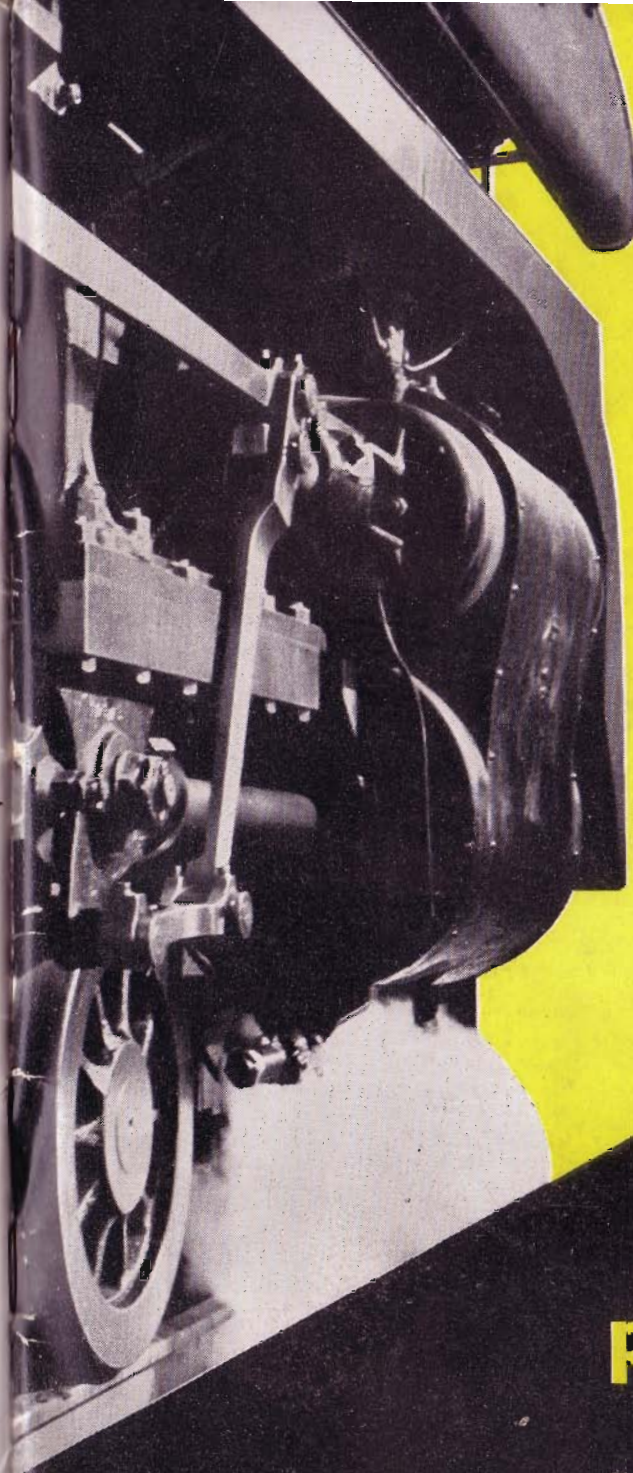


1854 1954

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CENTENARY EDITION
POWER

parade

VICTORIAN
RAILWAYS

Price 1/-

Early Locomotives

TO commemorate the first 100 years of railroading in Australia, the Victorian Railways take pleasure in publishing this booklet illustrating the evolution of the locomotive in Victoria.

On September 9, 1854, Australian railway history was made. A little 30 h.p. locomotive, built in Melbourne, was successfully tested on the new Sandridge line for the Melbourne and Hobson's Bay Railway Company. The public had their first train ride, four days later.

Since then, progressively bigger and better locomotives have kept Victoria's ever-increasing rail traffic on the move. Some early locomotives were not noted for their beauty, but many had a pleasing appearance of balanced power. Utility was uppermost with the designers: the comfort of engine crews received no consideration. The 0-6-0 locomotive, built by George England in 1857, made no provision for either cab or windshield. Later types were equipped with both, even if inadequately.

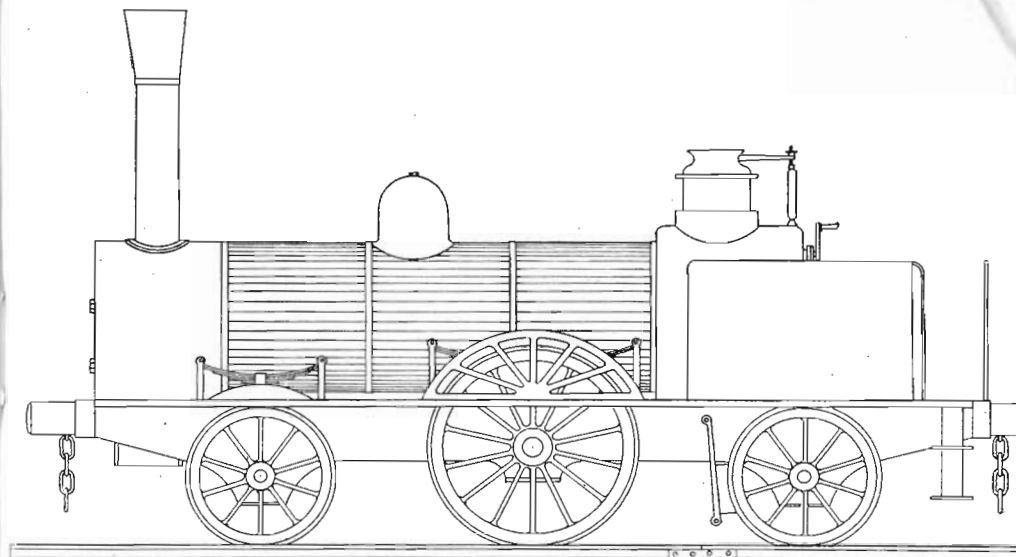
Locomotives of the 1860 period were characterised by the bulbous spark arresters over the funnels. "Coffee-pots," they called them. Despite their appearance, some of these engines were capable of high speed, and it is recorded that engine No. 12 once covered 56 miles from Echuca to Bendigo in 50 minutes. It was a "mercy rush" to take injured men to hospital, who had been working on the River Murray bridge.

An unusual type of locomotive for the Victorian system was the first L class. Water was carried in a saddle tank over the boiler. This kind of tank is still used for several types of locomotives, working on other railway systems.

Some locomotives, obtained in the 1870's, were nicknamed "grasshoppers" from the queer appearance of the safety valves protruding from the rear of the steam domes.

By 1890, high speeds of locomotives were causing concern. Stations were then spaced at wide intervals, and drivers were apt to open the throttle when running behind schedule: sixty miles an hour was common on several lines. As a check on too reckless driving, the first Boyer speed recorder was fitted to an A class locomotive, in 1897.

The many types of locomotives illustrated in *Power Parade* are mileposts, not only in railway design, but in engineering history, as well.

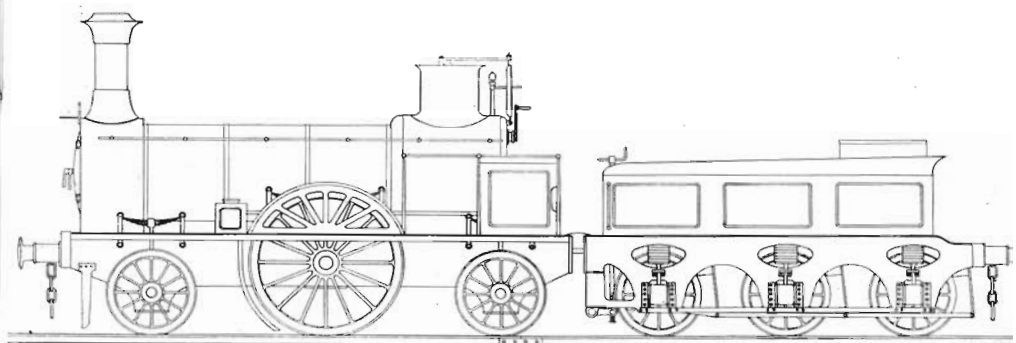


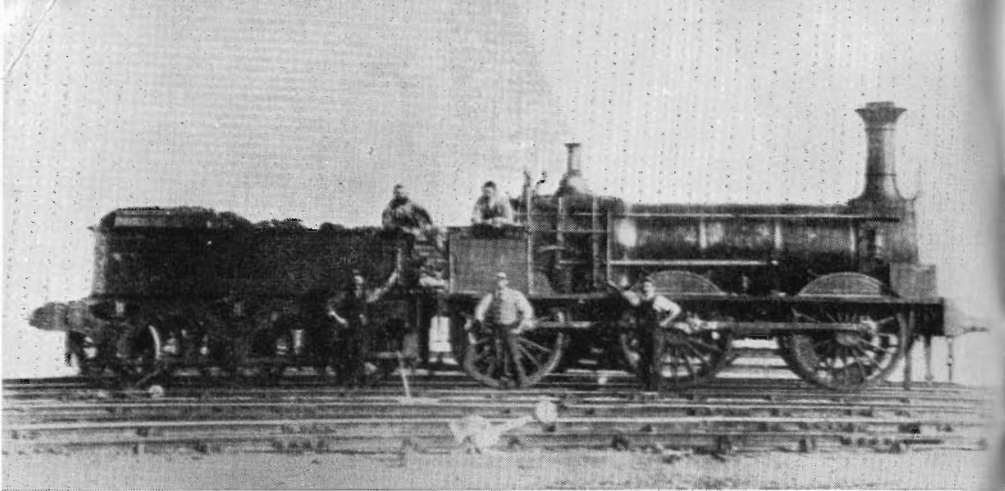
Passenger, 2-2-2 tank type

Built in Melbourne in 1854 by Robertson, Martin, Smith and Company. Hauled the first Melbourne and Hobson's Bay Railway Company's train when the line was officially opened on September 12, 1854. The first orthodox locomotive to be built and run in Australia.

Passenger, 2-2-2 type

Built by George England and Company, of London, in 1857. The original No. 1 of the Victorian Railways Department and its first passenger engine. Went into service in January, 1859. Later, renumbered as 12, and converted about 1871 to 2-4-0 type. Sold to Yarrawonga Shire, 1890, and worked Katamatite Tramway. Returned to V.R., 1893, and renumbered 528. Sold, 1904.





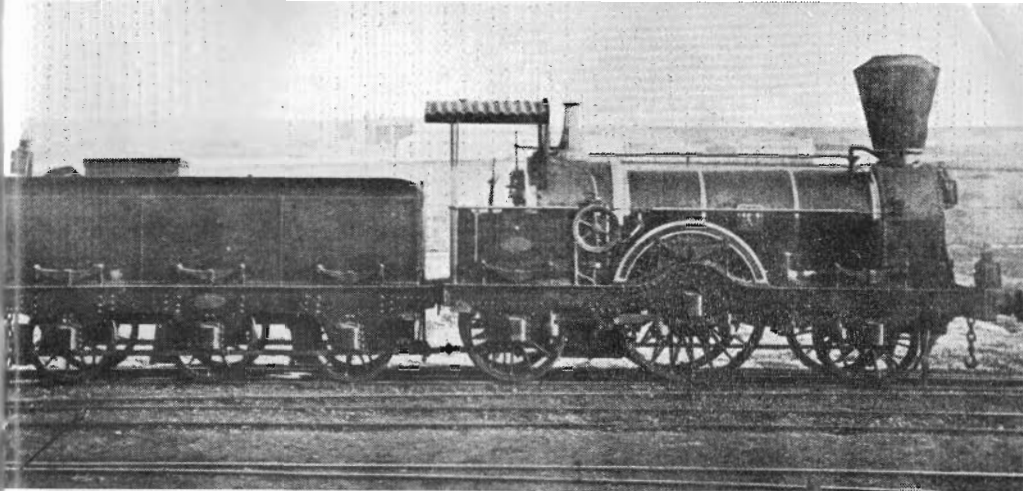
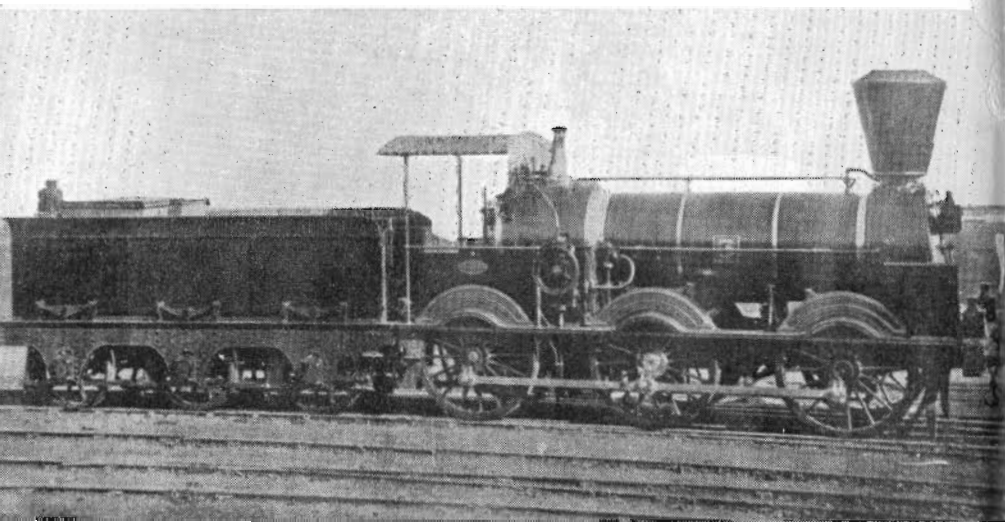
Goods, 0-6-0 type.

They were the first goods engines of the Victorian Railways.

Nos. 2, 3, 4, 5 were built in 1857 by George England & Company, London. They were placed in service in January, 1859. Re-numbered in 1860 as Nos. 11, 13, 15 and 17. Later known as V class.

Goods, 0-6-0 type.

Nos. 1, 3, 5, 7, 9 were built in 1859 by Beyer Peacock, Manchester, England. Placed in service in 1860. Later known as P class, these engines were rebuilt early this century. The last of them was scrapped in 1921 after having run 1,257,136 miles.



Passenger, 2-2-2 type.

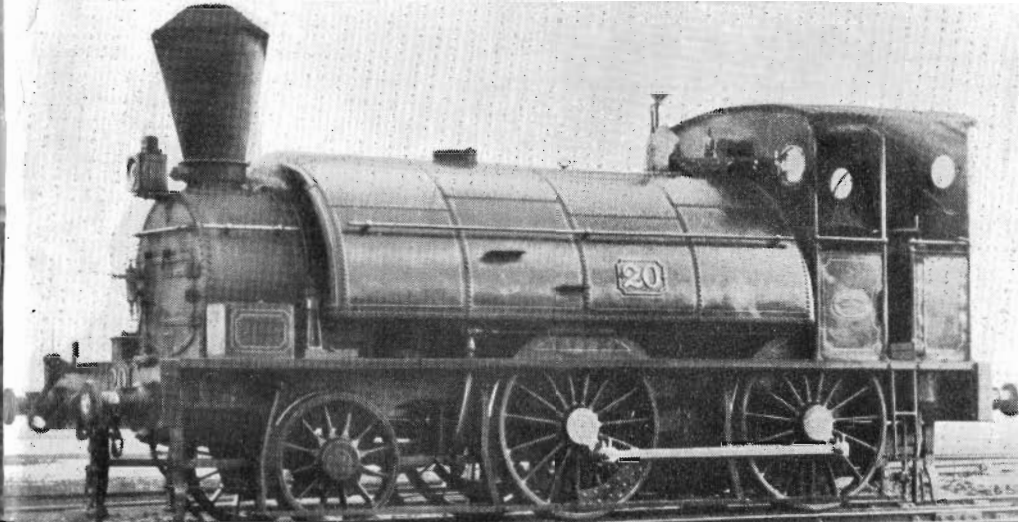
Nos. 2, 4, 6, 8, 10 were built in 1859 by Beyer Peacock, Manchester, England. Placed in service in 1860. They were known as "singles," from their one pair of 6' 0" driving wheels. These engines were rebuilt as 2-4-0 type (with smaller driving wheels) between 1870 and 1874, and were later known as J class. The last of them (No. 6) was scrapped in 1916.

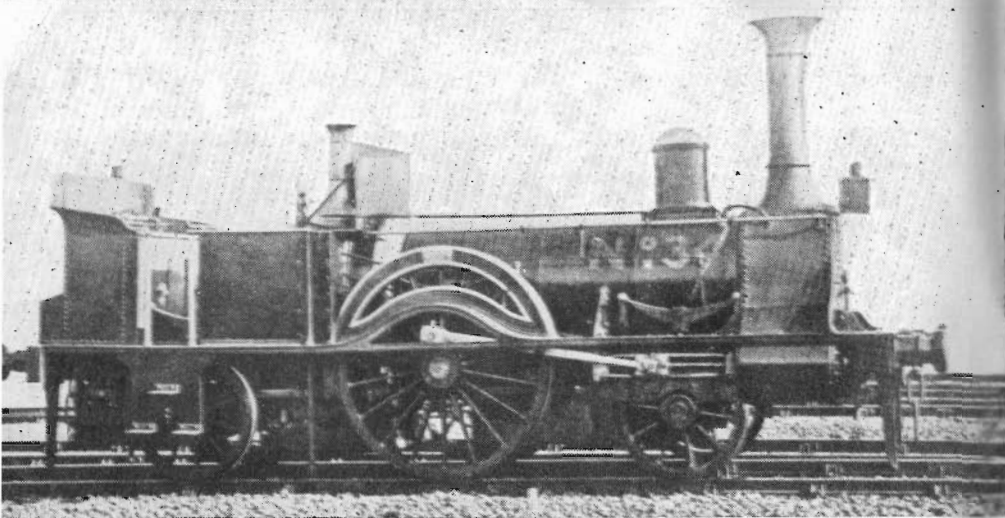
Passenger, 2-4-0 saddle tank type

Nos. 14, 16, 18, 20, 22, 24, 26, built in 1860 by George England & Co., London.

Nos. 28, 30, 32, built in 1860 by Slaughter Gruning, Bristol, England.

Placed in service in 1861. Later known as L class. These were the only saddle tank locomotives used by the Department. The last of them (No. 20) was scrapped in 1906.





Passenger, 2-2-2 tank type

Nos. 34 (Titania) and 36 (Oberon) built by Robert Stephenson, Newcastle, England, 1855.

Nos. 38 (Typhoon) and 40 (Sirocco) built by Stothert & Slaughter, Bristol, England, 1855.

Nos. 42 (Hurricane) and 44 (Cyclone) built by R. & W. Hawthorn, Newcastle, England, 1855.

These engines were taken over from the Geelong & Melbourne Railway Company in 1860. The names were changed to numbers after they were taken over. The last of them (Nos. 34 and 36) were sold in 1889.

Goods, 0-6-0 type

Nos. 23 to 33 (odd numbers), built by Slaughter, Gruning & Company, Bristol, 1861.

Nos. 35 to 57 (odd numbers) built by Robert Stephenson, Newcastle, England, 1862.

Nos. 19, 21, and 59 to 69 (odd numbers), built by Beyer Peacock, Manchester, 1866-1871.

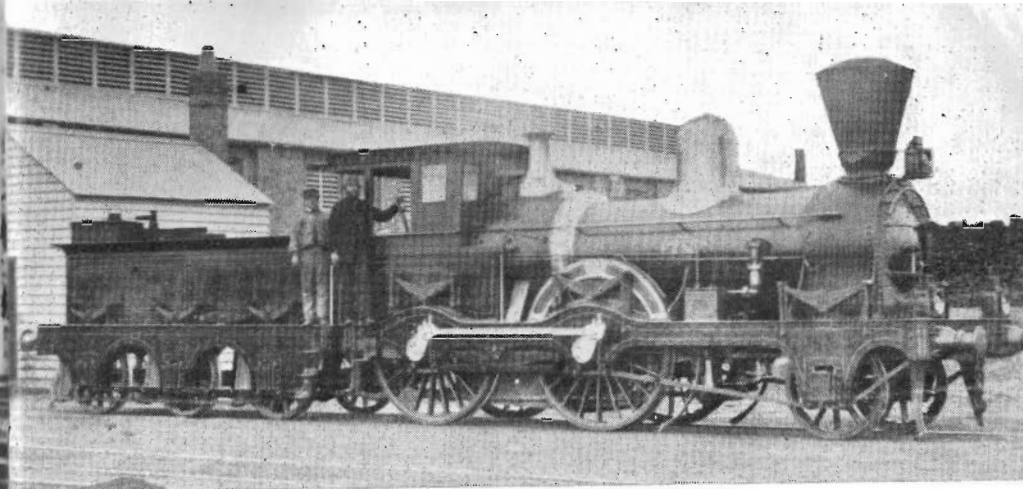
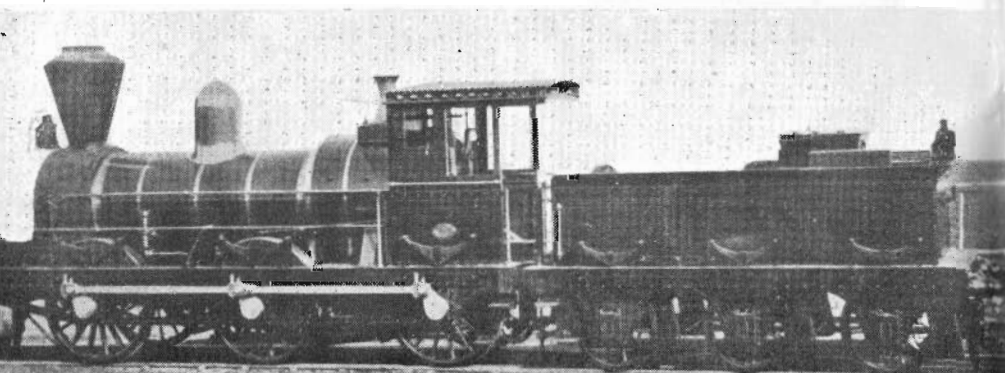
Nos. 71 to 81 (odd numbers), built by Yorkshire Engine Company, Leeds, 1870.

Nos. 127 and 129, built by Victorian Railways, Williamstown Workshops, 1879.

Nos. 131 to 143 (odd numbers), built by Phoenix Foundry Company, Ballarat, 1878-1879.

Nos. 145 to 149 (odd numbers), built by Beyer Peacock, Manchester, 1877.

Later known as O class. The last of them (No. 135) was scrapped on 10/6/1922.



Passenger, 2-4-0 type

Nos. 46 to 70 (even numbers), built by Beyer Peacock, Manchester, 1862.

Nos. 72 to 96 (even numbers), built by R. & W. Hawthorn, Newcastle, England, 1862.

Nos. 102 to 112 (even numbers), built by Beyer Peacock, Manchester, 1871.

Nos. 186 and 188 built by Phoenix Foundry Company, Ballarat, 1880.

They were later known as B class. The last of them (No. 76) was scrapped in June, 1917.

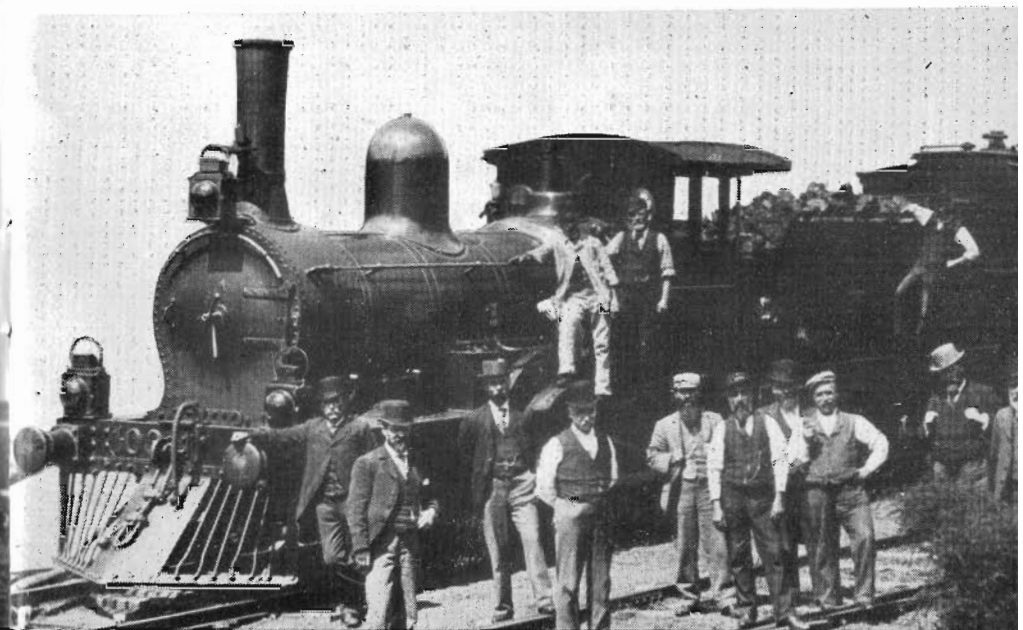
Passenger, 2-4-0 type

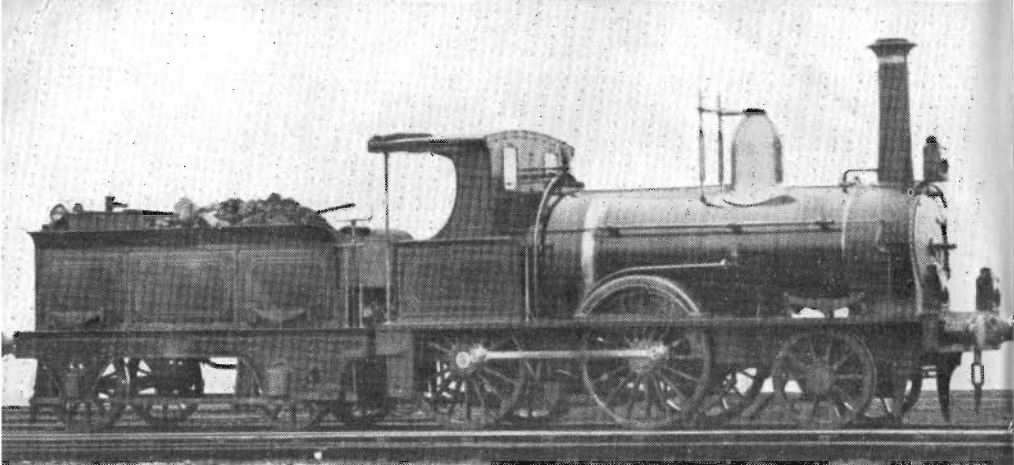
No. 100, built in 1871 at Williamstown Workshops. The first engine to be built by the Victorian Railways Department.

Classed as E in 1886, later unclassified.

Rebuilt in 1904, scrapped in 1916.

For many years No. 100 was the Commissioners' special tour train engine.





Passenger, 2-4-0 type

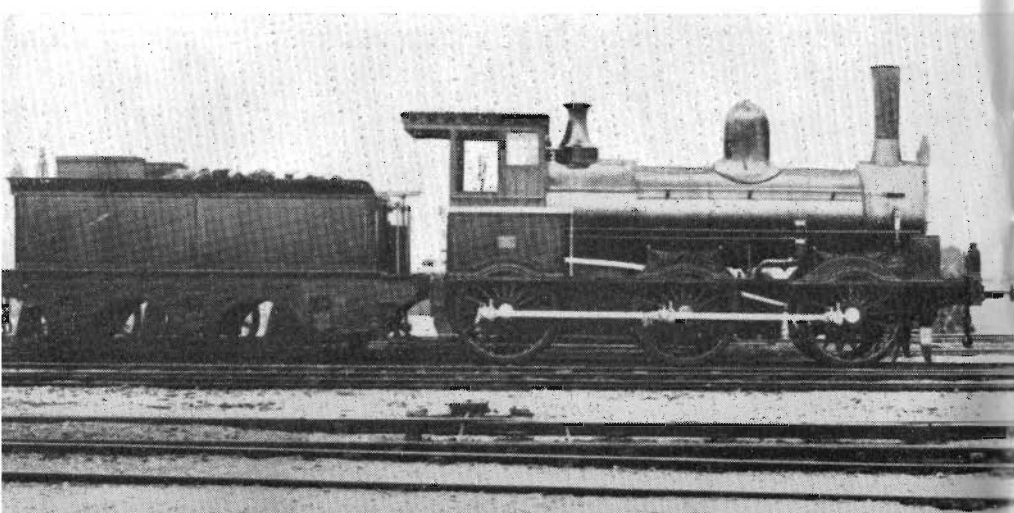
No. 98 built by Beyer Peacock & Company, Manchester, England, 1873.

Nos. 126 to 144 (even numbers) and 166 to 184 (even numbers), built by Phoenix Foundry Company, Ballarat, 1876-79. They were later known as F class.

Nos. 172-184 (even numbers), were rebuilt as 2-4-2 tank engines in 1910-11, and were classed as F Motors. The last of the F class tender engines (No. 138) was scrapped in 1925; the last of the F Motors (No. 174) was scrapped in 1929.

Goods, 0-6-0 type

Nos. 83 to 101 (odd numbers), built by Phoenix Foundry Company, Ballarat, 1873. These were the first of more than 350 locomotives built for the V.R. by Phoenix between 1873 and 1904. They were later known as Q class. The last of them (No. 99) was sold in September, 1908.

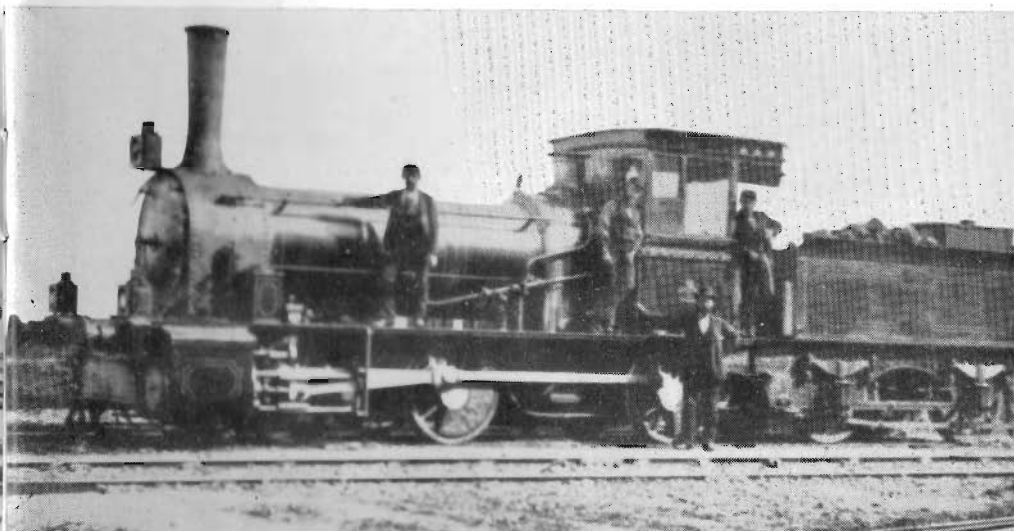


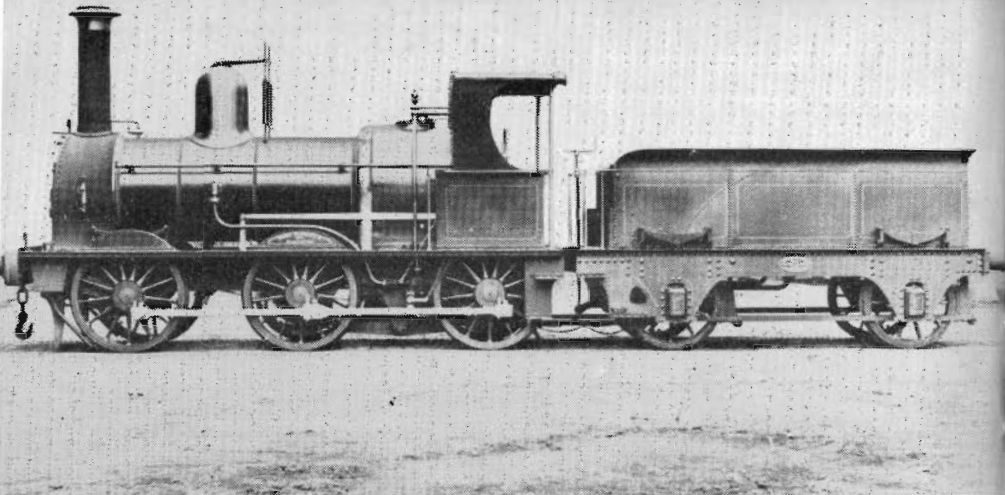
Goods, 0-6-0 type for light lines

Nos. 107 to 123 (odd numbers), built by Phoenix Foundry Company, Ballarat, 1874. They were later known as U class. The last of them was scrapped in 1908.

Goods, 0-6-0 type

Nos. 103 and 105 built by the Victorian Railways at Williamstown Workshops, 1873. They were the second and third engines built by the Victorian Railways. These engines were in the unclassified group. No. 103 was scrapped in 1921 and No. 105 in 1924.





Goods, 0-6-0 type

No. 125 built by Beyer Peacock, Manchester, 1873.

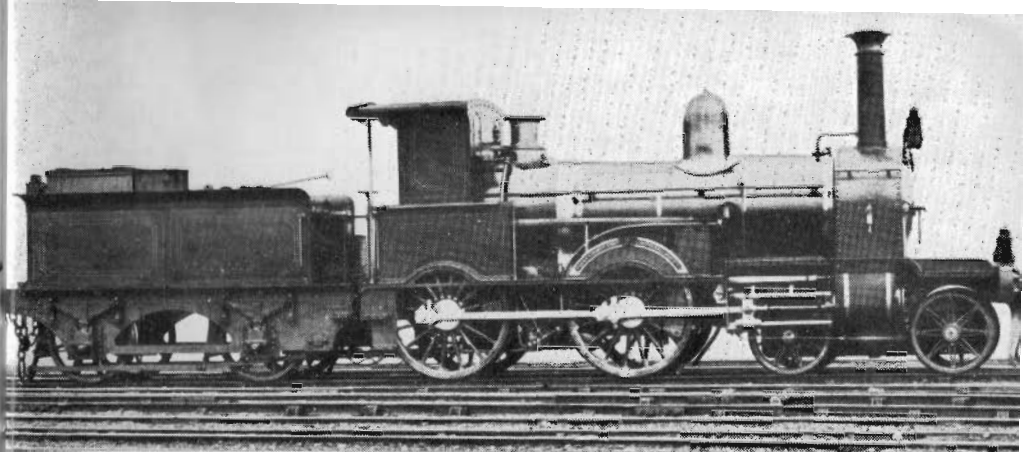
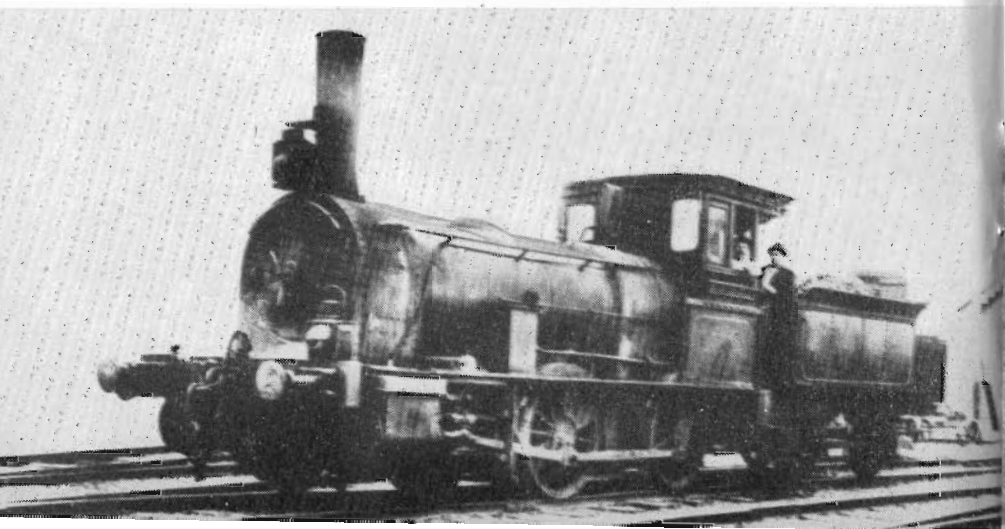
Nos. 249 to 283 (odd numbers), built by Phoenix Foundry, Ballarat, 1884.

Nos. 1, 2, 3 and 4, built by Beyer Peacock, Manchester, 1875-77, were taken over from the Deniliquin and Moama Railway Company, when the Deniliquin line was acquired in 1923.

Later known as T class. Some of them were re-numbered in 1923. These engines, with one exception (No. 265 re-numbered 94, which is stored), have been either scrapped or sold. No. 267 sold to the now defunct Kerang and Koondrook Tramway in 1921.

Passenger, 2-4-0 type for light lines

Nos. 114 to 124 (even numbers), built by Phoenix Foundry, Company, Ballarat, 1874. They were later known as K class. The last of them (No. 118) was scrapped in 1905.

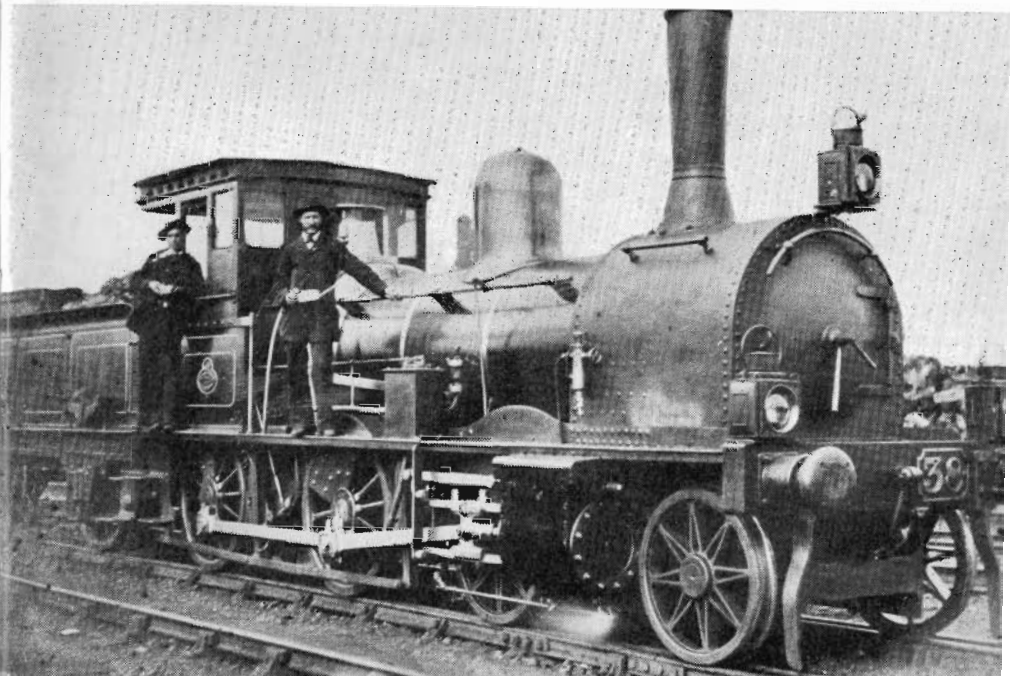


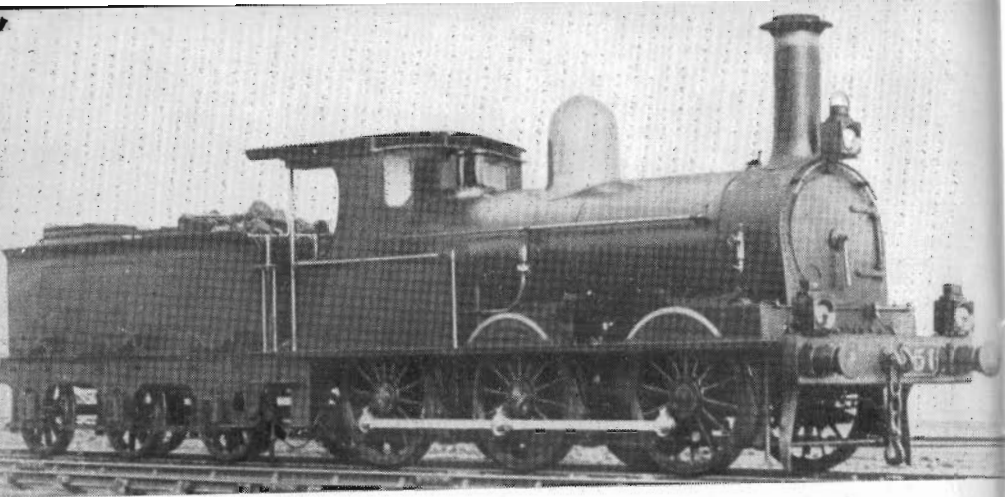
Passenger, 4-4-0 type

Nos. 146 to 160 (even numbers), built by Phoenix Foundry, Company, Ballarat, 1877. They were later known as H class. The last of them (No. 158) was scrapped in 1916.

Passenger, 4-4-0 type

Nos. 38 and 44, built at Williamstown Workshops, 1876. No. 44 was rebuilt with a 130 lb. domeless boiler in 1882. They were later known as G class. Both were scrapped in 1904.





Goods, 0-6-0 type

No. 151, built by Beyer Peacock & Company, Manchester, 1878.

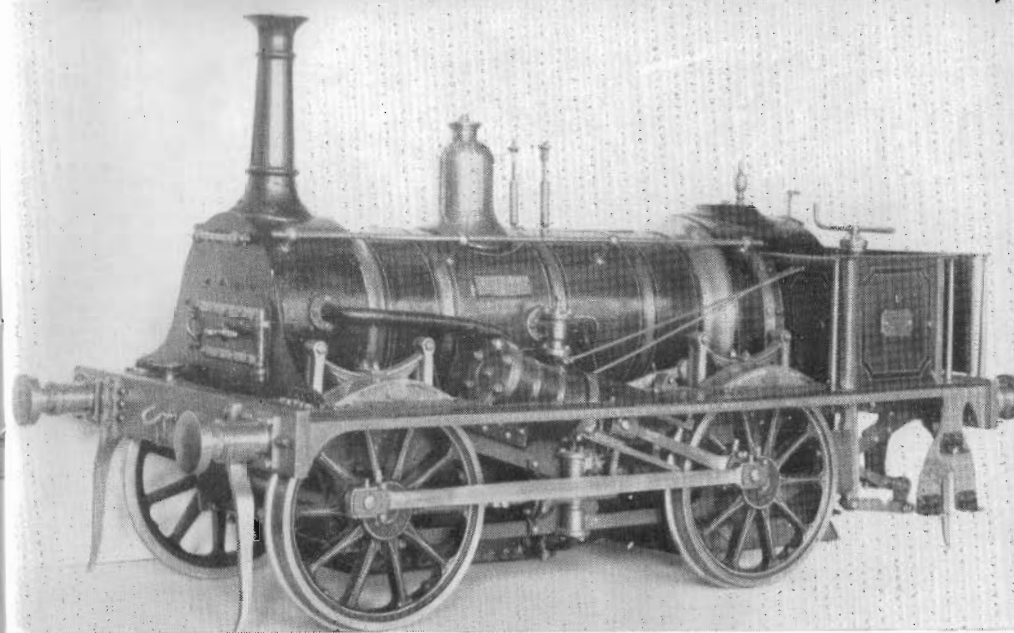
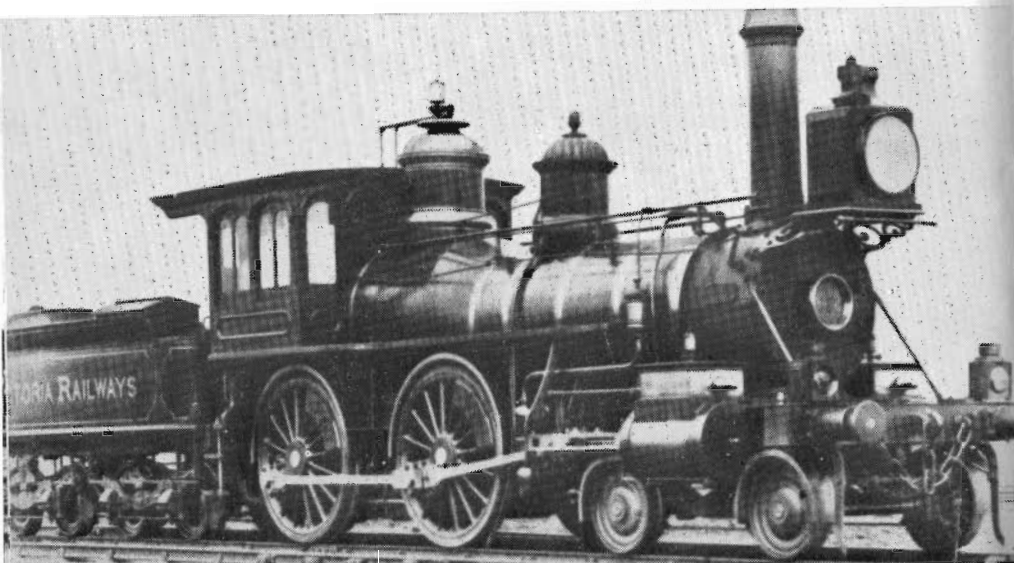
Nos. 157 to 195 (odd numbers), 247 and 285 to 351 (odd numbers), built by Phoenix Foundry Company, Ballarat, 1881-86.

Nos. 11, 13 and 443 built by Beyer Peacock, Manchester, 1884 and 1888, were purchased from railway contractors.

These locomotives were classified in 1886 as R class. From 1889 they were known as Old R class to distinguish them from a later type known as New R class. The last of the Old R class (No. 317) was scrapped in 1944.

Passenger, 4-4-0 type

Nos. 162 and 164, built by Rogers Locomotive Works, Patterson, N.J., U.S.A., 1877. These were the first V.R. locomotives imported from U.S.A. They were later known as D class, but were unclassified in 1888. They were scrapped in 1907.



Pier shunting engines, 0-4-0 well tank type

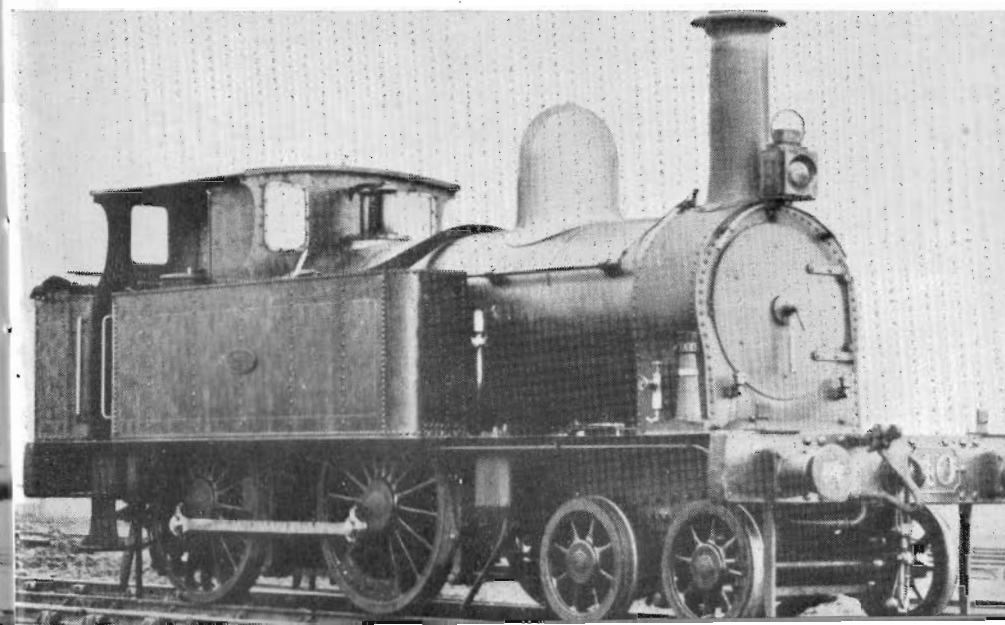
Nos. 5 and 24, built by Robert Stephenson & Sons., Newcastle, England, in 1857 and 1874 respectively. These engines were taken over from the Melbourne & Hobson's Bay United Railway Company in 1878. They were withdrawn from service in 1904. This photograph is of a model of No. 5, which is now on display at the Museum of Applied Science, Melbourne.

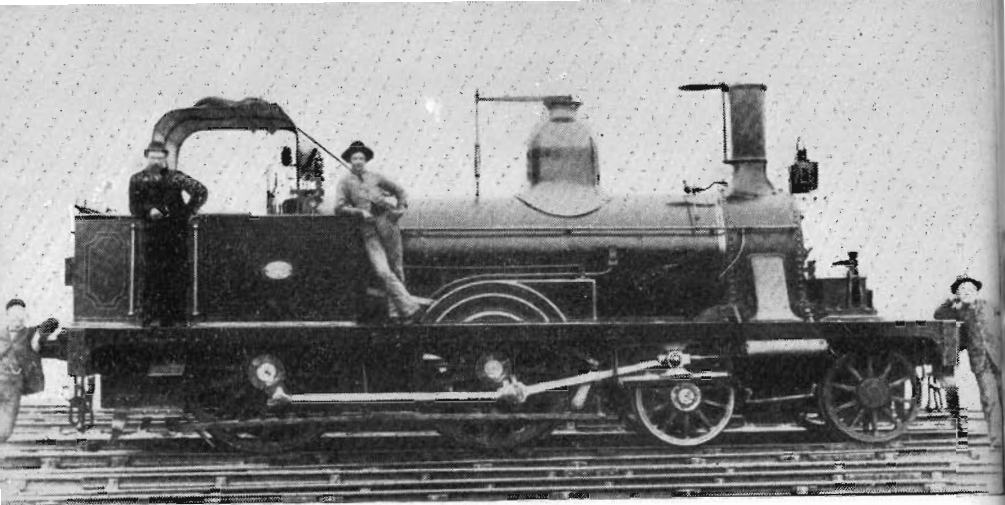
Passenger, 4-4-0 tank type

No. 40, built by Beyer Peacock & Co., Manchester, England, in 1878.

Nos. 210 to 240 (even numbers) and 312 to 320 (even numbers), built by Phoenix Foundry Company, Ballarat, 1834-86.

Later known as M class. They were rebuilt as 4-4-2 tank engines, 1900-07. The last of them was scrapped in 1922.





Passenger, 4-4-0 well tank type

Nos. 278 to 288 (even numbers), built by Robert Stephenson & Company, Newcastle, England, 1870-77. These were taken over from The Melbourne & Hobson's Bay United Railway Company, in 1878.

Nos. 42, 262 to 276 (even numbers) and 306 to 310 (even numbers), built by the Phoenix Foundry Company, Ballarat, 1882-83.

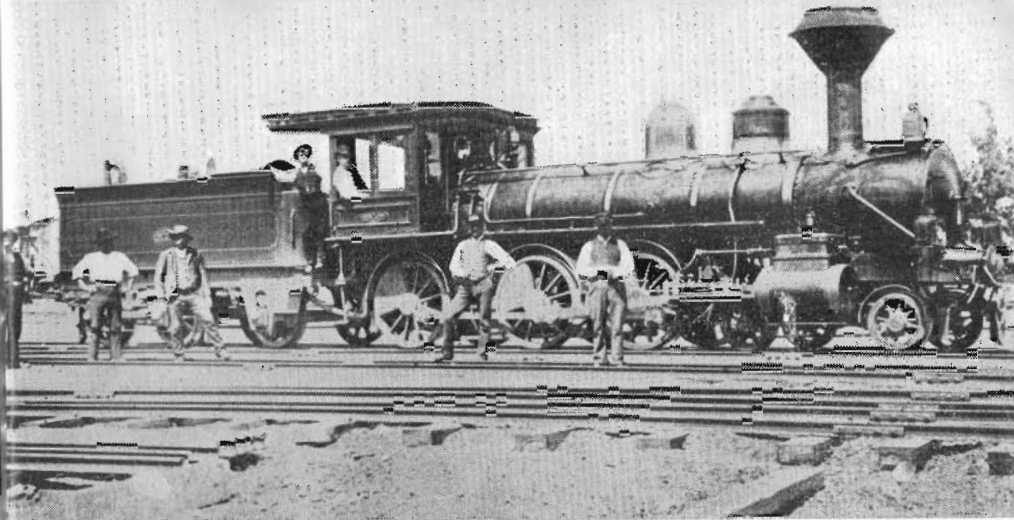
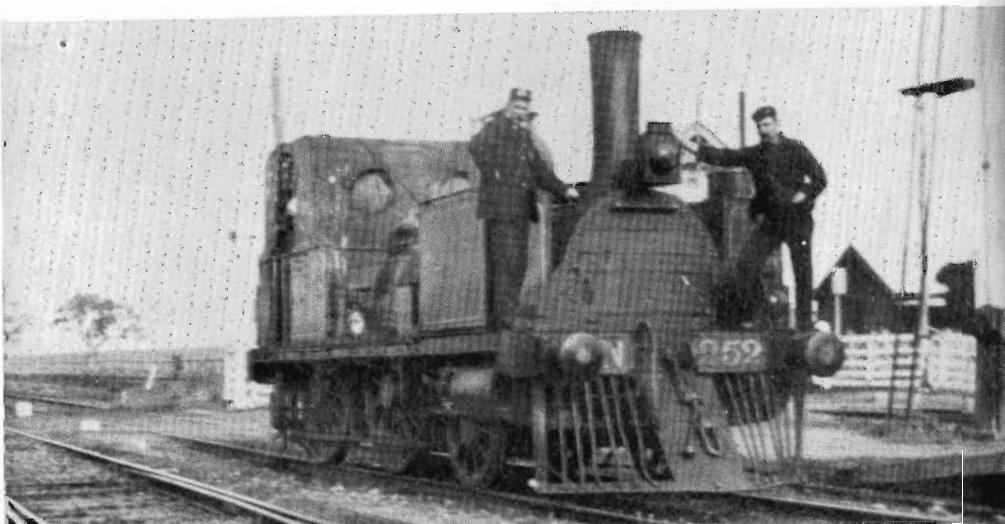
Nos. 290 to 304 (even numbers), built by Robison Bros., Melbourne, 1880.

They were later known as C class.

The last of them (No. 294) was scrapped in 1916.

Passenger, 2-4-0 well tank type

Nos. 242 to 260 (even numbers), built by Robert Stephenson & Co., Newcastle, England, 1858-70. These engines were taken over from The Melbourne & Hobson's Bay United Railway Company in 1878. They were later known as N class. Four of them were rebuilt as motor engines, 1893-95. The last of them (No. 254) was scrapped in June, 1906.



Goods, 4-6-0 type

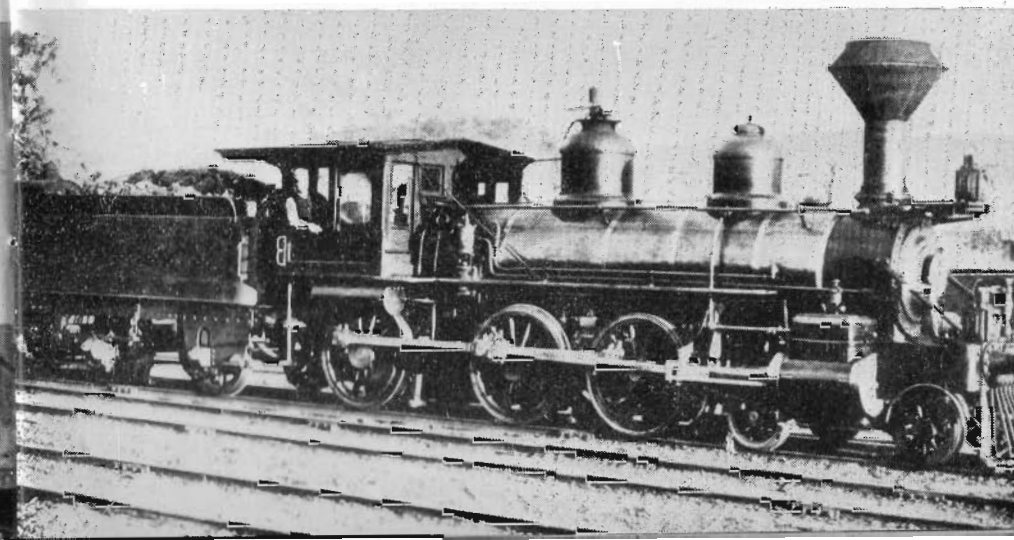
Nos. 153, 155 and 217 to 235 (odd numbers), built by The Baldwin Locomotive Works, Philadelphia, Penn., U.S.A., 1879-83.

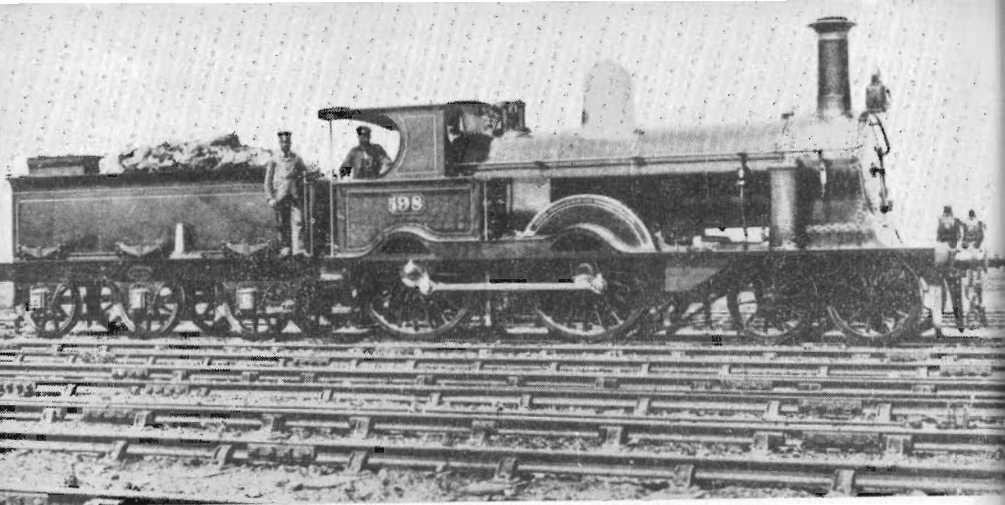
These were later known as W class.

S 197 (built by Phoenix Foundry Company, Ballarat, 1883), was later rebuilt with a W class boiler, and was reclassified as a W in 1908. All these engines were scrapped or sold between 1924 and 1926.

Goods, 4-6-0 type

Nos. 197 to 215 (odd numbers), built by Phoenix Foundry Company, Ballarat, 1883. They were later known as S class. The last of them (No. 197) was later rebuilt and was reclassified as W class in 1908. It was scrapped in 1926.



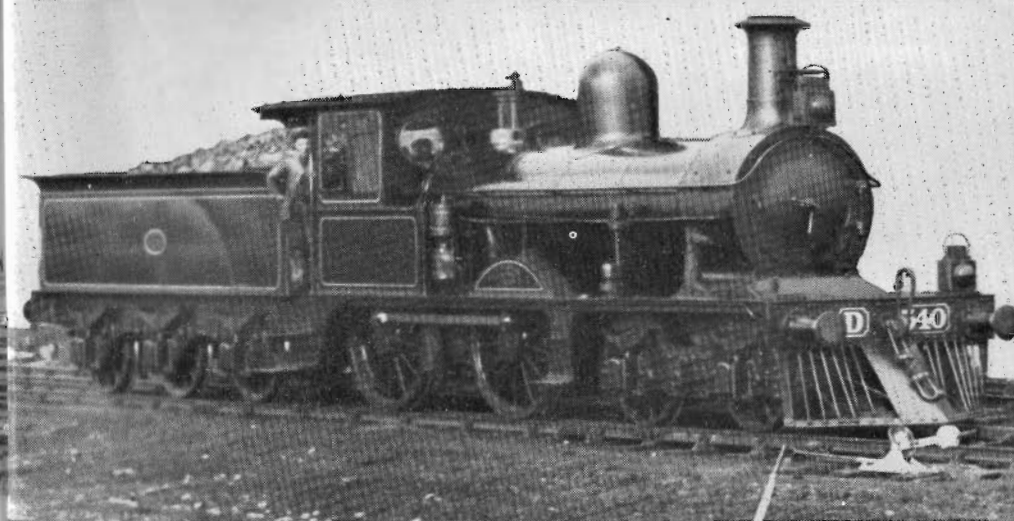
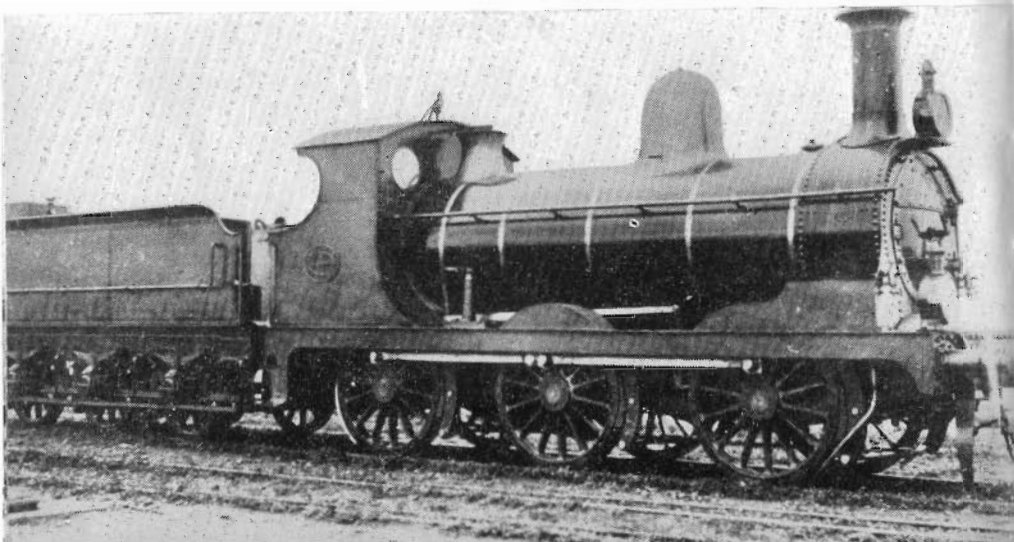


Passenger, 4-4-0 type

Nos. 190 to 208 (even numbers), built by Beyer Peacock & Co., Manchester, England, 1884. They were later known as old A class. Between 1900 and 1902, they were rebuilt with standard 175 lb. per sq. in. boilers. The last of them (No. 206) was scrapped in 1924.

Goods, 0-6-0 type

Nos. 237 to 245 (odd numbers), built by Societe St. Leonard, Liege, Belgium, 1883. They were later known as the Belgian R class. The last of them (No. 239) was scrapped in 1920.

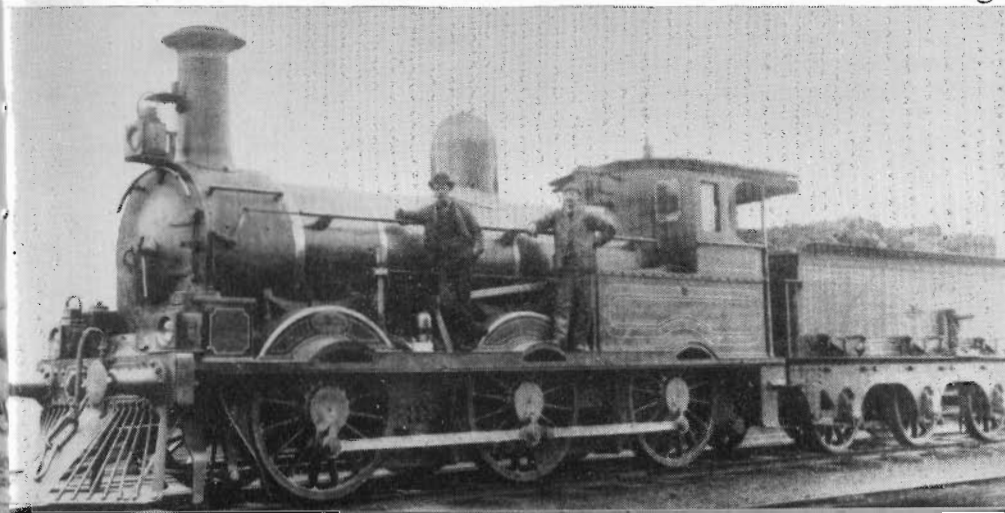


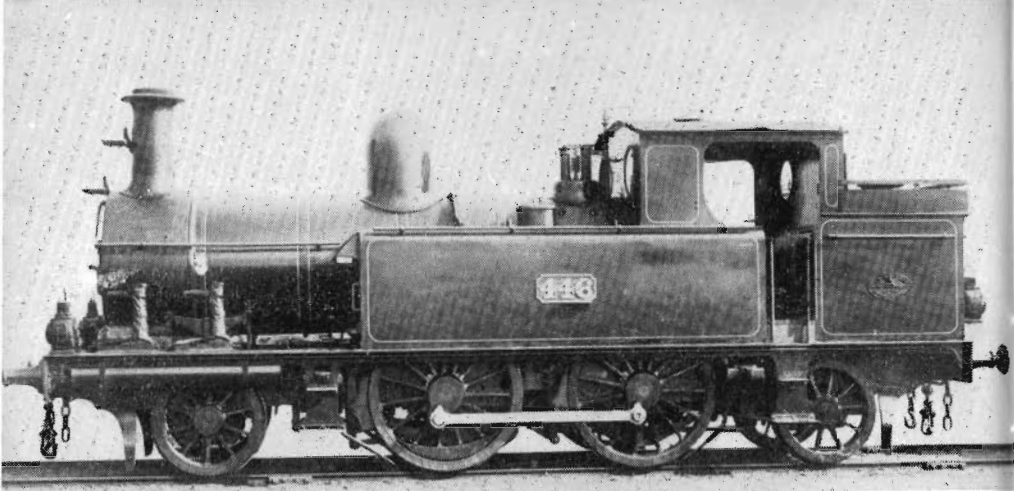
Passenger, 4-4-0, D class (2nd series)

Nos. 82, 92, 122, 242, 244, 248, 250, 260 and 322 to 344 (even numbers), built by Phoenix Foundry Company, Ballarat, 1887-88. They were rebuilt with 160 lb. sq. in. boilers, 1904-09. Nos. 328, 330 and 340 were re-numbered 190, 191 and 194 respectively in 1923. The last of them (No. 194) was scrapped in 1928. They were known as D class.

Goods, 0-6-0 type, X class

Nos. 353 to 381 (odd numbers), built by Phoenix Foundry Company, Ballarat, 1886-87. The last of them (No. 373) was scrapped in 1920. They were known as X class.





Suburban Passenger, 2-4-2 tank type, E Class (2nd series)

No. 426 Pattern Engine, built by Kitson and Company, Leeds, England, 1888.

Nos. 346 to 394 (evens), built by Phoenix Foundry Company, Ballarat, 1889-1890.

Nos. 12, 34, 36, 428 to 460 (evens), built by Phoenix Foundry Company, Ballarat, 1892-1894.

Nos. 472 to 520 (evens), built by Melbourne Locomotive and Engineering Works (David Munro and Company), 1892-1894.

Total number in class : 71.

3 converted to 0-6-2 tank type shunting engines, 1898 and 1906.
20 sold to South Australian Railways, 1920-21.

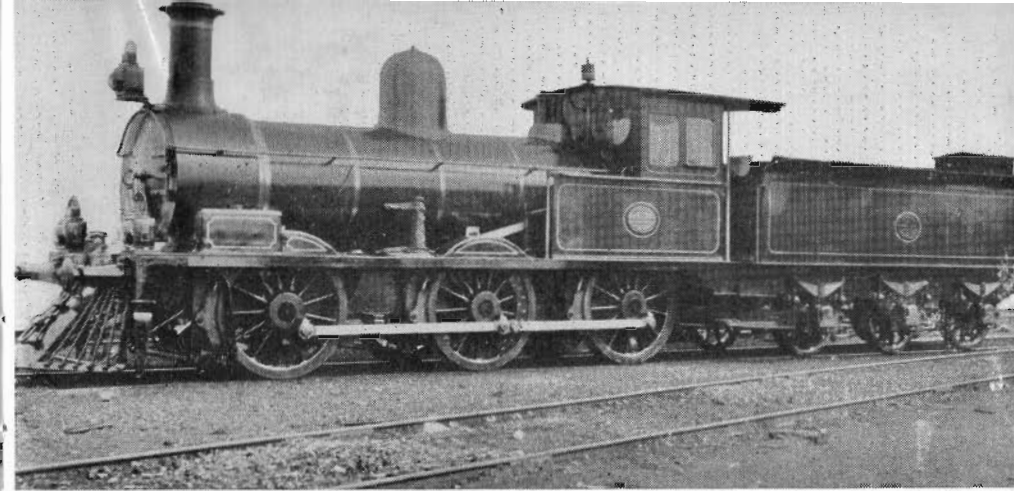
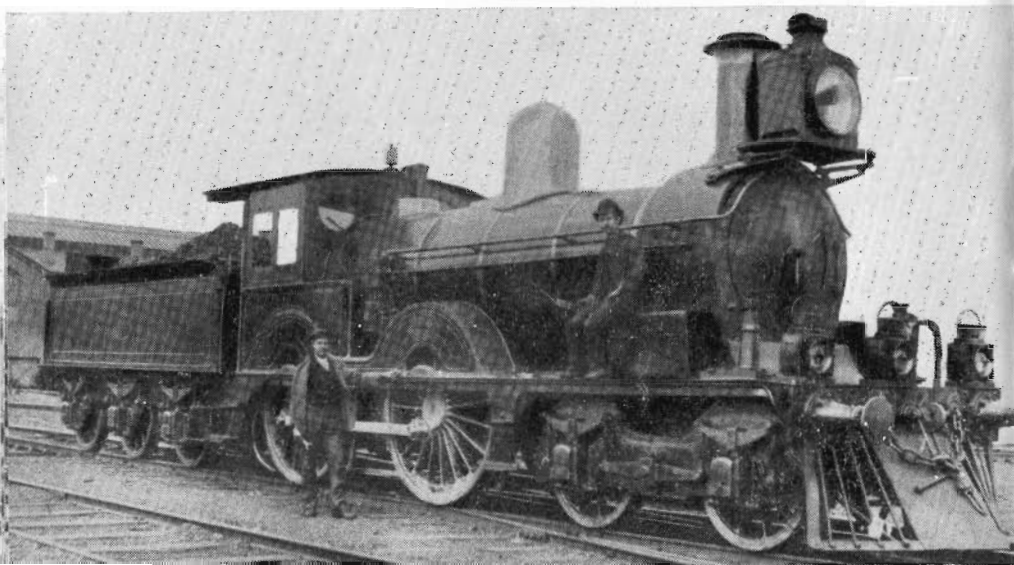
In 1920's the remaining E's were converted to 0-6-2 tank type shunting engines, and renumbered.

Passenger, 4-4-0 type, New A Class

Nos. 396 to 424 ; built 1889-1891 by Phoenix Foundry Company, Ballarat.

Number in class : 15.

The last, No. 412, was scrapped in February, 1925.



Goods, 0-6-0 type, New R Class

Nos. 447 to 495 (odds), built 1889-1891 by Robison Bros., Campbell and Sloss, South Melbourne.

Number in class : 25.

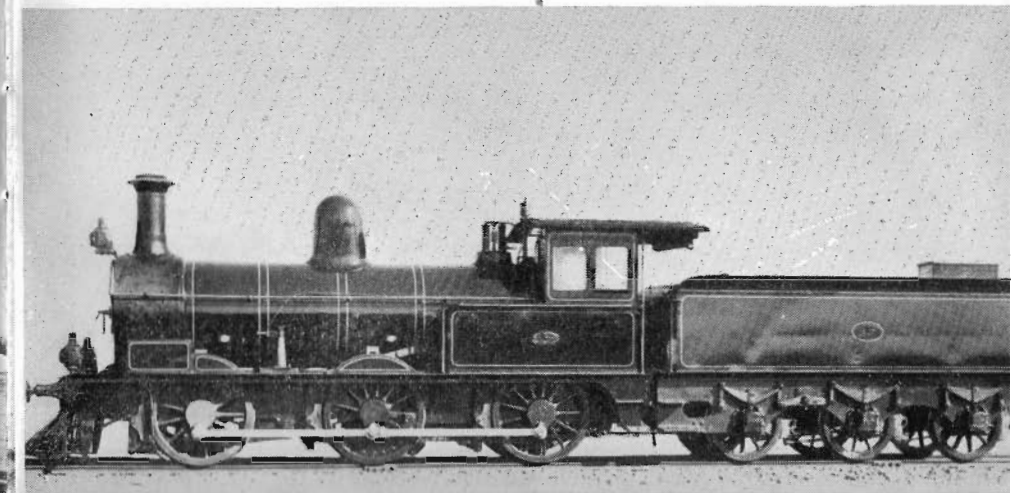
Rebuilt 1905-1910 with larger boilers and cylinders and reclassified as RY.

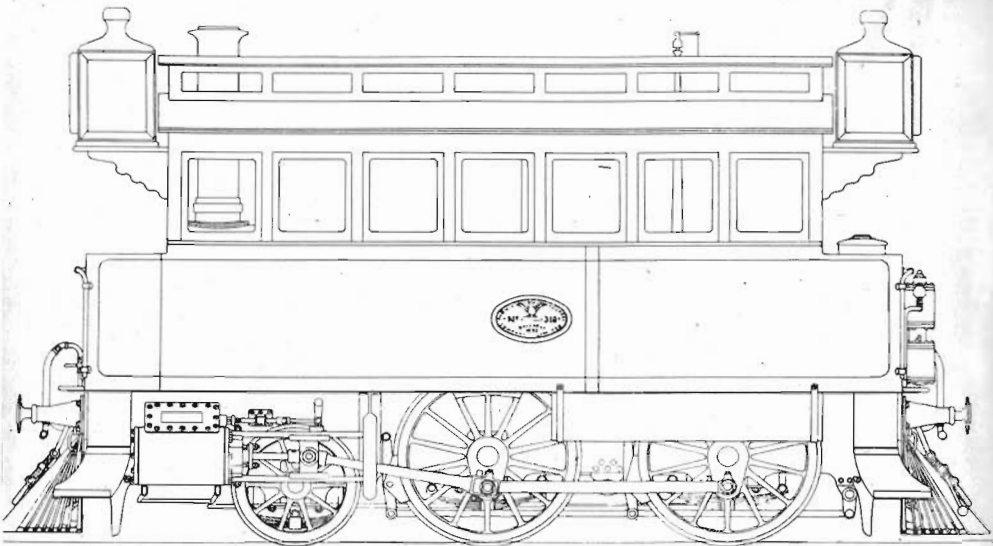
Reclassified as Y, 1924-1931.

Goods, 0-6-0 type, Y Class

No. 445 Pattern Engine, built 1888 by Kitson and Company, Leeds, England.

Nos. 383 to 441 (odds), built 1889 by Phoenix Foundry Company, Ballarat. Number in Class : 31.





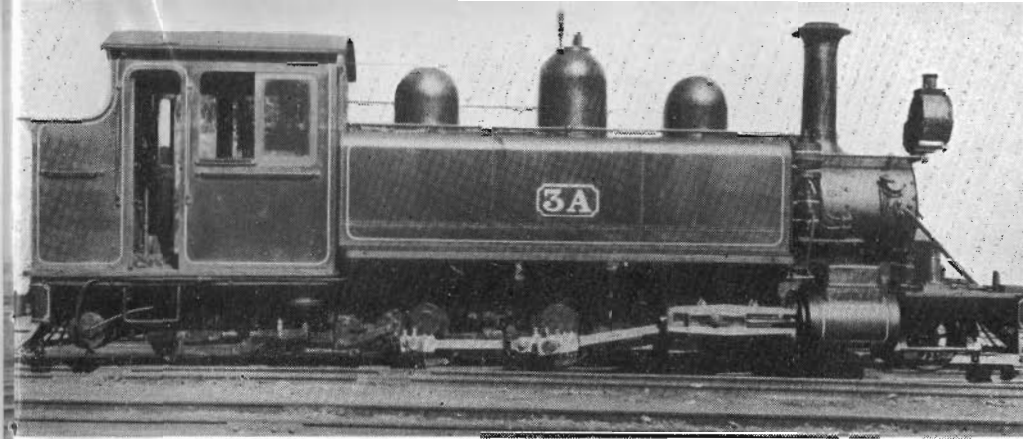
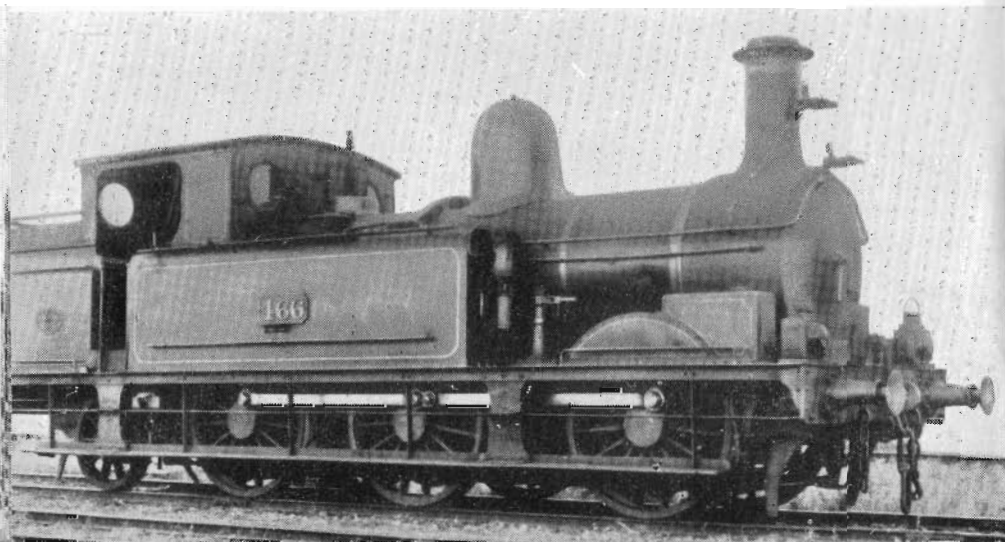
**Passenger Motor Engine, 2-4-0 tank type,
Z Class, Nos. 522 and 524.**

Built 1893 by Phoenix Foundry Company, Ballarat. Scrapped in 1910 and 1911.

Goods, 0-6-2 tank type, EF Class

Nos. 462 to 470 (evens), built by Phoenix Foundry Company, Ballarat, 1893. Number in original class: 5. This total was increased by conversions of the 2-6-2 tank type E class between 1898 and 1923.

In the late 1920's, the EF's were reclassified as E (3rd series), shunting engines.



2-6-2 tank type 2' 6" gauge, NA Class

Known as Class NA.

Nos. 1A and 2A, built 1898 by Baldwin Locomotive Works.

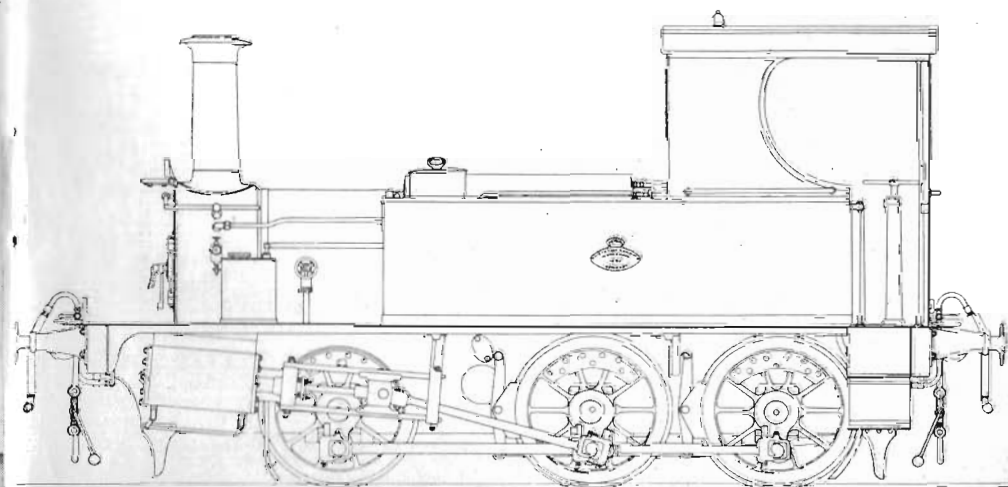
Nos. 3 to 17, inclusive, built at Newport Workshops, 1900 to 1915.

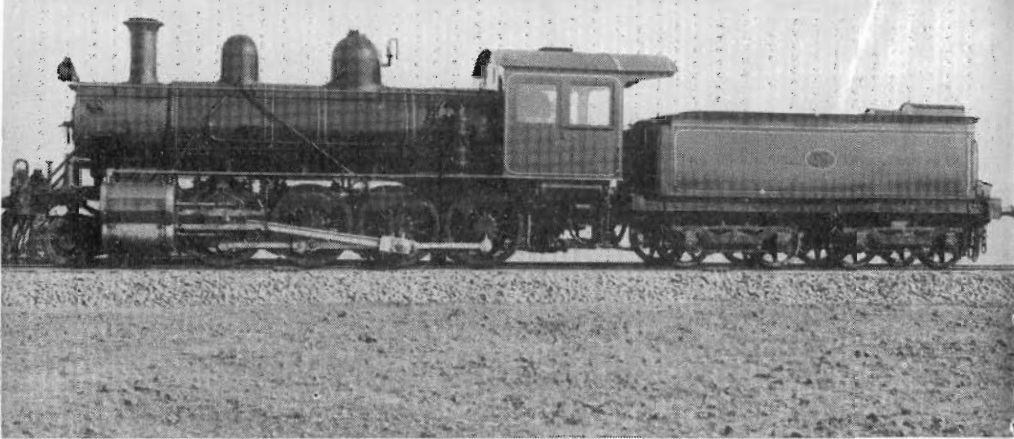
Nos. 2A and 4A were compound locomotives.

These 17 narrow gauge engines worked on Wangaratta-Whitfield, Ferntree Gully-Gembrook, Colac-Beech Forest-Crowes, and Moe-Walhalla branch lines. 8 still remain on registers.

**Goods Motor Engine, 0-6-0 tank type,
Z Class, No. 526.**

Built 1893. This was the first locomotive built at Newport Workshops. Converted to No. 3 loco. steam crane in 1904 and still in service.





Goods, 2-8-0 type (compound cylinders) V Class, (2nd Series).

No. 499 Pattern engine, built 1900 by Baldwin Locomotive Works, Philadelphia, U.S.A.

Nos. 501 to 529 (odds), built 1901-1902 by Phoenix Foundry Company, Ballarat.

No. in class : 16.

Converted to simple expansion cylinders 1912-1913.

(Renumbered) 200 to 215.

The last, No. 200 (ex 499), scrapped in January, 1930.

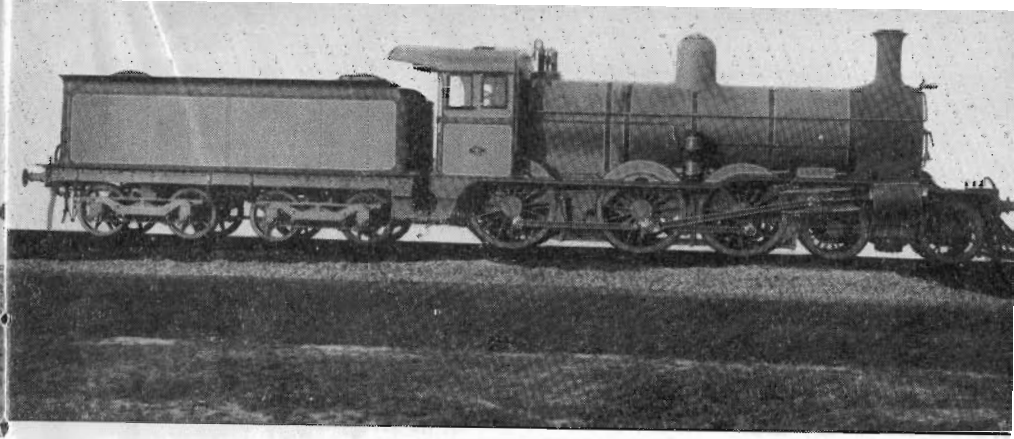
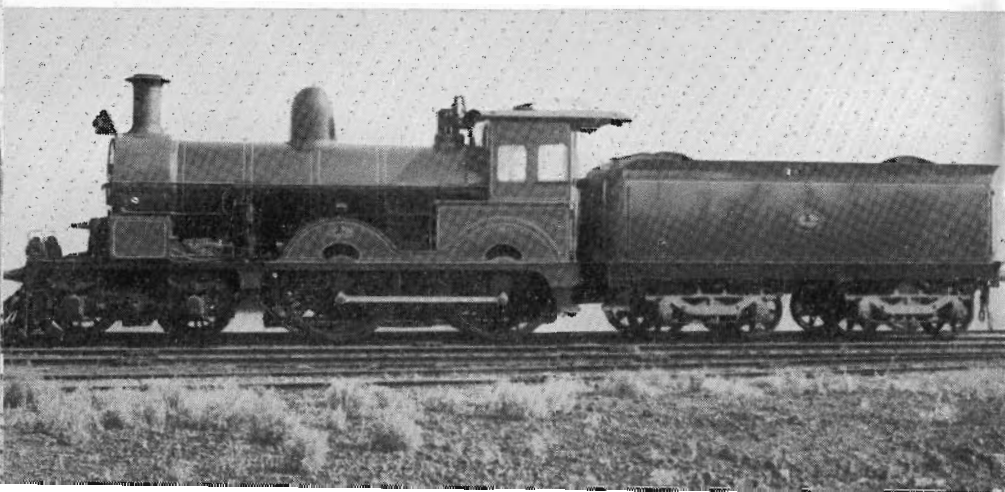
Passenger, 4-4-0 type, AA Class

Nos. 530 to 558 (evens), 562 to 570 (evens), built 1900-1903 by Phoenix Foundry Company, Ballarat.

Number in class : 20.

(Renumbered) 542 to 74, 544 to 75, 548 to 76, 550 to 77, 562 to 82 566 to 84, 570 to 86. Others unaltered.

The last, Nos. 74, 75, 84, 86 (ex 542, 544, 566, 570), were scrapped in January, 1932.



4-6-0 type, DP Class

Built 1902-1920.

(138) Newport Workshops, 1902-1920.

(7) Phoenix Foundry Company, Ballarat, 1904.

(20) Baldwin Locomotive Works, Phila., U.S.A., 1911.

(20) Beyer Peacock and Company Limited, Manchester, England, 1911-1912.

(20) Walkers Ltd., Maryborough, Q'land., 1913.

(40) Thompson's, Castlemaine, Vic., 1914-1916.

(8) Ballarat North Railway Workshops, 1919-1920.

(8) Bendigo North Railway Workshops, 1919-1920.

Total number in class : 261.

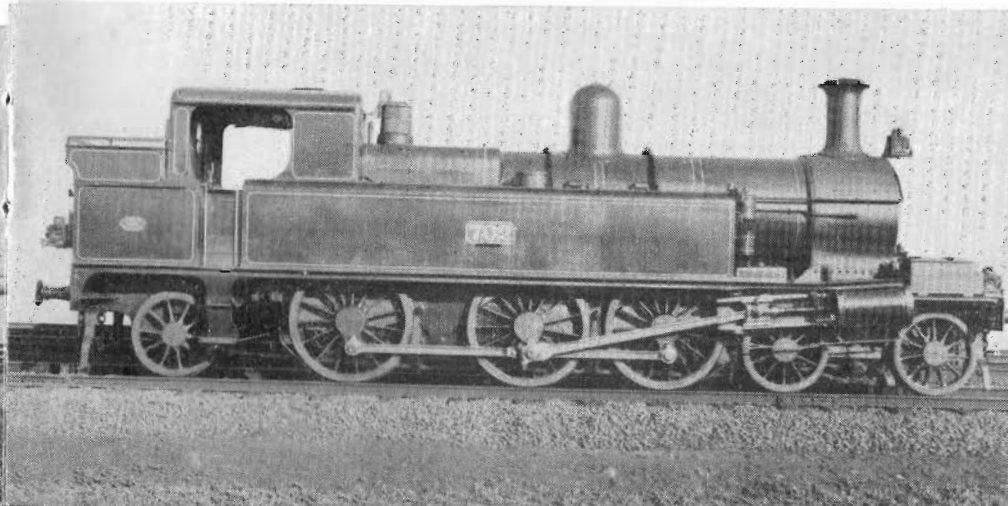
Reclassified 1929 to 1951 D1, D2, D3.

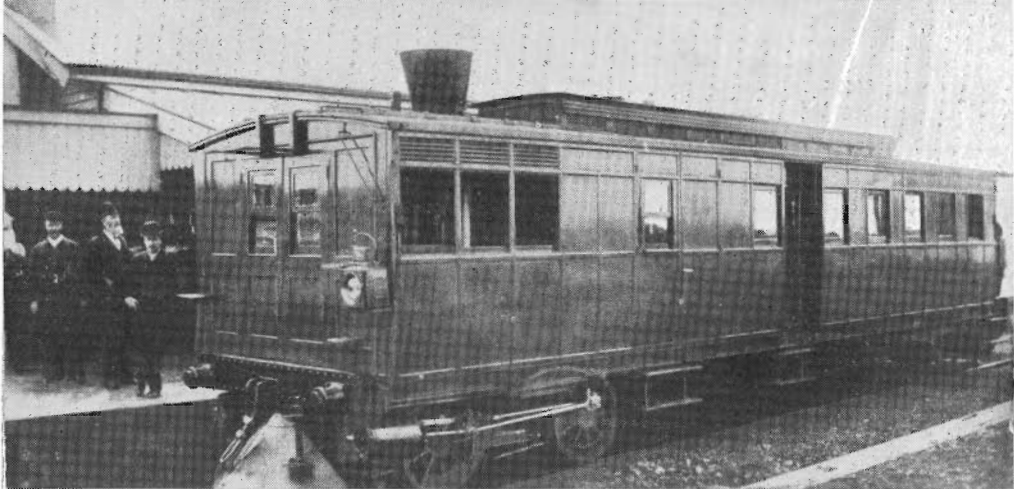
Suburban Passenger, 4-6-2 tank type, DE Class

Built at Newport Workshops, 1908 to 1913.

Number in class : 58.

Converted to D4 class, shunting engines.





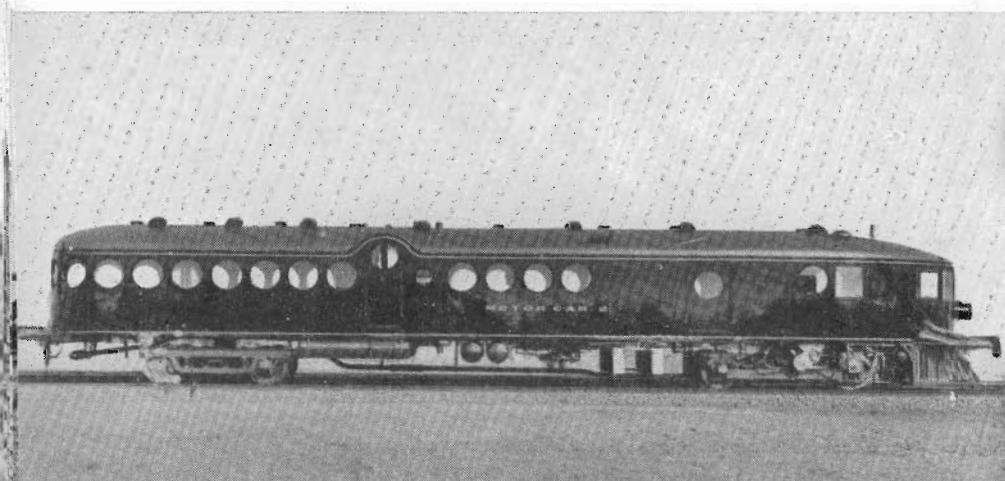
Rowan Car No. 1

The advent of the rail motor car on the Victorian Railways dates from May, 1883, when Rowan's steam car was placed in temporary service. The vehicle was a combination of engine, cabin and compartment for 40 passengers. It was purchased from Captain F. C. Rowan, of Melbourne. The power plant, built by Kitson and Company, of Leeds, England, consisted of a vertical boiler and motor engine fitted into a car designed by W. R. Rowan, of Copenhagen. The vehicle was mounted on six wheels, of which four were coupled drivers.

McKeen Car

Two petrol rail-motors were purchased from the McKeen Company, of Omaha, U.S.A. in 1911. Each car carried 73 passengers. The vehicles went into regular service on May 13, 1912; one working on the Ballarat-Maryborough line, and the other between Hamilton and Warrnambool.

After about three years, the McKeen cars were withdrawn from traffic. In 1919, the engines were removed and the cars converted for ordinary passenger train use.

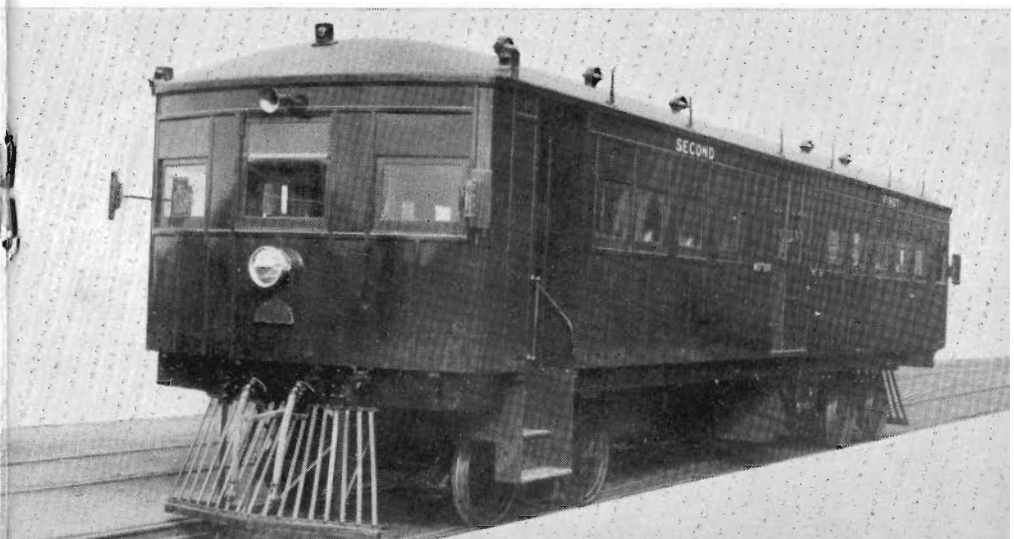


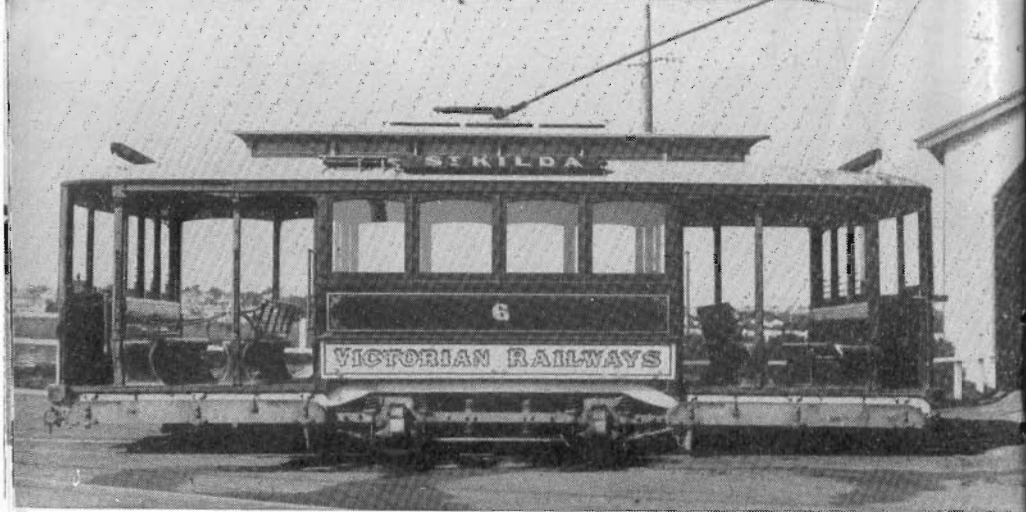
Single-Ended Rail Motor Car and Trailer

Powered by a 45 h.p. engine, the A.E.C. rail motor cars, which went into service in 1922-25, were built on a converted road motor chassis. The bodies were built at Newport Workshops. There was accommodation for 32 passengers in the motor section of the vehicle, and 28 in the trailer. There were 19 cars and 24 trailers. They ran on country branch lines.

Double-Ended Rail Motor Car

This rail motor car was powered by a 80 h.p. Leyland engine. The bodies and underframes were built at Newport Workshops. The cars went into service in 1925-26. There were four and they had accommodation for 27 1st class and 29 2nd class passengers. They ran on country branch lines.





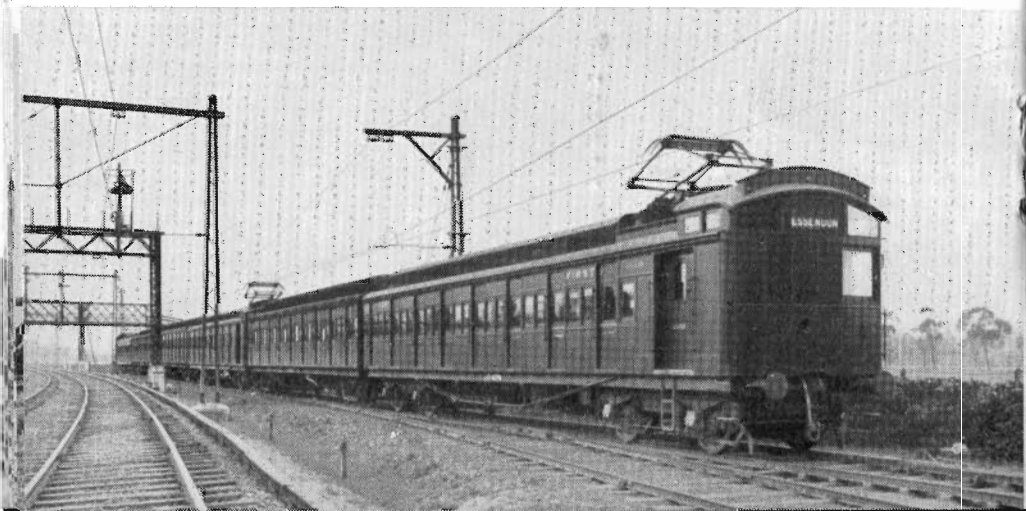
Combination Tram Car

The original seven cars built at Newport Workshops for the St. Kilda-Brighton Electric Street Railway, which was opened in May, 1906, were destroyed in the Elwood Power Station fire in 1907. They were replaced by others bought in N.S.W.

New cars were, subsequently, built at Newport. These were of the single bogie type, with accommodation for 40 seated passengers. In later years, larger vehicles were built at Newport for the electric street railways.

7-Car Suburban Passenger Train

On the afternoon of May 28, 1919, Melbourne suburban electric traction was officially inaugurated. A special train ran from Flinders-st. to Essendon, where a short ceremony was held. The train then proceeded to Sandringham. The next day, public traffic began between Sandringham and Essendon.



Modern Locomotives

THE present era of railroading has seen more and more emphasis placed on power and speed.

Railway engineers, always alert for new and more economic means of locomotion, have made unremitting study of all modern power trends, as they are manifest, even to the gas turbine. What they have achieved, so far, is illustrated in subsequent pages.

Since the original issue of *Power Parade*, the four S class locomotives, as well as the NA classes, have been withdrawn from service. A2, C, D, E and Y classes are being progressively retired as replacements by other and newer types become available.

In railroad operation, fuel is a big item. Owing to its cheapness and ease of handling, oil is gradually displacing coal as the major fuel on many of the world's railroads. Half the new fleet of Victoria's J class locomotives will be oil-fired.

The latest additions to the locomotives used in Victoria, the B, L, R and J classes, are general purpose locomotives incorporating the latest developments in locomotive design. The B class diesel-electrics and L class electrics are notable for their comfortable driving compartments and modern amenities for crews.

The shape of things to come is still a little blurred, but the momentum of railway progress, so evident from this book, cannot be easily slowed down. In this atomic age, new sources of power are becoming available. The logical successors to existing types of locomotives appear to be gas-turbine-electric or high speed electrically driven types powered from atomic generating stations.

D³ Class, Type 4-6-0:

Group : Nos. 606 - 699

D class engines are being scrapped at the rate of 15 to 20 a year.

Cylinders (2), 19" diameter, 26" stroke (some 18" diameter)

Wheels, coupled, 5' 1 11/16" diameter

Wheelbase, rigid, 13' ; engine and tender, 48' 6 3/8"

Length overall : 58' 3 3/8"

Weight in working order :

Engine, 57 tons 6 cwt. TOTAL :

Tender, 42 tons 5 cwt. 99 tons 11 cwt.

Adhesive weight : 41 tons

Axle load (max.) : 13 tons 14 cwt.

Boiler heating surface :

Flues and tubes, 1,241 sq. ft. ; Firebox, 123 sq. ft. ; } All-steel
Superheater, 228 sq. ft. TOTAL : 1,592 sq. ft. } boiler

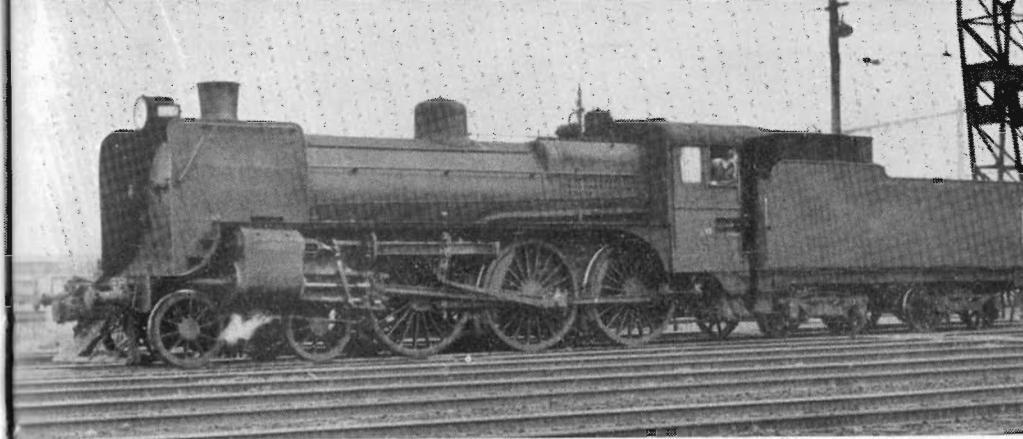
Grate area : 25 sq. ft.

Boiler pressure : 170 lb. per sq. in. (some 180 lb per sq. in.)

Tractive effort at 85% boiler pressure : 22,600 lb. (some 21,480 lb.)

Tender capacity : water, 4,200 gal. ; coal, 5 tons.

Built at Newport, Bendigo and Ballarat Workshops ; Baldwin Locomotive Works, U.S.A. ; Beyer, Peacock & Co. Ltd., Eng. ; Thompsons (Castlemaine) Ltd. ; and Walkers Ltd., Queensland, 1902-20.



A² Class, Type 4-6-0

Group : Nos. 816 - 939 (Stephenson Valve Gear)

Nos. 940 - 999 (Walschaert Valve Gear,
converted to oil-burners 1945-46)

This group, according to age and general condition, is being scrapped at the rate of 15 to 20 a year. The Stephenson gear locomotives have already been reduced by nearly half and the Walschaert engines by a quarter.

(Particulars apply to 940-999 only.)

Cylinders (2), 22" diameter, 26," stroke

Wheels, coupled, 6' 0 15/16" diameter

Wheelbase, rigid, 13' 4"; engine and tender 53' 7"

Length overall : 63' 6 1/2"

Weight in working order :

Engine, 72 tons 7 cwt. TOTAL :

Tender, 49 tons. 121 tons 7 cwt.

Adhesive weight : 52 tons 2 cwt.

Axle load (max.) : 17 tons 10 cwt.

Boiler heating surface :

Flues and tubes, 1,564 sq. ft. ; Firebox, 145 sq. ft.

Superheater, 331 sq. ft. TOTAL : 2,040 sq. ft.

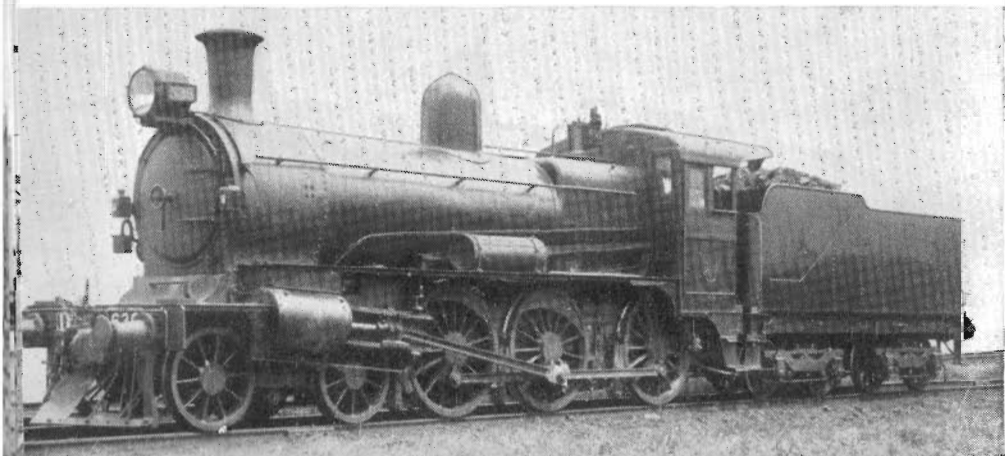
Grate area : 29 sq. ft.

Boiler pressure : 185 lb. per sq. in.

Tractive effort at 85% boiler pressure : 27,480 lb.

Tender capacity : water, 4,700 gal. ; oil, 1,500 gal.

816-939 built at Newport Workshops, 1907-15; 940-999 built at Newport, Ballarat, and Bendigo Workshops, 1915-22.



C Class, Type 2-8-0: "Consolidation"

(Converted to oil-burners 1946-49)

Group : Nos. 1 - 26

Cylinders (2), 22" diameter, 28" stroke

Wheels, coupled 5' 1 11/16" diameter

Wheelbase, rigid, 17' : engine and tender, 55' 2 1/2"

Length overall : 65' 3"

Weight in working order :

| | |
|-------------------------|------------------|
| Engine, 81 tons 10 cwt. | TOTAL : |
| Tender, 47 tons. | 128 tons 10 cwt. |

Adhesive weight : 71 tons 18 cwt.

Axle load (max.) : 18 tons 10 cwt.

Boiler heating surfaces :

Flues and tubes, 1,915 sq. ft.; Firebox, 175 sq. ft.

Superheater, 338 sq. ft. TOTAL : 2,428 sq. ft.

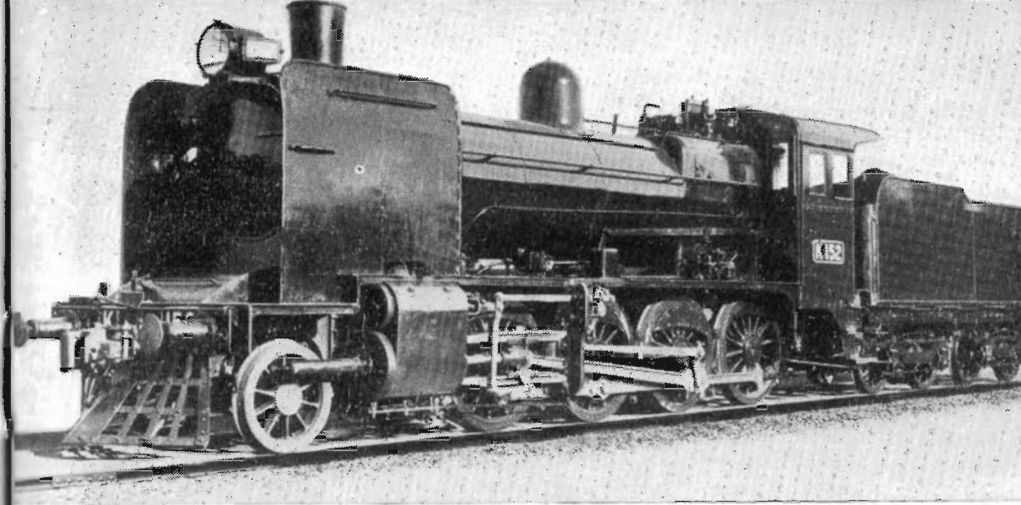
Grate area : 32 sq. ft.

Boiler pressure : 200 lb. per sq. in.

Tractive effort at 85% boiler pressure : 38,400 lb.

Tender capacity : water, 4,700 gal.; oil, 1,500 gal.

Built at Newport Workshops, 1918-26.



K Class, Type 2-8-0: "Consolidation"

Group : Nos. 140 - 192

Cylinders (2), 20" diameter, 26" stroke

Wheels, coupled, 4' 7 3/16" diameter

Wheelbase, rigid, 15' 6" ; engine and tender, 50' 2 5/8"

Length overall : 60' 3 3/8"

Weight in working order :

| | |
|-----------------------|------------------|
| Engine 62 tons 7 cwt. | TOTAL : |
| Tender 42 tons 5 cwt. | 104 tons 12 cwt. |

Adhesive weight : 53 tons 2 cwt.

Axle load (max.) : 13 tons 10 cwt.

Boiler heating surface :

Flues and tubes, 1,317 sq. ft. ; Firebox, 125 sq. ft. ;

Superheater, 238 sq. ft. TOTAL : 1,680 sq. ft.

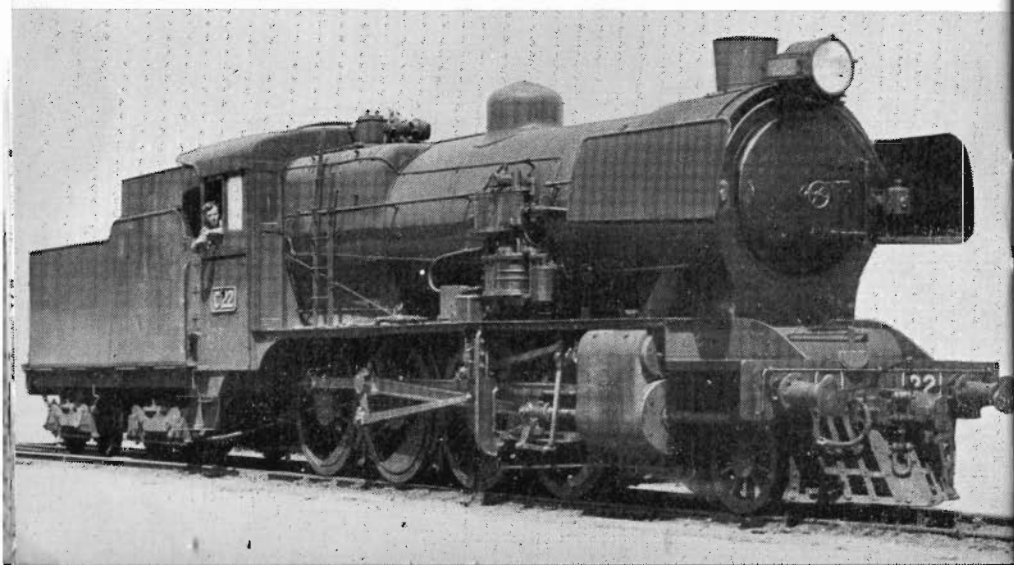
Grate area : 25 3/4 sq. ft.

Boiler pressure : 175 lb. per sq. in.

Tractive effort at 85% boiler pressure : 28,650 lb.

Tender capacity : water, 4,200 gal. ; coal, 5 tons.

Built at Newport Workshops, 1922-46.



N Class, Type 2-8-2:

“Mikado”

Group : Nos. 400 - 499

(Particulars apply to 430 and onwards group only.)

Cylinders (2), 20" diameter, 26" stroke

Wheels, coupled, 4' 7 3/16" diameter

Wheelbase, rigid, 15' 6"; engine and tender, 58'

Length overall : 67' 5 1/2"

Weight in working order :

Engine, 76 tons. TOTAL :

Tender, 48 tons 13 cwt. 124 tons 13 cwt.

Adhesive weight : 54 tons 11 cwt.

Axle load (max.) : 13 tons 17 cwt.

Boiler heating surface :

Flues and tubes, 1,250 sq. ft.; Firebox, 203 sq. ft. ;

Superheater, 324 sq. ft. TOTAL : 1,777 sq. ft.

Grate area : 31 sq. ft.

Boiler pressure : 175 lb. per sq. in.

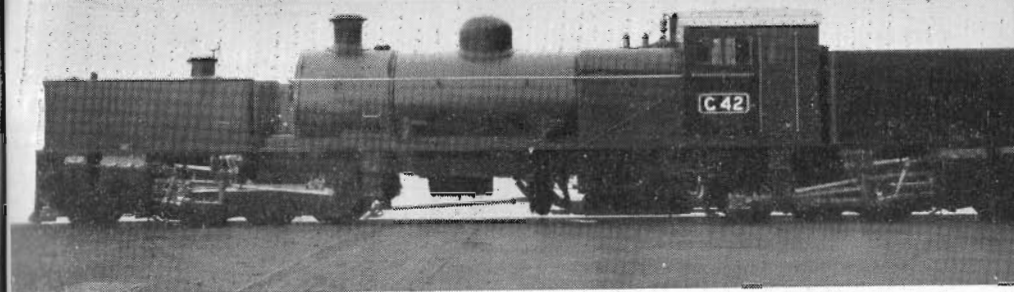
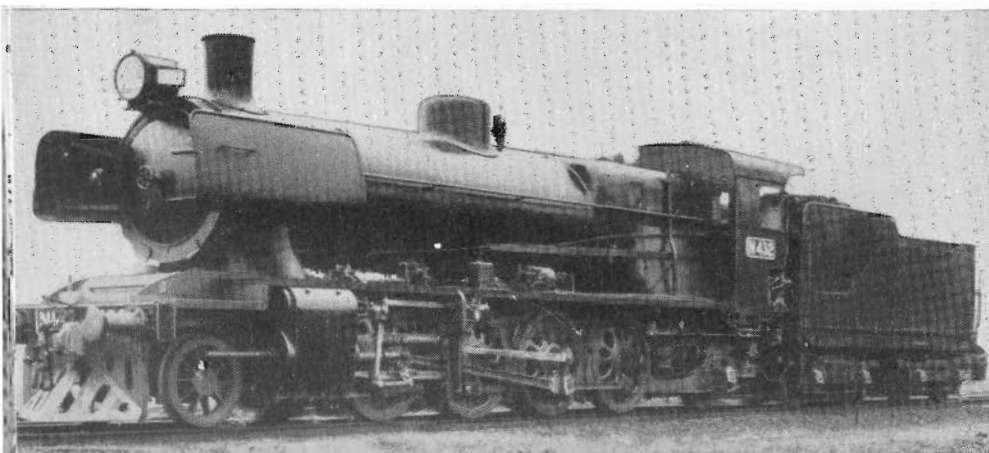
Tractive effort at 85% boiler pressure : 28,650 lb.

Tender capacity : water, 4,700 gal.; coal, 6 tons, or oil, 1,500 gal.

Nos. 400-432 built at Newport Workshops, 1925-51.

Nos. 450-499 built by North British Locomotive Co.,
Scotland, 1949-51.

Nine of the class have been converted to oil-burners
and others will follow.



G Class,

Garratt Type: 2-6-0-0-6-2

(2' 6" Gauge)

Group : Nos. 41 and 42

Cylinders (2 x 2), 13 1/8" diameter ; 18" stroke

Wheels, coupled, 3 ft. diameter

Wheelbase, rigid, 6' 9" ; TOTAL : 44' 6"

Length overall : 49' 10"

Weight in working order : 70 tons 3 cwt.

Adhesive weight : 56 tons 5 cwt.

Axle load (max.) : 9 tons 9 cwt.

Boiler heating surface :

Flues and tubes, 955 sq. ft. ; Firebox, 99 sq. ft. ;

Superheater, 180 sq. ft. TOTAL : 1,234 sq. ft.

Grate area : 22 3/5 sq. ft.

Boiler pressure : 180 lb. per sq. in.

Tractive effort at 85% boiler pressure : 27,630 lb.

Tank capacity : 1,680 gal.

Coal capacity : 3 1/2 tons.

Built by Beyer, Peacock & Co. Ltd., Eng., 1926.

S Class Type 4-6-2:

"Pacific" (Converted to oil-burners 1951-52)

Group : Nos. 300 - 303

300 *Matthew Flinders*
301 *Sir Thomas Mitchell*
302 *Edward Henty*
303 *C. J. Latrobe* } now scrapped

Cylinders (3), 20½" diameter, 28" stroke
Wheels, coupled, 6' 0 15/16" diameter
Wheelbase, rigid : 13' 4" : engine and tender, 76'
Length overall : 85' 6"

Weight in working order :

Engine 114 tons 10 cwt. TOTAL :
Tender 109 tons 7 cwt. 223 tons 17 cwt.

Adhesive weight : 70 tons 10 cwt.

Axle load (max.) : 23 tons 10 cwt.

Boiling heating surface :

Flues and tubes, 2,861 sq. ft.; Firebox, 292 sq. ft.;
Superheater, 570 sq. ft. TOTAL : 3,723 sq. ft.

Grate area : 50 sq. ft.

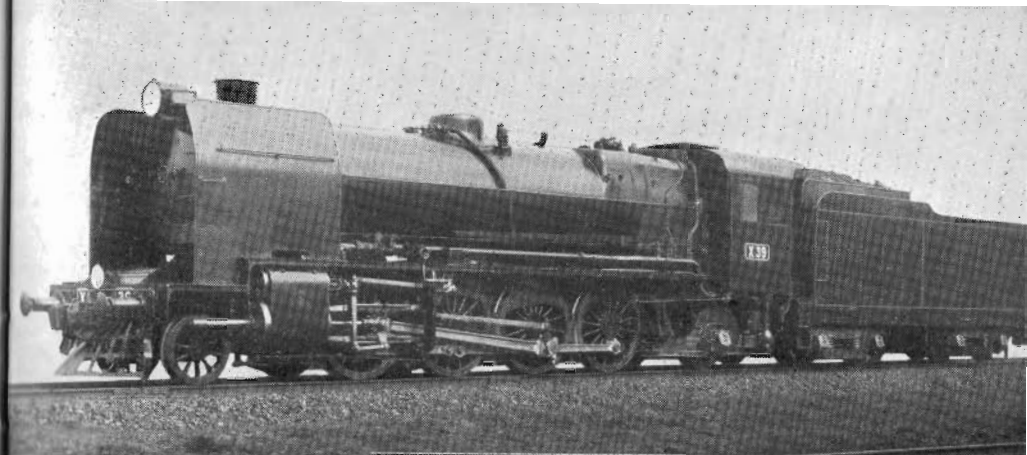
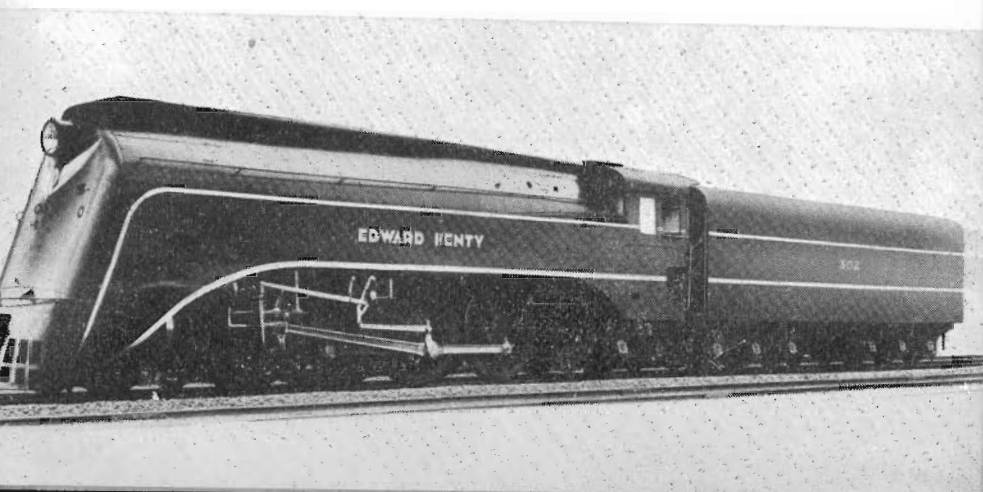
Boiler pressure : 200 lb. per sq. in.

Tractive effort at 85% boiler pressure : 41,670 lb.

Tender capacity : water, 12,600 gal., oil, 2,000 gal.

Built at Newport Workshops, 1928-33.

The S class locomotives were streamlined in 1936-38 to haul *Spirit of Progress*.



X Class, Type 2-8-2:

"Mikado"

Group : Nos. 27-55

26 equipped with boosters ;

X32 fitted with Stug equipment for pulverized fuel (brown coal) firing.

Cylinders (2), 22" diameter, 28" stroke

Wheels, coupled, 5' 1 11/16" diameter

Wheelbase, rigid : 17'; engine and tender, 67' 0 3/4"

Length overall, 77' 4 1/4"

Weight in working order :

Engine, 102 tons 19 cwt. TOTAL :
Tender, 82 tons 8 cwt. 185 tons 7 cwt.

Adhesive weight : 74 tons 10 cwt.

Axle load (max.) : 19 tons 1 cwt.

Boiler heating surface :

Flues and tubes, 2,364 sq. ft.; Firebox, 251 sq. ft. ;
Superheater, 492 sq. ft. TOTAL : 3,107 sq. ft.

Grate area : 42 sq. ft.

Boiler pressure : 205 lb. per sq. in.

Tractive effort at 85% boiler pressure : 39,360 lb.

Tractive effort of booster, 9,000 lb. TOTAL : 48,360 lb.

Tender capacity : water, 8,600 gal.; coal, 9 tons.

Built at Newport Workshops, 1929-47.

H Class, Type 4-8-4:

“Pocono”

No. 220

Cylinders (3), 21½" diameter, 28" stroke

Wheels, coupled, 5' 7" diameter

Wheelbase, rigid, 17' 6"; engine and tender, 82' 1"

Length overall : 92' 5¾"

Weight in working order :

Engine 146 tons 10 cwt. TOTAL :

Tender 113 tons 11 cwt. 260 tons 1 cwt.

Adhesive weight : 92 tons 12 cwt.

Axle load (max.) : 23 tons 5 cwt.

Boiler heating surface :

Flues and tubes, 3,613 sq. ft.; Firebox, 367 sq. ft.

Superheater, 780 sq. ft. TOTAL : 4,760 sq. ft.

Grate area : 68 sq. ft.

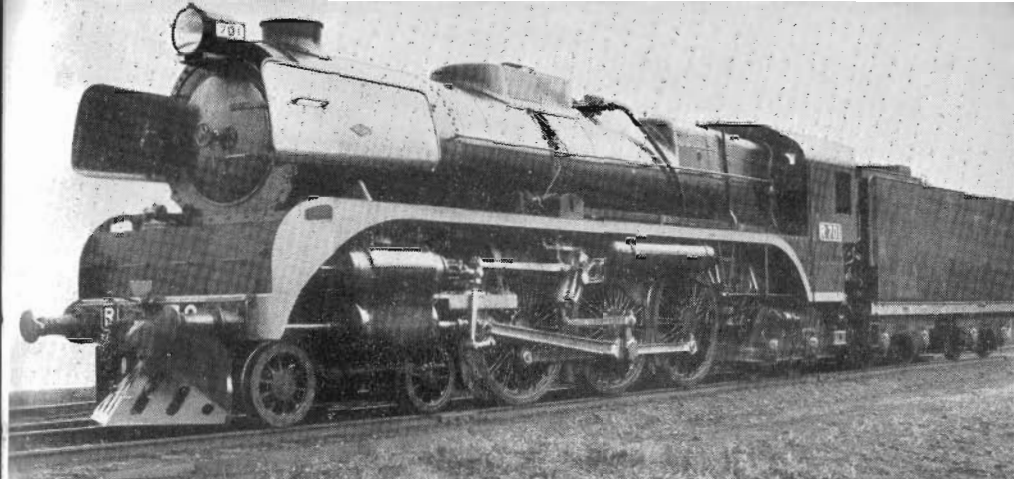
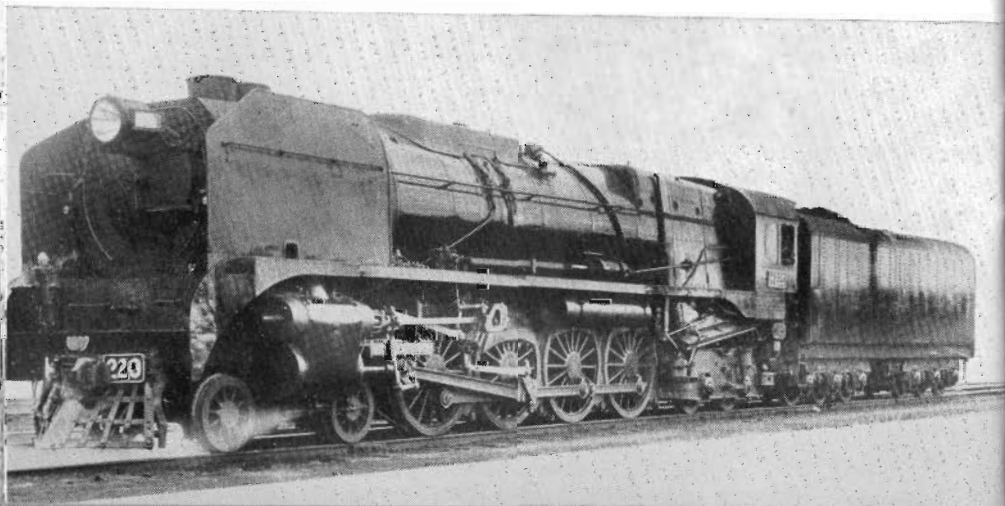
Boiler pressure : 220 lb. per sq. in.

Tractive effort at 85% boiler pressure : 55,000 lb.

Tender capacity : water, 14,000 gal.; coal, 9 tons.

Equipped with mechanical stoker MB type, Standard Stoker Co. Inc.

Built at Newport Workshops, 1941.



R Class, Type 4-6-4:

“Hudson”

Group : Nos. 700-769

Cylinders (2), 21½" diameter, 28" stroke

Wheels, coupled, 6' 0 15/16" diameter

Wheelbase, rigid, 12' 10"; engine and tender, 67'

Length overall, 77' 3¼"

Weight in working order :

Engine, 107 tons 12 cwt. TOTAL :

Tender, 79 tons 16 cwt. 187 tons 8 cwt.

Adhesive weight : 58 tons 10 cwt.

Axle load (max.) : 19 tons 10 cwt.

Boiler heating surface :

Flues and tubes, 1,958 sq. ft.; Firebox, 285 sq. ft.;

Superheater, 462 sq. ft. TOTAL : 2,705 sq. ft.

Grate area : 42 sq. ft.

Boiler pressure : 210 lb. per sq. in.

Tractive effort at 85% boiler pressure : 32,080 lb.

Tender capacity : water, 9,000 gal.; coal, 6 tons.

Equipped with mechanical stoker MB-1 type, Standard Stoker Co. Inc., except R707 which has been fitted with Stug equipment for pulverised fuel (brown coal) firing.

Built by North British Locomotive Co., Scotland, 1951-52



J Class, Type 2-8-0 :

**Group : Nos. 500-529 (coal burners) ;
530-559 (oil burners)**

Cylinders (2), 20" diameter, 26" stroke

Wheels, coupled, 4' 7 $\frac{3}{8}$ " diameter

Wheelbase, rigid, 15' 6" ; engine and tender, 50' 8 $\frac{1}{4}$ "

Length overall : 60' 5 $\frac{1}{2}$ "

Weight in working order :

Engine 66 tons 19 cwt.

Tender 45 tons 16 cwt. TOTAL : 112 tons 15 cwt.

Adhesive weight : 57 tons 7 cwt.

Axle load (max.) : 14 tons 10 cwt.

Boiler heating surface :

Tubes, 1317 sq. ft., Firebox, 118 sq. ft., Arch Tubes, 9 sq. ft., Superheater, 238 sq. ft. TOTAL : 1682 sq. ft.

Grate area : 31 sq. ft.

Boiler pressure : 175 lb. per sq. in.

Tractive effort at 85% boiler pressure, 28,650 lb.

Tender capacity : water, 4,200 gal. (coal burners), 4,100 gal. (oil burners); coal, 7 tons; oil 1500 gal.

Built by Vulcan Foundry Ltd., Newton-le-Willows, Lancashire, England, 1953-54.

The J class locomotives are suitable for turning on 53 ft. turn-tables.

Diesel Rail Car, 102 H.P.

Group : Nos. 1-12

Tare weight : 18 tons 17 cwt.

Length overall : 54' 4 $\frac{1}{8}$ "

Width overall : 9'

Height above rail level : 10' 7 $\frac{5}{8}$ "

Capacity : Passengers—18 1st class,
22 2nd class. TOTAL : 40

Van—2 tons

Bogie pivot centres : 34' 6 $\frac{1}{2}$ "

Bogie rigid wheelbase : 8'

Wheel diameter : driving 33"; trailing 30"

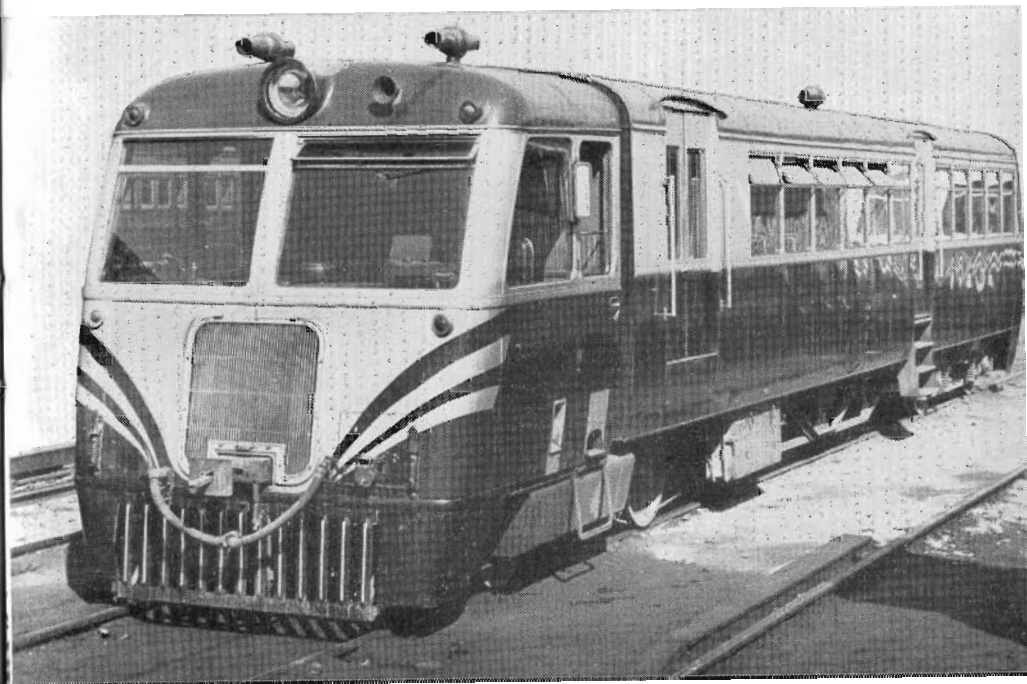
No. of driving wheels : 2

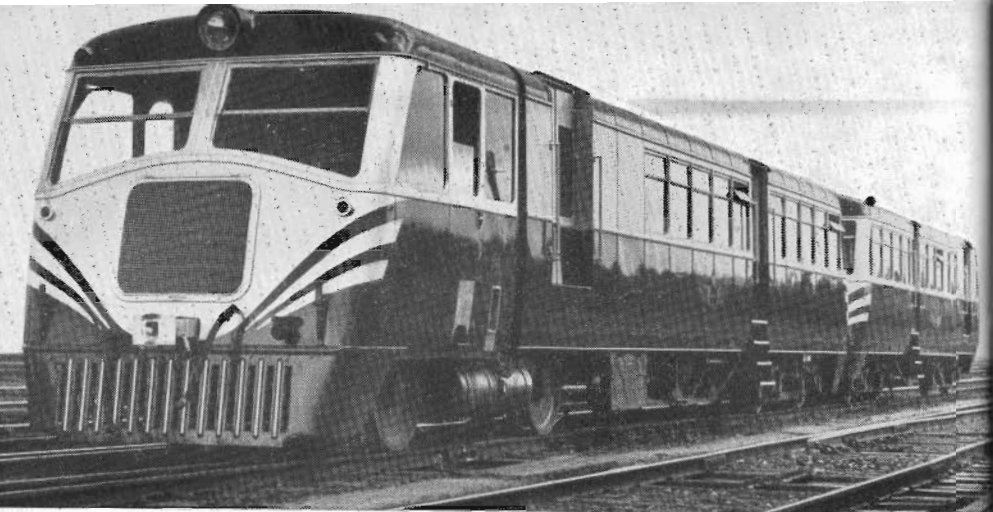
Tractive effort : 2,969 lb. max.

Transmission : hydraulic coupling and epicyclic gearbox

Max. permissible speed : 45 m.p.h.

Power units supplied by Walker Rail-Car Co., Wigan, Eng. ;
bodies built by Martin & King Pty. Ltd., Victoria ; and
assembled at Newport Workshops, 1948-49.





Diesel Rail Car, 153 H.P.

(with trailer)

Group : Nos. 20 - 34

Tare weight : 21 tons 8 cwt.

Length overall : 56' 4 $\frac{3}{8}$ "

Width overall : 9'

Height above rail level : 10' 7 $\frac{5}{8}$ "

Capacity (excluding trailer): Passengers—18 1st class,
22 2nd class. TOTAL: 40
Van—2 tons

Trailer Capacity : Passengers—16 1st class,
22 2nd class. TOTAL : 38
Van—2 tons

Bogie pivot centres : 33' 6 $\frac{1}{4}$ "

Bogie rigid wheelbase : driving 10' 6"
trailing, 8'

Wheel diameter : driving 36" ; trailing 30"

No. of driving wheels : 2

Tractive effort : 4,130 lb. max.

Transmission : hydraulic coupling and epicyclic gearbox

Max. permissible speed : 50 m.p.h.

Power units supplied by Walker Rail-Car Co., Wigan, Eng. ;
bodies built by Martin & King Pty. Ltd., Victoria ; and
assembled at Newport Workshops, 1948-53.

Diesel Rail Car, 280 H.P.

(Centre power unit)

Group : Nos. 80 - 91

Tare weight : 46 tons 10 cwt.

Length overall : 121' 8 $\frac{1}{4}$ "

Width overall : 9' 6"

Height above rail level : 11' 8"

Capacity : Passengers—38 1st class,
56 2nd class. TOTAL: 94
Van—2 compartments, 1 ton each

Bogie pivot centres : 40' 1 $\frac{3}{4}$ " articulated at centre bogies

Bogie rigid wheelbase : central bogie 12' 6"
end bogies 9'

Wheel diameter : 36"

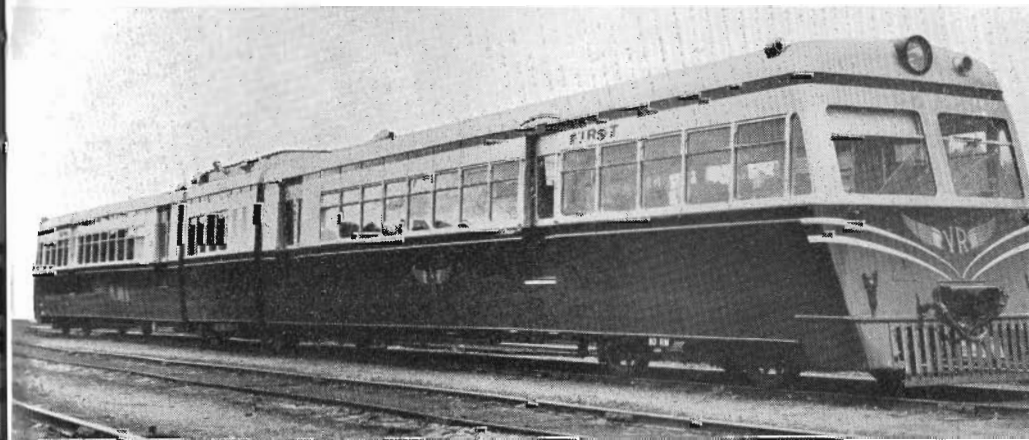
No. of driving wheels : 4

Tractive effort : 6,285 lb. max.

Transmission : hydraulic coupling and epicyclic gearbox

Max. permissible speed : 60 m.p.h.

Power units supplied by Walker Rail-Car Co., Wigan, Eng. ;
bodies built by Martin & King Pty. Ltd., Victoria ; and
assembled at Newport Workshops, 1950-52.



Diesel-Electric

Rail Motor (with trailer)

Group : Nos. 55 - 64

(Converted from petrol-electric to diesel-electric 1951-53)

Tare weight : 45 tons 18 cwt.

Length overall : 60' 2"

Width overall : 9' 9 $\frac{3}{8}$ "

Height above rail level : 12' 7 $\frac{1}{4}$ "

Capacity (excluding trailer) : Passengers—19 1st class,
35 2nd class. TOTAL : 54

Van—1 $\frac{1}{2}$ tons

Trailer capacity : Passengers—27 1st class,
50 2nd class. TOTAL : 77

Van—1 ton

Bogie pivot centres : 40'

Bogie rigid wheelbase : driving, 8' 6"
trailing, 8'

Wheel diameter : driving, 42"
trailing, 36 $\frac{1}{4}$ "

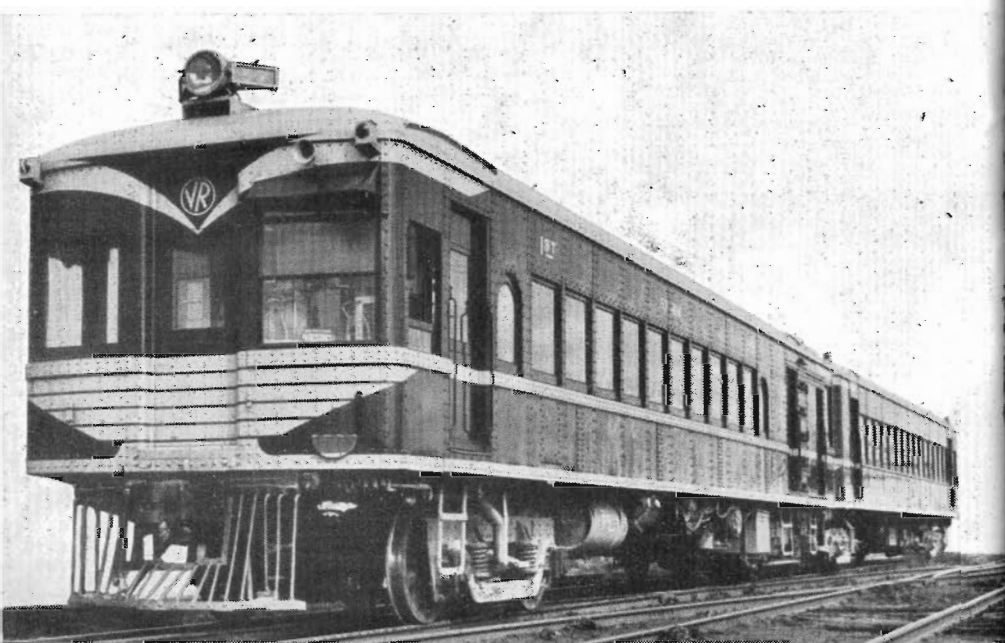
No. of driving wheels : 4

Tractive effort : 7,600 lb. max., at starting

Transmission : electric

Maximum permissible speed : 60 m.p.h.

Built at Newport Workshops, 1928-31.



F Class, Type O-6-O Diesel-Electric Shunting Locomotive

Group : Nos. 310 - 319

Wheels : 4' 0 $\frac{1}{2}$ " diameter

Wheelbase : 11' 6"

Length overall : 30' 1 $\frac{1}{2}$ "

Weight in working order : 49 tons 11 cwt.

Adhesive weight : 100%

Axle load (max.) : 16 tons 14 cwt.

Tractive effort, starting : 33,000 lb.

Tractive effort, continuous : 11,000 lb.

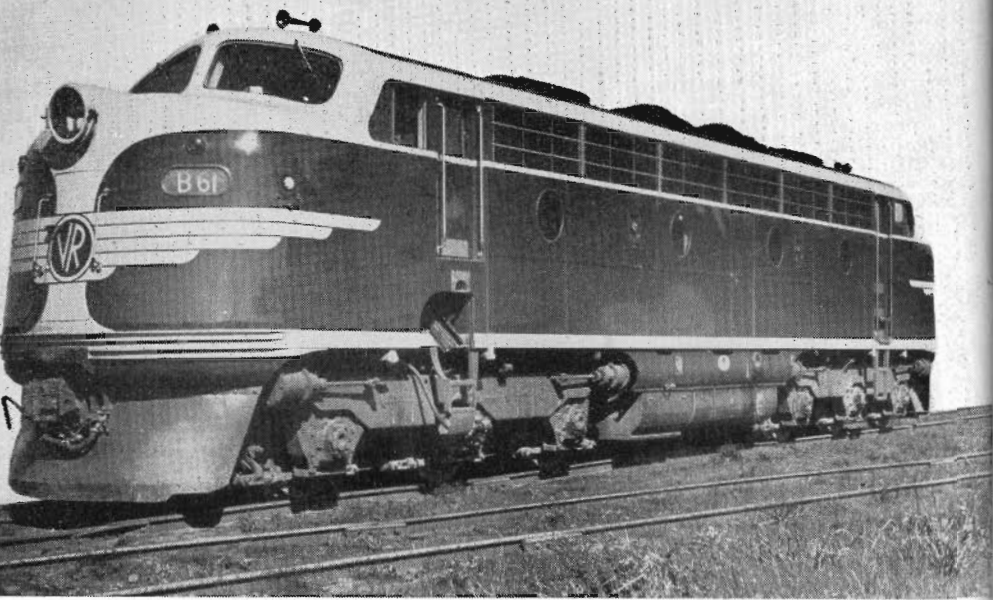
Speed at continuous rating : 7 $\frac{1}{4}$ m.p.h.

Maximum speed : 20 m.p.h.

Height above rail level : 12' 5 $\frac{5}{8}$ "

Width overall : 9' 1 $\frac{3}{8}$ "

Built by English Electric Co. Ltd., Eng., 1951.



B Class Diesel-Electric Main-Line Locomotive

Group : Nos. 60 - 85

Weight (fully loaded) : 111 tons 12 cwt.
Tractive effort, starting : 60,000 lb.
Tractive effort, continuous : 40,000 lb.
Speed at continuous rating : 11 m.p.h.
Maximum permissible speed : 83 m.p.h.
Gear ratio : 59/18
Number of driving wheels : 12
Adhesive weight : 100%
Wheel diameter : 40 in.
Fuel oil capacity : 1,000 gal.
Lubricating oil capacity : 165 gal.
Cooling water capacity : 185 gal.
Bogie centres : 34 ft.
Bogie rigid wheelbase : 13 ft. 2 in.
Minimum curve radius : 5 chains
Length overall : 60 ft. 10 in.
Height above rail level : 14 ft.
Width overall : 9 ft. 9 in.

Built by Clyde Engineering Co. Pty. Ltd., New South Wales, 1952-53.

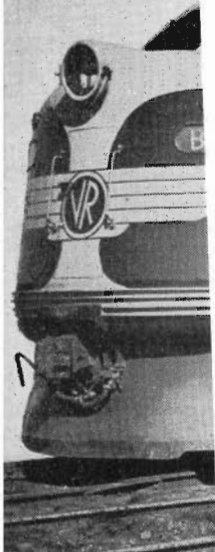
T Class Diesel-Electric General Purpose Locomotive

Group : Nos. 320 to 346

Total weight : 68 tons
Tractive effort, starting : 38,080 lb.
Tractive effort, continuous : 28,000 lb.
Speed at continuous rating : $9\frac{1}{2}$ m.p.h.
Maximum permissible speed : 62 m.p.h.
Gear Ratio : 63/14
Number of driving wheels : 8
Adhesive weight : 100%
Wheel diameter : 40 in.
Fuel oil capacity : 750 gal.
Lubricating oil capacity : 108 gal.
Cooling water capacity : 180 gal.
Bogie centre : 26 ft. 6 in.
Bogie rigid wheel base : 8 ft.
Minimum curve radius : 3 chains
Length overall : 47 ft. 9 in.
Height above rail level : 12 ft. $8\frac{1}{2}$ in.
Width overall : 9ft. 5in.

Built by Clyde Engineering Co. Pty. Ltd., New South Wales, 1955-56.





B Cla
Main-
Group

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Built by CI

Electric Suburban Goods Locomotive

Nos. 1100 and 1101

Total weight : 50 tons

Tractive effort, starting : 24,400 lb.

Tractive effort, continuous : 14,160 lb.

Speed at continuous rating : 16 m.p.h.

Maximum permissible speed : 40 m.p.h.

No. of driving wheels : 8

Adhesive weight : 100%

Wheel diameter : 42"

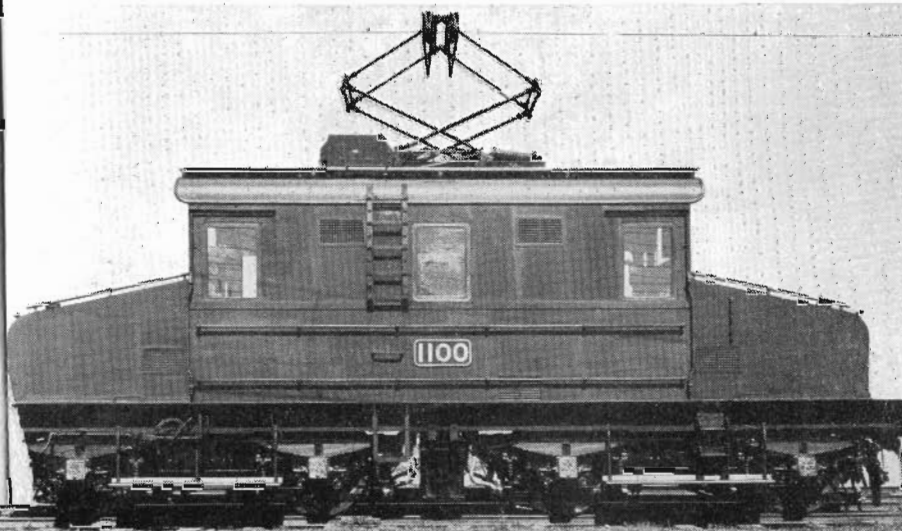
Bogie centres : 17' 3"

Bogie rigid wheelbase : 8' 6"

Length overall : 36' 4½"

Height above rail level with pantograph lowered : 14' 2"

Built at Newport and Jolimont Workshops, 1923.



Electric Suburban Goods Locomotive

Nos. 1102 - 1111

Total weight : 55 tons 2 cwt.

Tractive effort, starting : 24,400 lb.

Tractive effort, continuous : 14,160 lb.

Speed at continuous rating : 16 m.p.h.

Maximum permissible speed : 40 m.p.h.

No. of driving wheels : 8

Adhesive weight : 100%

Wheel diameter : 42"

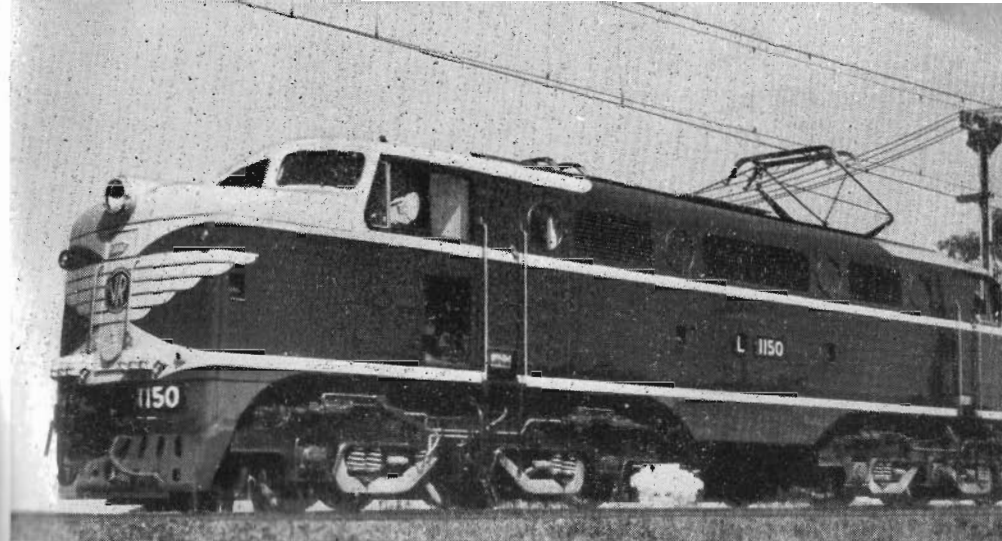
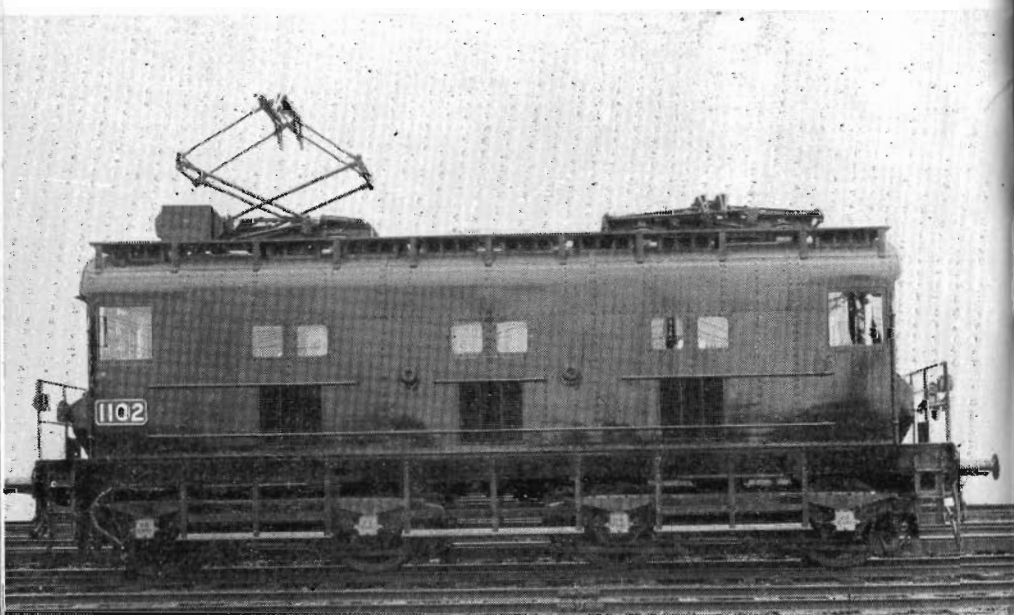
Bogie centres : 18'

Bogie rigid wheelbase : 8' 6"

Length overall : 38' 8½"

Height above rail level with pantograph lowered: 14' 2¾"

Built at Newport and Jolimont Workshops, 1928-29.



L Class Electric Main-Line Locomotive

Group : Nos. 1150 - 1174

Total weight : 97 tons 1 cwt.

Tractive effort, starting : 47,000 lb.

Tractive effort, continuous : 25,200 lb. at 30 m.p.h.
18,000 lb. at 44 m.p.h.

Maximum permissible speed : 75 m.p.h.

Gear ratio : 63/16

No. of driving wheels : 12

Adhesive weight : 100%

Wheel diameter : 40"

Bogie centres : 32'

Bogie rigid wheelbase : 14' 4"

Length overall : 59'

Height above rail level with pantograph lowered : 13' 10"

Width overall : 9' 3"

Minimum curve radius, 5 chains.

Built by English Electric Co. Ltd., Eng., 1952-53.

M Class Diesel-Hydraulic Locomotive, Type 0-6-0

Group : Nos. 231 to 232

Weight (fully loaded) : 30 tons
Tractive effort, starting : 17,500 lb.
Maximum permissible speed : 12 m.p.h.
Number of driving wheels : 6
Adhesive weight : 100%
Wheel diameter : 48½ in.
Fuel oil capacity : 370 gal.
Lubricating oil capacity : 6 gal.
Transmission oil capacity : 10 gal.
Cooling water capacity : 10 gal.
Rigid wheelbase : 11 ft. 6 in.
Length overall : 27 ft. 2½ in.
Height above rail level : 12 ft. 2⅜ in.
Width overall : 9 ft. 5⅝ in.

Built at Newport Workshops, 1959.

... SINCE 1954 ...

Addenda to "Power Parade : 1854—1954"

Published by the Victorian Railways

PAGE 11

Passenger 4-4-0 type.
The Rogers Locomotive Works were located at Paterson (not Patterson).

PAGE 14

Goods 4-6-0 type.
The first caption relates to the bottom photograph, not the top one.

PAGE 25

Single-ended R.M. Car.
These were scrapped 1955.

Double-ended R.M. Car.
These were scrapped 1954.

PAGE 33

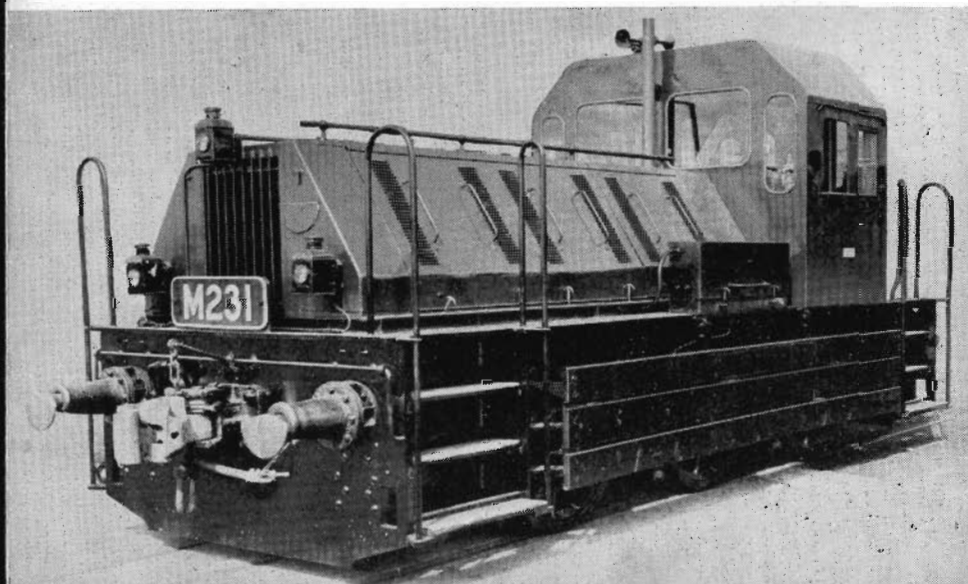
All S class 4-6-2 "Pacific" engines have been scrapped.

PAGE 43

F class, diesel-electric shunting locomotives.
Group Nos. altered from 310-319 to 201-214.

PAGE 44

B class, diesel-electric locomotive.
Maximum permissible speed : 70 m.p.h.





S Class Diesel-Electric Main Line Locomotive

Group : Nos. 300 to 309.

Weight (fully loaded) : 114 tons
Tractive effort, starting : 63,800 lb.
Tractive effort, continuous : 53,500 lb.
Speed at continuous rating : $9\frac{1}{2}$ m.p.h.
Maximum permissible speed : 70 m.p.h.
Gear ratio : 59/18
Number of driving wheels : 12
Adhesive weight : 100%
Wheel diameter : 40 in.
Fuel oil capacity : 1500 gal.
Lubricating oil capacity : 165 gal.
Cooling water capacity : 175 gal.
Bogie centres : 34 ft.
Bogie rigid wheel base : 13 ft. 2 in.
Minimum curve radius : 274 ft.
Length overall : 60 ft. 11 in.
Height above rail level : 14 ft.
Width overall : 9 ft. 9 in.

Built by Clyde Engineering Co. Pty. Ltd., New South Wales,
1957-58.



W Class Diesel-Hydraulic Locomotive, Type O-6-O

Group : Nos. 241 to 265

Weight (fully loaded) : 48 tons
Tractive effort, starting : 27,000 lb.
Maximum permissible speed : 40 m.p.h.
Number of driving wheels : 6
Adhesive weight : 100%
Wheel diameter : $48\frac{1}{2}$ in.
Fuel oil capacity : 720 gal.
Lubricating oil capacity : 23 gal.
Transmission oil capacity : 48 gal.
Cooling water capacity : 93 gal.
Rigid wheel base : 12 ft. 6 ins.
Length overall : 30 ft. 1 in.
Height above rail level : 14 ft.
Width overall : 9 ft. 7 in.

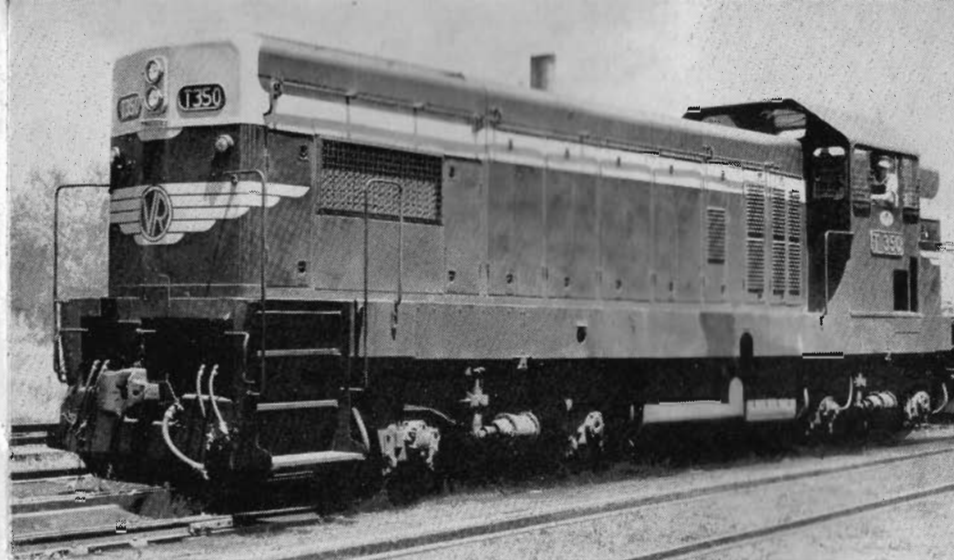
Built by Tulloch Ltd., New South Wales, 1959-1960.

T Class Diesel-Electric Locomotive

Group : Nos. 320 to 346

Weight (fully loaded) : 68 tons
Tractive effort, starting : 38,080 lb.
Tractive effort, continuous : 28,000 lb.
Speed at continuous rating : $9\frac{1}{2}$ m.p.h.
Maximum permissible speed : 62 m.p.h.
Gear ratio : 63/14
Number of driving wheels : 8
Adhesive weight : 100%
Wheel diameter : 40 in.
Fuel oil capacity : 750 gal.
Lubricating oil capacity : 108 gal.
Cooling water capacity : 180 gal.
Bogie centres : 26 ft. 6 in.
Bogie rigid wheel base : 8 ft.
Minimum curve radius : 193 ft.
Length overall : 47 ft. 9 in.
Height above rail level : 12 ft. $8\frac{1}{2}$ in.
Width overall : 9 ft. 5 in.

Built by Clyde Engineering Co. Pty. Ltd., New South Wales, 1955.



T Class Diesel-Electric Locomotive (Raised Cab Roof)

Group : Nos. 347 to 356

Weight (fully loaded) : 68 tons
Tractive effort, starting : 38,080 lb.
Tractive effort, continuous : 33,880 lb.
Speed at continuous rating : $7\frac{1}{2}$ m.p.h.
Maximum permissible speed : 62 m.p.h.
Gear ratio : 63/14
Number of driving wheels : 8
Adhesive weight : 100%
Wheel diameter : 40 in.
Fuel oil capacity : 750 gal.
Lubricating oil capacity : 108 gal.
Cooling water capacity : 150 gal.
Bogie centres : 22 ft. 8 in.
Bogie rigid wheel base : 8 ft.
Length overall : 43 ft. 11 in.
Height above rail level : 13 ft. $10\frac{3}{4}$ in.
Width overall : 9 ft. 5 in.

Built by Clyde Engineering Co. Pty. Ltd., New South Wales, 1959.

