6.03 Tv	30. 6.66	(q)
329	W 31	1899	25. 2.99	11.13 Ips	4.35	
330	W 32	"	23. 3.99	-	11.34	(c)
331	W 33	"	15. 4.99	8.13 Ips	4.35	
332	W 34	"	4. 5.99	3.04 Tv	21. 9.50	(r)
333	W 35	"	25. 5.99	4.04 Tv	26. 6.58	(s)
334	W 36	"	13. 6.99	8.16 Ips	6.35	
335	W 37	"	27. 6.99	5.12 Rton	6.42	
336	W 41	"	9. 8.99	11.01 Ips	4.35	
337	W 39	"	25. 8.99	3.16 Cns	23. 5.61	
338	W 40	"	13. 9.99	6.14 Ips	4.35	
341	W 43	"	2.11.99	8.12 Ips	21.12.62	
342	W 44	"	21.11.99	5.14 Ips	4.35	
343	W 45	"	6.12.99	5.12 Ips	"	
344	W 48	"	20. 2.00	11.03 Rton	6. 5.53	(d)
345	W 49	"	13. 3.00	8.03 Rton	4.59	
346	W 50	"	30. 3.00	7.12 Ips	8.11.61	
23	W 38	"	19. 6.19	5.25 Cns	21. 3.67	(t)
3	W 42	"	"	5.28 Cns	8.11.61	(t)
42	W 65	1900	"	5.22 Cns	30. 6.66	(t)
54	W 66	"	"	-	11.34	(ct)
95	W 115	1909	"	5.28 Cns	24. 1.63	(t)
539	W 116	"	2.10	3.29 Cns	28. 5.65	(u)

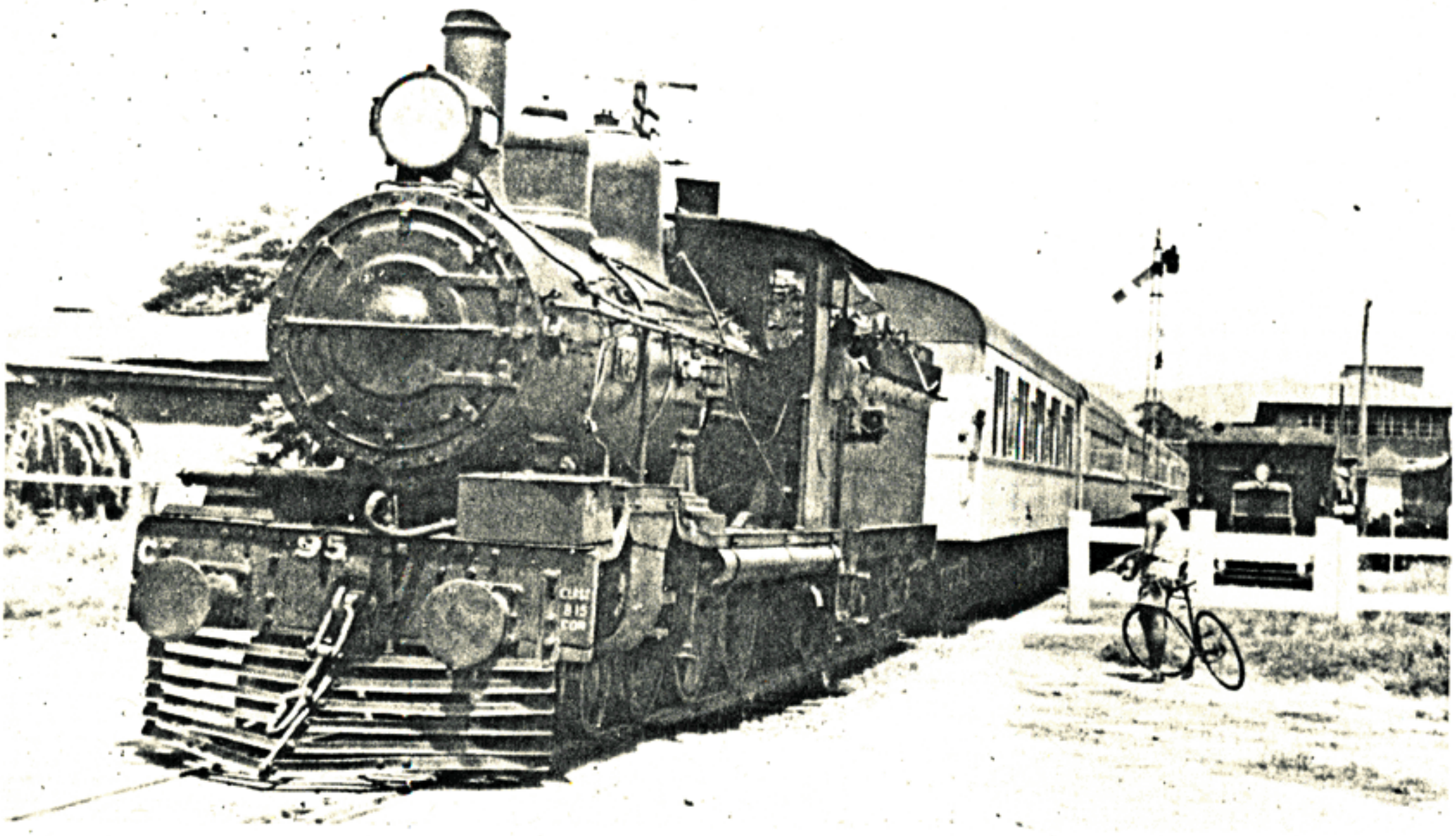
This list supersedes previously published lists by the author. Abbreviations used in this tabulation are as follow.

NW = Nasmyth Wilson & Co.
EAP = Evans, Anderson Phelan & Co.
Y = Yorkshire Engine Co.
W = Walkers Limited.
Ips = Ipswich
Rton = Rockhampton
Tv = Townsville
Cns = Cairns

Notes

(a) Replaced on books 6.10.43; finally written off in 6.57.
(b) May have carried B/No. 29 (and No. 238 consequently 28).
(c) Not converted.
(d) Later used for steam cleaning purposes.
(e) Preserved at Redbank Railway Museum.
(f) Entered service at Townsville on 21.9.97. Now preserved at Maryborough, Qld., by Walkers Ltd.
(g) Entered service at Townsville on 14.9.97.
(h) ditto on 18.2.98.
(i) On conversion was sold to Aramac Shire Council in 12.15.
(j) Entered service at Townsville on 4.12.97.
(k) ditto on 8.2.98.
(l) ditto on 26.4.98.
(m) ditto on 4.5.98.
(n) ditto on 16.4.98.
(o) ditto on 3.10.98.
(p) ditto on 10.10.98.
(q) ditto on 11.11.98.
(r) ditto on 27.7.99.

(s) ditto on 7.8.99.
(t) Taken over from Chillagoe Railway and Mining Co.
(u) Purchased from the Chillagoe Railway and Mining Co. in 12.09; shipped to Cairns 2.10.



Ex Chillagoe Railway engine, renumbered Q.G.R. No. 95, shunts "Sunlander" cars at Cairns in January 1960. It, too, has a chimney with capuchion. *(Photo: J. Armstrong)*

locomotives were added to the Q.G.R. fleet and it was decided it was not worth converting the remaining goods B15s.

1934 to 1950 Period

Depression put many of these older machines into storage, and some of them probably never returned to service. Almost a third of the entire class was written off between November, 1934 and April, 1935, including all the engines that had not been converted. The majority of them had worked in the southern part of the State, so that in 1935 there still remained 12 B15 in the Townsville and 28 in the Cairns District. In fact, at this time, the latter had only six other engines attached to it - four PB15 and two B13.

In June, 1934, just before the first of them were removed from the books, their disposition was as follows:-

	Goods	Converted	Total
Brisbane District	-	26	26
Maryborough District	-	10	10
Sth. Western Division	-	8	8
Central Division	1	2	3
Townsville District	1	17	18
Cairns District	3	29	32

One unusual outcome of the depression years of the thirties was a re-evaluation of engine loads, though, predictably, they were increased. The following table shows how the revised loads in most instances brought the goods train loads of the converted engines to a par on mountainous sections with those of the theoretically greater tractive effort Goods B15s. On undulating or level track, the new loads were much increased

	1913		1932
	B15 Goods 140-lb	B15 Con. 160-lb	B15 Con. 160-lb
Brisbane to Ipswich	280	260	290
Laidley to Gatton	380	350	470
Murphy's Ck. to Toowoomba	145	135	145
Eumundi to Cooroy	190	175	190
Bogantungan to Hannam's Gap	140	125	125
Pentland to Burra	130	120 (a)	140
Jungara to Kuranda	128	103 (a)	130

(a) Mixed train load

During the Second World War, despite a shortage of motive power, some had passed the stage

where they could be repaired and 14 were written off, though No. 212 was overhauled and replaced on the books on 6th October, 1943, and was not finally written off until June, 1957.

In 1949 there were still 53 in service, used on branches, and for shunting and banking duties.

1955 to 1968 Period

As delivery of new locomotives gradually overtook the postwar shortages more were withdrawn in the fifties. In the south they were now used mainly for shunting and even in Cairns they had been largely supplanted by the slightly less elderly PB15s. By June,1959 only 18 were left in service, fourteen of them in the Northern Division. Each other district had retained one for shunting - in Brisbane No. 277, at Mayne, in Maryborough No. 341, in Toowoomba No. 297 and in Rockhampton No. 290. No. 297 also acted as "poison train" engine in the S.W.D.

On 2nd October, 1960 the Queensland Division's Fourth "Annual" Outing was worked from Roma Street to Kilcoy and return by No. 277 resplendant in new black paint, red trim and sparkling brasswork, with clack valves, smokebox door lugs and buffers picked out in white. The train comprised three clerestory (GAS) cars and a van, plus an FGW water gin from Caboolture, a load of 125 tons. Mr. J.W. Knowles recorded a rail H.P. of 280 and I noted a maximum speed of 39 m.p.h. on the trip, while 277 itself recorded a hot big end bearing which was successfully treated by driver C. Bermingham.

The familiar sight of 277 at Mayne soon became a memory for it was written off on 28th August, 1962. Toowoomba's 297 had disappeared before then, and 341 was written off the following December, though it was retained as a stationary steam plant at Maryborough for some time after.

This was not the only one to be thus utilised, but perhaps the most unusual was No. 280, which was placed beside the main line near Beaudesert and fitted with a factory size chimney to act as stationary power plant for pumping water.

This left 290 at Rockhampton and ten still working in the Northern Division. The latter's numbers dwindled in the next four years, but in January, 1965 (sic) the Queensland Division was again able to utilise a B15 Con. when it ran a special excursion up the Cairns Range to Kuranda with No. 306, hauling a relatively light load of three coaches, 64 tons gross. No. 306 was written off in March, 1967 together with the remaining Cairns B15, No. 23.

Only No. 290 was left in service, and it was written off on 15th May, 1968. But it was not cut up, and was afterwards repainted and placed in the Redbank Railway Museum, one of two of the class which still remains. The other is No. 299. After working many years at Townsville and at Cairns, Walkers Limited No. 1 was preserved by the company at Maryborough at the suggestion of the Queensland Division Council, of which the author was then a member.

It is fitting that this historic engine and No. 290, one of the few representatives in this country of the Yorkshire builders, remain in preserved state as interesting examples of a reliable form of machinery of yesteryear.

Acknowledgements

I wish to record thanks to G.E. Bond, D.G. Bailey, W.W. Henderson, R.S. Kerr and J.W. Knowles for their help in one way or another in assisting me to amass a great deal of information on this subject, and to acknowledge the assistance of the staff of the Chief Mechanical Engineer, Ipswich, John Oxley Memorial Library, and State Archives, Brisbane.

Bibliography

To conserve space in this already lengthy article, individual references except those specifically mentioned have been omitted from the text. The following is a list of sources of reference, to which may be added the author's own observations of the latter day working of these steam locomotives.

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THE CLOSURE OF THE NORTH AUSTRALIA RAILWAY

(Bulletin No. 476 - June, 1977)

Mr. P. Rogers writes-

I wish to correct the error inherent in the above article - and indeed in the title itself.

The North Australia Railway was not closed on 30th June, 1976 as stated; rather, services were withdrawn and replaced by the extension of the Alice Springs-Larrimah co-ordinated service to Darwin.

The formal closure of the railway was approved by the Governor General, Sir Zelman Cowen, on 11th February, 1981 in accordance with Section 68B (1) of the Australian National Railways Act 1917.