

LOCOMOTIVE No1

150 Years of Railways in NSW



This exhibition explores the development of steam travel in NSW, which began in 1855 when Locomotive No 1 hauled the State's first passenger train. It tells the history of Locomotive No 1 and recreates a journey from Sydney to Parramatta in 1863. Featured in two showcases are stories about 32 and 38 class steam locomotives — both the restoration of the real thing, and the making of scale models.

The exhibition has five sections:

1. The story of Locomotive No 1: how it was built, used and displayed (walk along the train at floor level)
2. Railway travel in 1863 (walk along the platform)
3. Mammoths and miniatures
4. The first railway in NSW at a glance

LOCOMOTIVE No1

150 Years of Railways in NSW



Locomotive No 1 in the Agricultural Hall annexe in the Outer Domain (the Museum's second home) in about 1884.

Related exhibitions include:

- *Boulton and Watt steam engine*, level 3
This reveals how James Watt greatly improved the efficiency and versatility of steam engines and links to the section on 'The development of the steam locomotive'.
- *The steam revolution*, level 2
This exhibition traces the development of steam technology. See how high-pressure steam engines were used for purposes other than driving locomotives.
- *What's in store? Shopping in Australia from 1880–1930*, level 2
See how wealth generated by gold and wool exports, together with the expansion of cities, created a revolution in shops and shopping in Sydney and throughout NSW.
- *Transport*, level 1
The exhibition looks at the history of transport in Australia since the early days of the colony, focusing mainly on Sydney and NSW. See what other modes of transport were available in and around Sydney during the 1890s.

+ Syllabus links

The exhibition, together with the discussion points, pre-visit and post-visit activities can be easily integrated into or adapted for areas of teaching in the following syllabuses:

Primary

- English — Talking and listening, Skills and strategies, Reading and viewing texts, Producing texts, and Context and text
- HSIE — Change and continuity, Identities and Resource systems or units of work such as Transport; Places: then, now and tomorrow
- Mathematics — Space and measurement
- Science and technology — Physical phenomena

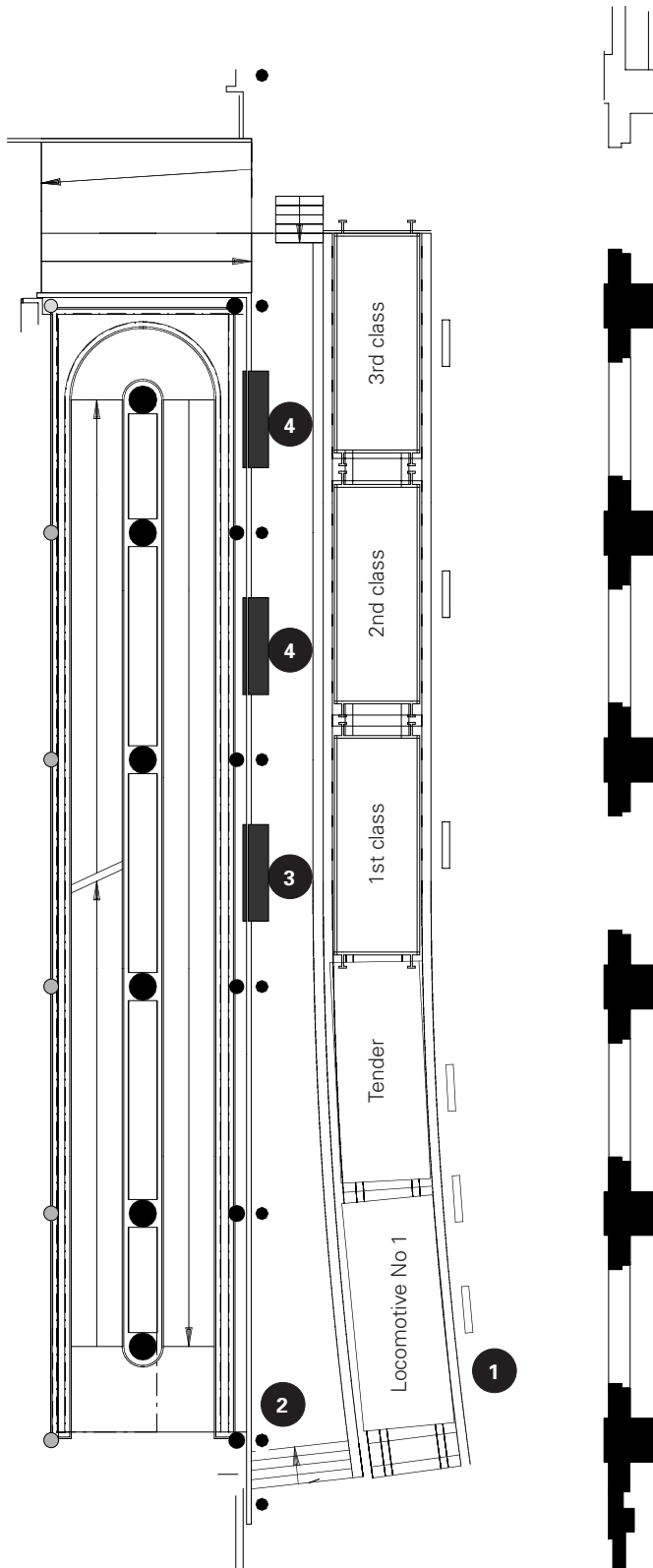
Secondary (Stages 4 and 5)

- History — Investigating history, The shaping of the modern world, Constructing history, and Thematic studies
- English — close study of texts that give students experience of cultural heritage

LOCOMOTIVE No1

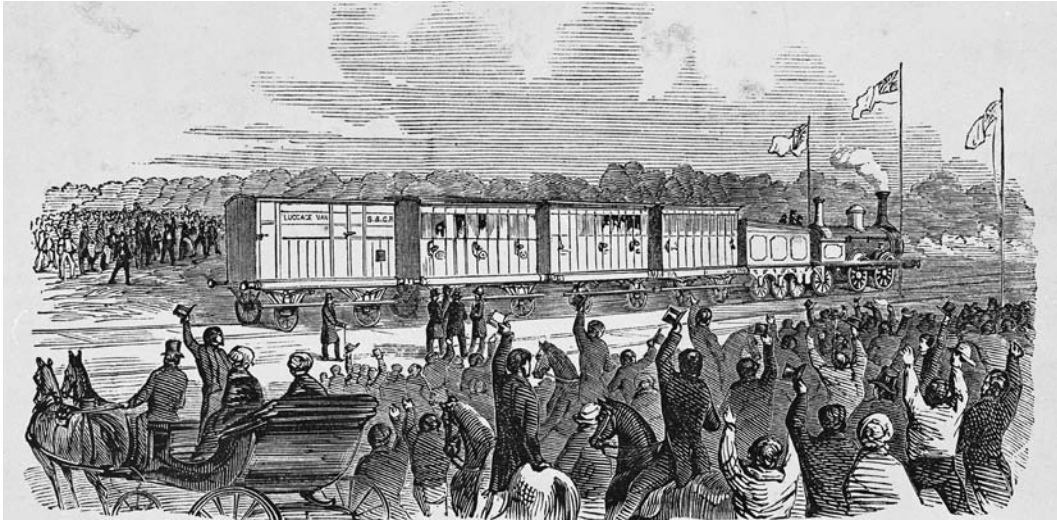
150 Years of Railways in NSW

Exhibition map



LOCOMOTIVE No1

150 Years of Railways in NSW



This lithograph by Walter G Mason is thought to depict a special run carrying the governor to Parramatta on 23 August 1855, a month before the line officially opened.

+ Introduction

Locomotive No 1 hauled the first train in NSW. It was instrumental in the building and operating of the first railway, which ran from Sydney to Parramatta from 1855. After only 22 years of service, Locomotive No 1 was presented to this Museum where it remains one of our most significant and treasured objects.

After 1855 railways rapidly expanded across the state. They were hailed as a fast, efficient and relatively inexpensive means of transporting both goods and passengers. They shaped NSW and wherever the railway went, towns and industries prospered, linking rural settlements and cities.

+ The story of Locomotive No 1

- 1854 — Built by Robert Stephenson & Co, Newcastle upon Tyne, England, one of four.
- 1855 — Shipped to Sydney from England aboard the *John Fielden* and landed at Campbell's Wharf, West Circular Quay in January.
- 1855 — Unofficially pulled the first passenger train in NSW on 29 May when the governor inspected the line.
- 1855 — Sydney to Parramatta line was officially opened on 26 September, Locomotive No 3 hauled the official train as No 1 was under repair.

- 1858 — Derailed at Haslam's Creek, 10 July. Two people died.
- 1868 — Head-on collision with a passenger train at Newtown, 6 January. One person died.
- 1877 — Retired after covering 250,468 km in 22 years of service. The tender was fitted with new bunkers and hoppers and used with Locomotive No 78.
- 1884 — Acquired by the Museum and displayed in an annexe of the Agricultural Hall in the Outer Domain, behind Sydney Hospital.
- 1893 — Moved to the old museum, Harris Street, Ultimo, to a purpose-built engine house.
- 1905 — Displayed for the Jubilee of NSW Railways near the Railway Institute Building at Central Station.
- 1917 — Displayed for the Great Industrial and Model Exhibition at Sydney Railway Goods Shed near Central Station.



Locomotive and tender.

LOCOMOTIVE No1

150 Years of Railways in NSW

- 1938 — Displayed for the 150th anniversary of European settlement in Australia at Martin Place, Sydney.
- 1938 — The original tender, by then modified, was set aside for display with Locomotive No 1 in the Museum
- 1955 — Displayed for the Centenary of NSW Railways in front of Central Station, Sydney.
- 1980 — Dismantled, restored and rebuilt.
- 1981 — Moved to Stage 1 of the Powerhouse Museum.
- 1987 — Moved to its present location, level 4 of the Powerhouse Museum.
- 1988 — Displayed with the tender, and first, second and third class carriages of the period.
- 2005 — To celebrate the 150th anniversary of NSW Railways, conservation work was undertaken and the exhibition was redeveloped.

Did you know?

- Serious labour shortage was one of the challenges that confronted the company that built the first railway line. To help solve the problem, 500 railway labourers, called navvies, were brought from England in 1853.
- It was claimed that in the 1830s the cost of carting one ton of goods by dray from Sydney to Goulburn was the same as freighting one ton of goods by sea from London to Sydney.
- Locomotive No 1 was built in the same workshop in Newcastle upon Tyne, England, as Stephenson's famous locomotive, the *Rocket* of 1829.
- In 1855 the line from Sydney to Parramatta was laid with Barlow rail. It failed and was replaced by 1877. Over 100 years later enough pieces of Barlow rail were found in country workshops and depots to display under Loco No 1 and its train.
- It is very rare for a country to retain its first locomotive as most were scrapped. This makes Locomotive No 1 one of the most historically significant objects in NSW.



Locomotive No 1 being hauled by a team of horses in 1917.

Discussion points

1. Look closely at the cross-section of rail track on which Locomotive No 1 sits. The track is known as Barlow rail.
 - How is it different from the rails used today?
 - Why do you think it failed to carry heavy locomotives?
2. What caused the labour shortage in NSW in the early 1850s?
3. In 1917, Locomotive No 1 was moved for a display. A black and white photo (in the exhibition and above) shows the engine being hauled from the Museum down Mary Ann Street, Ultimo.
 - Can you spot any difference between the engine as shown in the photo and the one on display?
 - Why do you think a team of horses was used to move the locomotive?
4. At first locomotives were fuelled with local timber. From 1861, they were converted to coal burning.
 - What were the reasons for this change?
5. Read the exhibition labels and find out how the three carriages were reused after they were decommissioned from service.

LOCOMOTIVE No1

150 Years of Railways in NSW

+ Railway travel in 1863

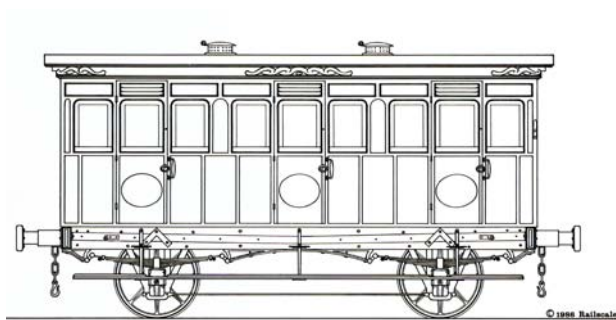
Walk along the platform to see what rail travel was like in 1863. Imagine Sydney's first railway has been open for eight years and is now part of everyday colonial life. Locomotive No 1, with a train load of passengers, has stopped at Ashfield Station on its way to Penrith. If you listen you may hear some of the passengers talking.

Did you know?

- The Sydney to Parramatta line had just been extended to Penrith in January 1863. The fares from Sydney to Parramatta in 1855 were 4 shillings (equivalent to about \$80 today) for first class, 3 shillings for second class and 2 shillings for third class. By comparison, a coach fare was six pence to a shilling for the same distance. In the 1850s, a farm labourer might earn 10 shillings a week; a tradesman, £3 or £4.
- Travelling third class became so popular, even with wealthy people, that the railway had to abolish it in late 1863 in order to make a profit on second and first class fares.

Discussion points

1. Locomotive No 1: in the cab
 - Identify the engine driver and the fireman.
 - Describe the conditions under which the driver and the fireman had to work.
2. First class carriage: travelling in style
 - Why was the first class carriage always placed immediately behind the locomotive? (Remember the locomotive was still using coal as fuel.)
 - Look in the carriage. What sort of objects did gentlemen carry with them in 1863?



First class carriage.



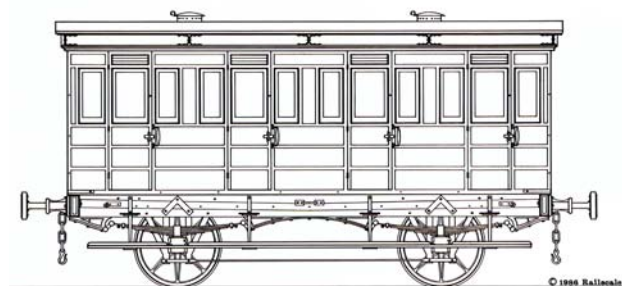
The 'Bullock family' travel second class in middle class comfort.

Travelling first class are John Whitton and Captain Saunders.

- Who is John Whitton and what is the purpose of his trip?
 - Can you tell who is who in the carriage?
 - Are they having a conversation? What they are talking about?
3. Second class carriage: middle class comfort
 - Compare the furnishings of the second class carriage with the first class one. Spot the differences.

Travelling inside the second class carriage is the Bullock family (*above*). They are talking about their shopping trip to Sydney for Arabella's wedding.

- What have they bought?
- What do these items tell you about the home of the Bullocks in 1863 compared to that of a twenty-first century home.



Second class carriage.

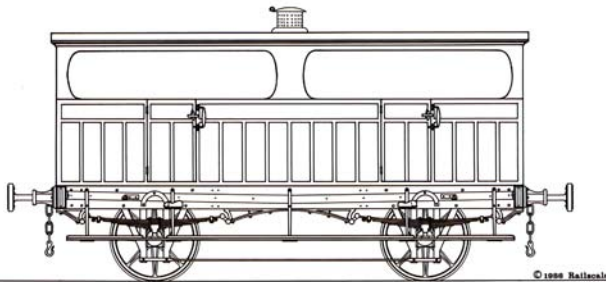
LOCOMOTIVE No1

150 Years of Railways in NSW

4. Third class carriage: ... the most basic
- Compare the third class carriage with the second class.

Mrs O'Brien and her two children, Bridget and Liam, are travelling with all their worldly possessions and it is their first train trip.

- What are some of the things that they are carrying?
- Where are they going?



Third class carriage.

5. Stereoscopic viewers (on the platform)

From the 1850s, viewing stereoscopic photographs became a phenomenal craze in Australia.

- Look through the viewers and turn the knob to see Locomotive No 1 and scenes of Sydney in 3-D.

6. The first railway in NSW: at a glance
- Find the track gauge, what was it used for?
 - Find the water flask, why is it unusual?
 - Locate the candelabrum (candle holder). What is the story behind this magnificent object?
 - Find the portion of the 1854 Map of the City of Sydney. According to this map, where was the Sydney to Parramatta line intended to reach?

+ Mammoths and miniatures

Steam locomotives — whether they are working examples of the real thing or intricately made scale models — ignite the passions of railway enthusiasts. These two showcases feature 32 and 38 class steam locomotives of the NSW Railways.

Discussion points

1. The first of the 38 class locomotives was launched in NSW in 1943. Though the 38 class was regarded as one of the finest express locomotives of the steam age, its launch was met with little fanfare. Why do you think it failed to generate much attention? Discuss.
2. Due to the skills, dedication and commitment of museum professionals and volunteers, Locomotive 3830 was completely rebuilt and Locomotive 3265 is being reconstructed. Why is it important to preserve these locomotives? Discuss.

+ Post-visit activities

1. My first train trip
Imagine you are Mrs O'Brien's daughter, Bridget. You are 12 and going to work as a kitchenmaid for a wealthy Parramatta family.
 - Write a story on the experience of your first train trip. (Remember you have only been in a horse-drawn vehicle — never in a car, plane or train.)
2. The turf-turning celebration on 3 July 1850 (*pictured above*)
To build the first railway in NSW, the Sydney Railway Company was formed in 1848. After two years of inactivity, the company was suffering from local apathy. To renew interest from the public on the railway project:
 - Design a poster to promote the turf-turning celebration.
 - Draft a speech for the head of the Sydney Railway Company arguing the significance of the railway to the people of Sydney and NSW and the benefits it would give the state.
3. The great Australian gauge debacle
James Wallace was the third engineer employed to build the Sydney Railway in 1852. He was the one who made it happen by introducing technical innovations, new plans and specifications. However, his decision to change from Irish broad gauge track to English standard gauge on the grounds of 'speed,

LOCOMOTIVE No1

150 Years of Railways in NSW



Governor Fitzroy's daughter turned the first turf for the Sydney railway in 1850. This lithograph records the event.

safety, convenience and economy' brought about the gauge debacle. The railway companies in Victoria and South Australia had already ordered broad gauge rolling stock to match the original NSW choice and refused to alter their plans.

John Whitton was engineer-in-chief of the NSW Railways from 1857. Whitton strongly supported a uniform gauge for all Australian railways and advocated that NSW railways

convert to the Irish broad gauge adopted by Victoria and South Australia.

- Imagine you are John Whitton and his engineers preparing to present your case to the NSW government, arguing for the importance of converting the standard gauge to the Irish broad gauge. Work in groups then present your case to the rest of the class.

LOCOMOTIVE No1

150 Years of Railways in NSW

+ Glossary

Ballast train — train that transports ballast (small stones) used as a bed for railway sleepers.

Brake van — wagon in a train that contains the braking apparatus operated by the guard.

Culvert — pipe or small tunnel beneath a railway embankment that carries water.

Engine driver – driver of a locomotive.

Fireman — crew member whose job is to stoke the fire to produce steam to power the locomotive.

Gauge — distance between the rails of a track. Standard gauge is 1435 mm. Irish broad gauge is 1600 mm.

HO scale — the 1:87 scale or modelling ratio used by railway model makers.

N scale — the 1:160 scale or modelling ratio used by railway model makers.

Navy — manual labourers employed on canal construction in England (navigations) who went on to work on the railways.

Rolling stock — railway vehicles other than locomotives such as passenger carriages and goods wagons.

Tender — a vehicle coupled to the rear of a steam locomotive, which carries its fuel and water supplies.

Sleeper — timber beam lying on the ballast to which the rails are secured.

Viaduct — arched structure or bridge designed to carry a railway over a river, valley or low-lying ground.

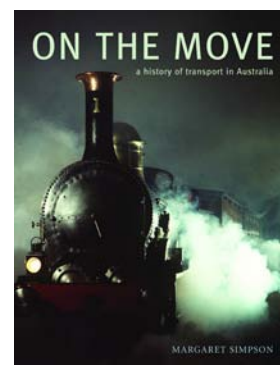
+ Resources

Margaret Simpson, *Locomotive No 1*, Powerhouse Publishing. Available from the Powerhouse Museum Shop, \$9.95

Margaret Simpson, *On the move: a history of transport in Australia*, Powerhouse Publishing, \$35.95.

Chapter 7 Transport II Railways, Technology in Australia: 1788 — 1988 by the Australian Academy of Technological Sciences and Engineering on www.austehc.unimelb.edu.au/tia/448.html

Celebrating 150 years of NSW rail transport on www.railcorp.info/150years



Please note: the websites referred to in these notes were available and suitable at the time of publication. We advise teachers to check sites before recommending them to students.

LOCOMOTIVE No1

150 Years of Railways in NSW



The earliest known photo of Locomotive No 1 taken in Sydney yard about 1858. This stereoscopic photo is designed to be seen through a special viewer. Two of these viewers are located on the platform in the exhibition.

For more information on the exhibition
Locomotive No 1: 150 years of railways in NSW,
visit the Powerhouse Museum's website
[www.powerhousemuseum.com/exhibitions/
locomotive1.php](http://www.powerhousemuseum.com/exhibitions/locomotive1.php)

For more information about education support
or your booking, contact Bookings at the
Powerhouse Museum:
Telephone — (02) 9217 0222
Fax — (02) 9217 0622
Email — edserv@phm.gov.au

Subscribe to Education enews

For updates about what's on for teachers including upcoming exhibitions and education programs
subscribe to our Education enews email bulletin.

www.powerhousemuseum.com/education/teacheremailsSignup.php

ph^m
powerhouse museum
science + design

500 Harris Street Ultimo
PO Box K346 Haymarket 1238
www.powerhousemuseum.com

© 2006 Trustees of the Museum of Applied Arts and Sciences, revised September 2007, February 2012. The design and images in this publication are copyright. Apart from fair dealing for the purposes of research, study, criticism or review, or as otherwise permitted under the Copyright Act, no part may be reproduced by any process without written permission.



Text may be used under Creative Commons Licence, Powerhouse Museum, 2009. Attribution-Noncommercial-No Derivative Works 2.5 Australia.

The Powerhouse Museum, part of the Museum of Applied Arts and Sciences also incorporating Sydney Observatory, the Powerhouse Discovery Centre and the NSW Migration Heritage Centre, is a NSW government cultural institution.