



TEACHERS NOTES

Guided trails, curriculum links and practical information to plan your next school excursion to the NSW Rail Museum.



nswrailmuseum.com.au



INTRODUCTION

Welcome to the NSW Rail Museum

In the past everyone and everything used to travel on the train.

The railways revolutionised people's lives: they brought people together, allowed the transport of goods and services across great distances and into new areas, introduced 'railway time' and timetabling, provided people with jobs and built communities.

NSW Rail Museum tells the story of NSW rail history through Australia's largest showcase of rolling stock, railway objects and memorabilia. Students are able to see a wide variety of historic trains on display and gain insights into the way in which transportation changed and continues to change lives in NSW.

Contents

These Teachers Notes provide you with practical information about the NSW Rail Museum museum, how to get there, historical background, object information and a range of suitable activities to do with your class before, during and after your visit.

We have selected some key objects to form a guided trail around the site, with suggested discussion questions and answers for you.

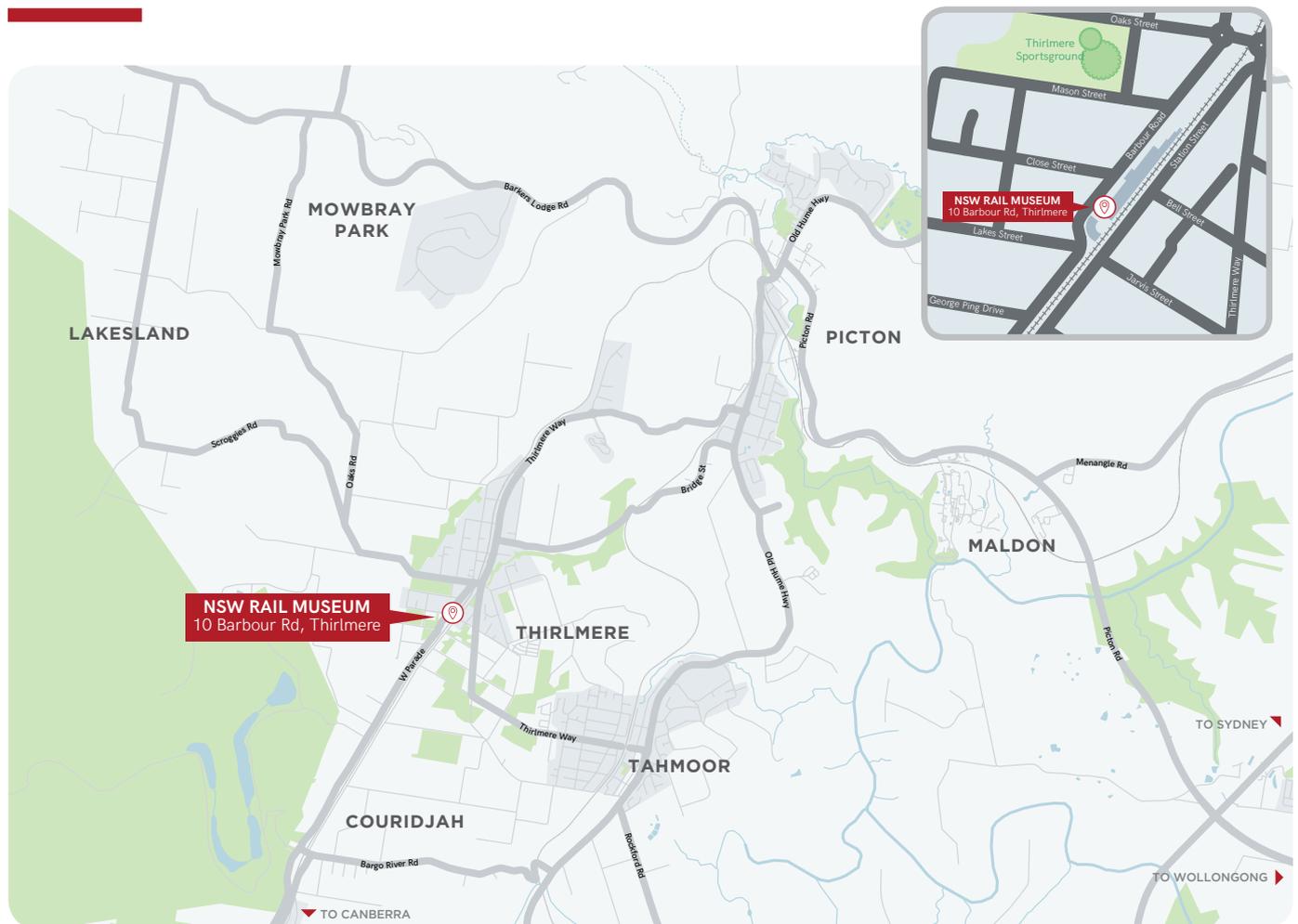
Based on this trail, you can engage students in discussion around key topics ranging from how steam power and steam machines work, to how NSW Railways brought life to the town and country and the various occupations which it sustained. This resource can accompany a guided tour or form the basis of a self-guided visit.



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PRACTICAL INFORMATION FOR SCHOOLS

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Getting to NSW Rail Museum

NSW Rail Museum is in Thirlmere, only an hour south west of Sydney and in easy reach of Canberra, Wollongong and the Southern Highlands.

BY ROAD

If you are travelling by road take the Picton Rd Exit off National Highway 31 (M5/Hume) Follow the signs from Picton.

Bookings

All groups visiting NSW Rail Museum must book in advance. Booking enquiries can be made via the online form at www.nswrailmuseum.com.au/group-bookings

or by phone on 4683 6800. We will contact you to confirm your booking.

PRICES

Guided visit \$10 per student. Self-guided visit \$8 per student. Guided visit including railmotor \$15 per student. Accompanying teachers, parents and carers free of charge, to maximum ratio of 1:10.

PAYMENT

Payment by cheque can be made on the day. Alternatively, if you would like an invoice to be sent to your school, please let us know in advance.

MAKING THE MOST OF YOUR VISIT

Research suggests that learning in museums is maximised if the students are prepared for their visit with an overview of the program and the museum layout, are familiar with

the key concepts, and the visit is integrated into units of work being studied at school. The accompanying notes in this information pack will assist with this.



On Arrival

Please see staff at the reception desk when you arrive. They will assist you with cloaking and let you know where to go. All school visits, including self-guided visits, begin with an introductory talk in the theatrette.

CLOAKING

As there is limited storage space available, we ask that students do not bring school bags to NSW Rail Museum. Tubs will be provided to securely store lunches.

TOILETS

Toilets are located close to the main entrance and in the Great Train Hall.

COACH PARKING

Coaches are able to stop at the front entrance for drop off and pick up. However, we ask that waiting coaches use the coach bay on Barbour Road.

LATE ARRIVAL

Please notify NSW Rail Museum on 4683 6800 on the day if your group will be late. We cannot guarantee the availability of guides if your group arrives earlier or later than the confirmed arrival time.

MORNING TEA/LUNCH

All-weather lunch areas are available. Tubs will be provided to store lunches.



Supervision and Safety

RISK ASSESSMENT

The NSW Rail Museum venue safety information document can be downloaded from the NSW Rail Museum website: www.nswrailmuseum.com.au/group-bookings

SUPERVISION RATIOS

Students must be accompanied by teachers/ parents who are responsible for students' behaviour onsite. A ratio of 1:10 is recommended for school groups.



Activity sheets to use during and after your visit are supplied as an additional resource. Download from the NSW Rail Museum website.

INSURANCE

The NSW Rail Museum site is covered by public liability insurance.



Accessibility

Disability parking is available in the NSW Rail Museum car park.

Wheelchair accessible toilets are available in the Main Exhibition Building and in the Great Train Hall.

There is a hearing aid loop in the theatrette.

Single level access available to all areas.

Ramp access to the Great Train Hall platform and the Roundhouse viewing area.



Opening Hours

NSW Rail Museum is open seven days:

Monday to Friday 10am - 4pm

Saturday & Sunday 9am - 5pm



Contact

NSW RAIL MUSEUM

10 Barbour Rd, Thirlmere NSW 2572

Ph: 4683 6800

info@nswrailmuseum.com.au

www.nswrailmuseum.com.au

A SHORT HISTORY OF NSW RAILWAYS

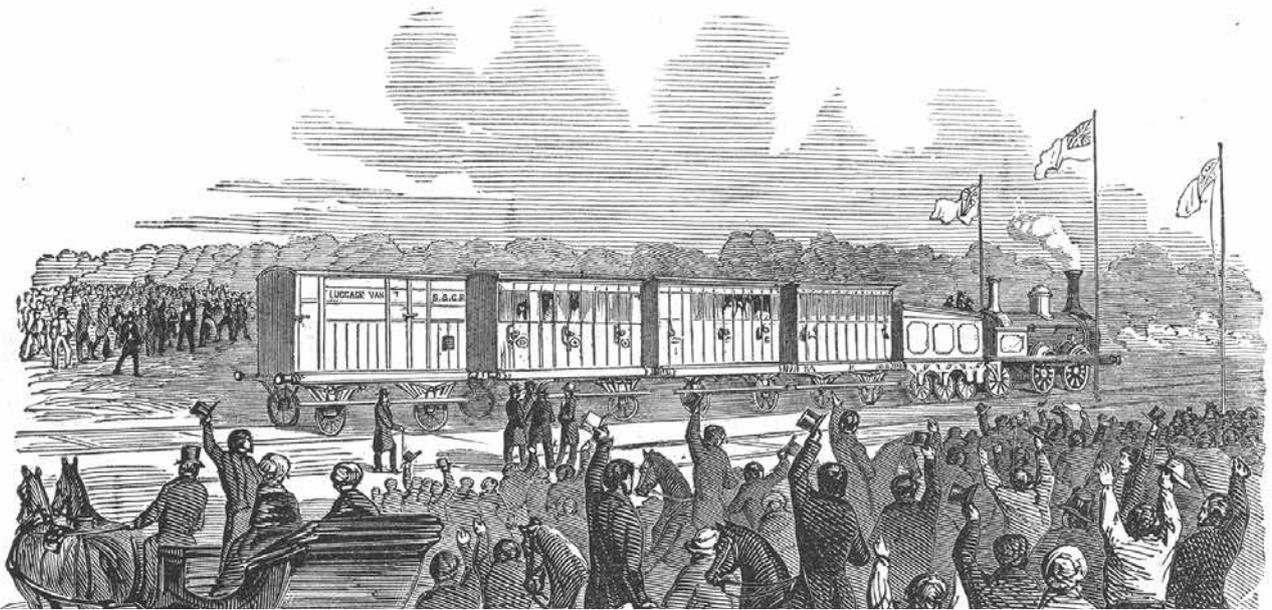


IMAGE ABOVE: The first train arrives at Parramatta, September 26, 1855. Walter G. Mason, National Library of Australia, nla.obj-138452395

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The railways revolutionised the lives of ordinary people in NSW: they brought people together, allowed the transport of goods and services across great distances and into new areas, introduced 'railway time' and timetabling, provided people with jobs and built communities.

Each object on display at the NSW Rail Museum has its own story to tell about the social, economic and technological significance of the railways to the state's history.

The social impact of the coming of the railways was profound. Even though the earliest trains were slow by modern standards, a trip that would once have taken several days by horse and cart could be completed in a matter of hours. This brought about the rise of commuting, as people could now live further away from their place of employment and suburbs grew around railway stations. In Sydney, the suburbs that developed alongside the main lines to Liverpool and Penrith enabled the city to double in size between 1855 and 1880. In regional areas, towns thrived or died depending on whether they had a railway station or not.

Tourism and leisure travel was revolutionised as a day trip or a holiday to the sea, or the snow, or family in the country became possible for the average person.

Large numbers of people could be moved quickly and efficiently for major cultural and sporting events. Leisure activities, such as circuses, were able to travel by rail to regional areas.

Most of the state's farming areas would never have been profitable without the railways. In addition to wheat, dairy, livestock and fresh fruit and vegetables could now be transported to the lucrative Sydney markets before spoiling. Manufacturers and retailers could move their goods around the state in greater quantities than was possible by horse. Dignitaries could travel in comfort and arrive for public duties refreshed. Information was conveyed across the state to communities large and small in the form of mail, newspapers, magazines, catalogues, books and parcels.

The workshops at Eveleigh were once the largest industrial complex in Australia and for many years the NSW railways was the state's largest employer. The railways brought training, skills and a lifetime of stable employment to the tens of thousands who worked for it, in every type of job from cleaners to commissioners, boilermakers to bartenders, foremen, firemen and fitters, clerks and clock winders, waitresses, signalmen, stationmasters and gatekeepers. There was a job for everyone.

Thank you for visiting the NSW Rail Museum. We hope your visit is an unforgettable rail heritage experience for you and your students.

ABOUT THE NSW RAIL MUSEUM



Since 1975 the historic town of Thirlmere in Sydney's southwest has been home to a significant rail heritage collection, including over 100 rolling stock items, associated with the history of the railways in NSW. The 5-hectare rail corridor site and much of the collection is owned by the state of New South Wales.

The NSW Rail Museum is located in Thirlmere, approximately 90km from Sydney. Thirlmere lies on the original Sydney-Melbourne railway line and, like many towns, was born with the coming of the Great Southern Railway in 1863 to 1867, when a large temporary tent city grew up to house the railway workers. It was valued for its proximity to Thirlmere Lakes which provided water for the steam trains. The water was pumped to a siding at the nearby town of Couridjah.

The Thirlmere section of the Main Southern Railway was deviated in 1919 to a less steep alignment with easier grades, and the original line became the Picton Loop Line. Today, the Loop Line provides a link to the main line which enables heritage trains to operate beyond the local area and to run on a line clear of other working trains.

In 2007, the then Office of Rail Heritage produced a master plan to upgrade the accommodation for, and improve the presentation of, a significant component of the State's core rail heritage collection. The upgraded facility included a multifunctional exhibition building and new workshop and was opened in March 2011 as Trainworks. In May 2017, Transport Heritage NSW merged Trainworks and Heritage Express (its rail operations arm) into one unified brand, the NSW Rail Museum.

The museum houses approximately 130 items of State-significant heritage rolling stock, including the luxurious carriage built for the first Governor-General of Australia on loan from the Museum of Applied Arts and Sciences. Many small rail heritage objects are also displayed and interpreted.

Visitors now enjoy a unique, vibrant mix of interactive exhibits and displays, multimedia presentations, guided tours, public programs and heritage train rides.

The NSW Rail Museum is proudly brought to you by Transport Heritage NSW. To learn more, visit our website: www.transportheritagensw.com.au.

CURRICULUM LINKS

The NSW Rail Museum Education Program supports the NSW Syllabus for the Australian Curriculum in the following areas:

HISTORY K-10		
Unit	Outcomes	Content
Early Stage 1 PERSONAL AND FAMILY HISTORIES	<p>HTe-1 Communicates stories of their own family heritage and the heritage of others</p> <p>HTe-2 Demonstrates developing skills of historical inquiry and communication</p>	<p>ACHHK004 How the stories of families and the past can be communicated, for example through photographs, artefacts, books, oral histories, digital media and museums</p> <p>ACHHS016 Distinguish between the past, present and future</p> <p>ACHHS017 Pose questions the past using sources provided</p> <p>ACHHS018 Explore a range of sources about the past</p> <p>ACHHS019 Identify and compare features of objects from the past and present</p> <p>ACHHS021 Explore a narrative about the past</p>
Stage 1 PRESENT AND PAST FAMILY LIFE	<p>HT1-1 Communicates an understanding of change and continuity in family life using appropriate historical terms</p> <p>HT1-4 Demonstrates skills of historical enquiry and communication</p>	<p>ACHHK029 How the present, past and future are signified by terms indicating time such as 'a long time ago', 'then and now', 'now and then', 'old and new', 'tomorrow', as well as by dates and changes that may have personal significance, such as birthdays, celebrations and seasons</p> <p>ACHHS030 Differences and similarities between student's daily lives and life during their parents' and grandparents' childhoods, including family traditions, leisure time and communications</p>
Stage 1 THE PAST IN THE PRESENT	<p>HT1-2 Identifies and describes significant people, events, places and sites in the local community over time</p> <p>HT1-3 Describes the effects of changing technology on people's lives over time</p> <p>HT1-4 Demonstrates skills of historical enquiry and communication</p>	<p>ACHHS031 Sequence familiar objects and events</p> <p>ACHHS032 Distinguish between the past, present and future</p> <p>ACHHS033 Pose questions about the past using sources provided</p> <p>ACHHS034 Explore a range of sources about the past</p> <p>ACHHS035 Identify and compare features of objects from the past and present</p> <p>ACHHK044 The history of a significant person, building, site or part of the natural environment in the local community and what it reveals about the past</p> <p>ACHHK046 The impact of changing technology on people's lives</p> <p>ACHHS047 Sequence familiar objects and events</p> <p>ACHHS048 Distinguish between the past, present and future</p> <p>ACHHS049 Pose questions about the past using sources provided</p> <p>ACHHS050 Explore a range of sources about the past</p> <p>ACHHS051 Identify and compare features of objects from the past and present</p> <p>ACHHS052 Explore a point of view</p> <p>ACHHS053 Develop a narrative about the past</p>

CURRICULUM LINKS (cont...)

HISTORY K-10 (cont...)

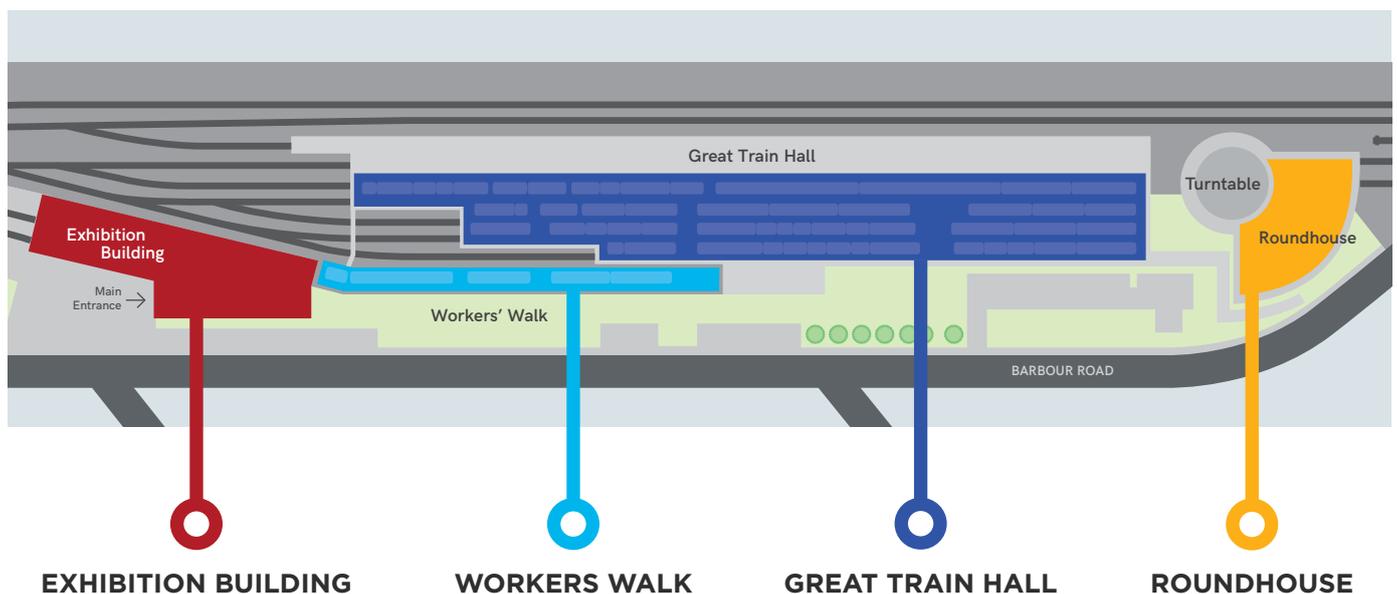
Unit	Outcomes	Content
Stage 2 COMMUNITY AND REMEMBRANCE	<p>HT2-2 Describes and explains how significant individuals, groups and events contributed to changes in the local community over time</p> <p>HT2-5 Applies skills of historical enquiry and communication</p>	<p>ACHHK061 One important example of change and one important example of continuity over time in the local community, region or state/territory</p> <p>ACHHS065 Sequence historical people and events</p> <p>ACHHS066 Use historical terms</p> <p>ACHHS067 Pose a range of questions about the past</p> <p>ACHHS215 Identify sources</p> <p>ACHHS068 Locate relevant information from sources provided</p> <p>ACHHS070 Develop texts, particularly narratives</p>
Stage 3 THE AUSTRALIAN COLONIES	<p>HT3-1 Describes and explains the significance of people, groups, places and events to the development of Australia</p> <p>HT3-5 Applies a variety of skills of historical inquiry and communication</p>	<p>ACHHK094 The nature of convict or colonial presence, including the factors that influenced patterns of development, aspects of the daily life of inhabitants and how the environment changed</p> <p>ACHHK095 The impact of a significant development or event on a colony; for example the advent of rail, the expansion of farming</p> <p>ACHHS084 Locate relevant information from sources provided</p>
Stage 5 Depth Study MAKING A BETTER WORLD: THE INDUSTRIAL REVOLUTION		<p>ACDSEH017 The technological innovations that led to the Industrial Revolution, and other conditions that influenced the industrialisation of Britain and of Australia</p> <p>ACDSEH080 The population movements and changing settlement patterns during this period</p> <p>ACDSEH081 The experiences of men, women and children during the Industrial revolution, and their changing way of life</p> <p>ACDSEH082 The short and long term impacts of the Industrial Revolution, including global changes in landscapes, transport and communication</p>

MUSEUM TRAIL GUIDE



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Below you will find two guided trails of the museum to help with your visit. They include suggested routes, key objects, student discussion questions and answers. Activity sheets for use in conjunction with these suggested routes can be downloaded from the NSW Rail Museum website.

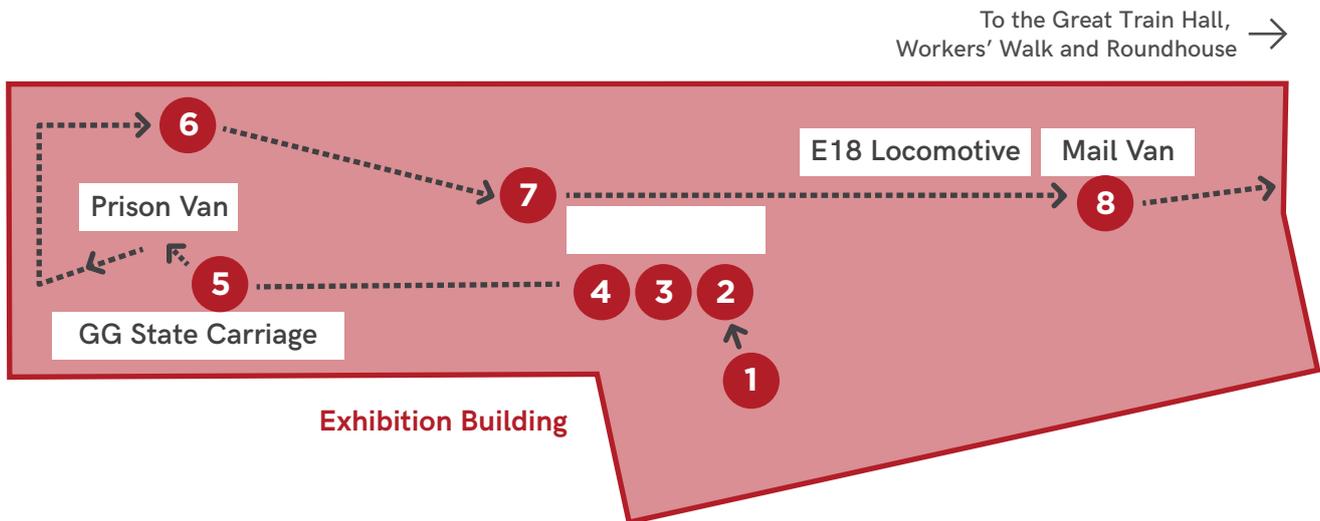


EXHIBITION BUILDING

WORKERS WALK

GREAT TRAIN HALL

ROUNDHOUSE



Main Exhibition Building Trail

The Main Exhibition Building is where you will discover how the NSW Railways brought life to the town and country. Inside you will see displays about life on the lines and in the workshops, engineering and design achievements of the railways and how the railways revolutionised tourism and leisure travel in Australia. You can also find out how signals and points keep the lines safe, walk the timeline visualising rail development from the invention of the very first steam powered engine through to today, use interactives to demonstrate rail technology and experience some of the more unique rail services.

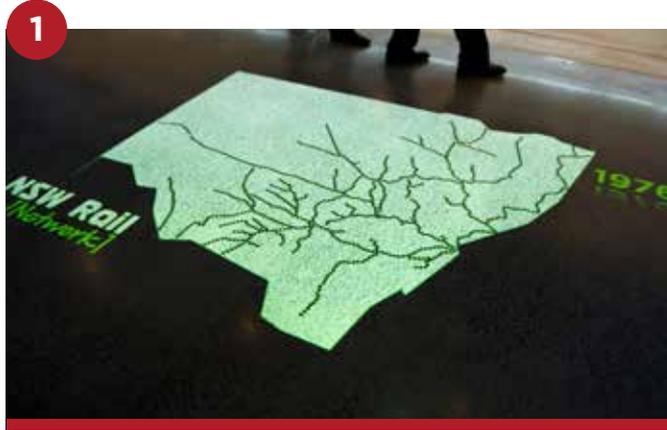
KEY THEMES IN THE EXHIBITION BUILDING

- Timeline of steam and rail technology and development
- How steam works
- The first NSW rail tracks
- Trains — the main town attraction
- Rail travel for tourism and leisure
- Varying rail purposes and experiences
- Mail trains
- Signals and operations
- Ticketing and refreshments
- Social change

SUGGESTED STOPS

- 1 First Tracks
- 2 Growth Engine
- 3 Take Your Seats!
- 4 Eat, Drink and Be (not too) Merry
- 5 The Governor General's Carriage and Prison Van
- 6 Working on the Railways
- 7 Timeline
- 8 Mail Van

MUSEUM TRAIL GUIDE (cont...)



MAIN EXHIBITION BUILDING TRAIL

STOP 1 - FIRST TRACKS

Look down. Here you can see an interactive map showing the development of the NSW rail network from 1860 to the present day.

In the mid-19th century, wealthy pastoralists looking for a faster, cheaper way to get their wool to market started pushing the case for an extension of the fledgling rail network into regional areas. As the dominant industry of the time, the sheep farmers had a lot of influence and eventually the tracks were built, opening up vast areas of NSW.

The spread of the railway also made it easier to log the forests and to supply the railways with timber for railway sleepers, bridges and station buildings. Wheat and dairying also opened up many lines.

Mining was the other big driver of the early growth of the railways. Miners on the goldfields could carry their gold out, but coal mining was different. The best way to get coal from pit to port was by train. In fact it still is.

MAIN EXHIBITION BUILDING TRAIL

STOP 2 - GROWTH ENGINE

It's difficult to imagine the great impact made by whether trains stopped in your town or not. The train station was the place to be! It was a real social hub where people came to meet and see off friends and family, travellers jumped off the train and raced to grab a cuppa, and news and ideas arrived in the form of gossip, mail and books. Goods were also carried on and off the train and livestock clambered up the loading ramps.

In sparsely populated areas and in hilly terrain, new towns formed purely to house and maintain steam locomotives and provide other railway services. Train travel also meant that clocks in cities and towns across the state needed to tell the same time for the very first time — 'railway time'.

In the cities, suburbs sprang up next to the railway lines. In Sydney, the suburbs that developed alongside the main lines to Liverpool and Penrith enabled the city to double in size between 1855 and 1880.

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QUESTIONS TO DISCUSS

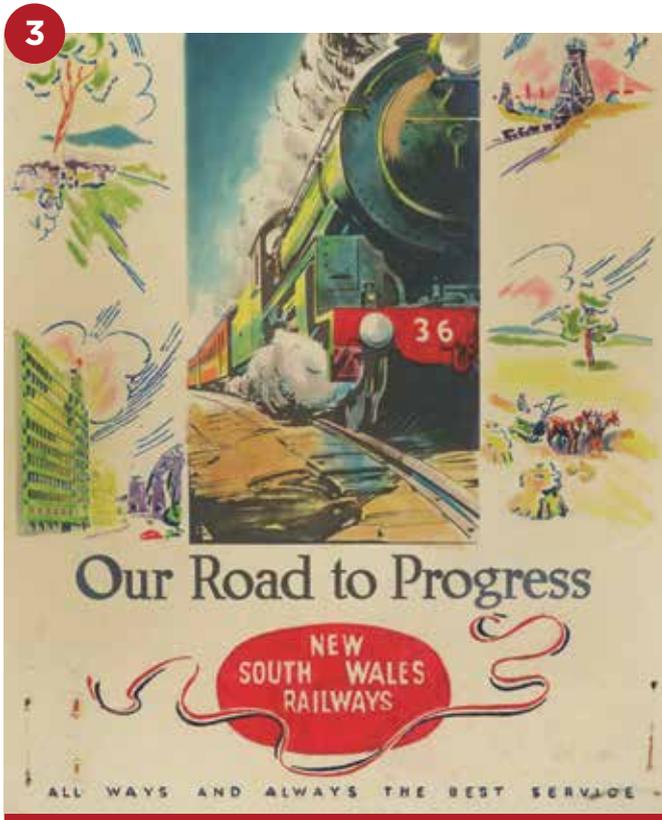


1. What other goods might be carried by rail?
[Milk, wheat, coal, livestock etc.]
2. [Extension Question] Take a look at the Rail Network Interactive shown on the floor. Where have lines been removed from the NSW network? Why might that be? *[Mainly in rural areas. This is due to a number of factors such as urbanisation, closure of mines, drought, prevalence of cars and trucks.]*

QUESTIONS TO DISCUSS



1. Which station is closest to your school?
2. Which line is it on?
3. Do you think it was initially developed to carry passengers or goods?



MAIN EXHIBITION BUILDING TRAIL

STOP 3 - TAKE YOUR SEATS!

The railways revolutionised tourism and leisure travel in Australia. Fast, affordable and grand, train travel appealed to people from all walks of life.

Special excursion trains took city people to nearby resorts. The trains also brought country people to the city and coast and sometimes right to the seaside.

A new era of luxury train travel began in the early 1960s with the introduction of the sleek, air-conditioned, stainless steel cars with exciting and exotic names such as the *Southern Aurora*.

QUESTIONS TO DISCUSS



1. Can you still take luxury trains? [Yes.]
2. Where do they depart from? Where do they go? [From Sydney Terminal (Central Station) to other capital cities or major regional centres like Broken Hill.]
3. Where would you like to go by train?



MAIN EXHIBITION BUILDING TRAIL

STOP 4 - EAT, DRINK AND BE (NOT TOO) MERRY

Train journeys used to take a considerable amount of time. Railway Refreshment Rooms (RRRs) opened at stations across the state to cater for hungry and thirsty passengers. The women who staffed these rooms did everything they could to be prepared for the sudden rush of customers.

During the 1920s, silver service dining rooms were established at Sydney Terminal and Newcastle railway stations, like the first class lounges at international airports today. Onboard sleeping accommodation was first provided in 1890 and on-board refreshment services followed, eventually replacing the traditional RRRs by the 1960s.

QUESTIONS TO DISCUSS



1. What kind of items can you see that may have been used in the silver service dining rooms? [Salt and pepper shakers, creamers, sugar bowls, cups, gravy boats, toast racks etc.]

MUSEUM TRAIL GUIDE (cont...)

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MAIN EXHIBITION BUILDING TRAIL

STOP 5 - THE GOVERNOR GENERAL'S CARRIAGE AND THE PRISON VAN

Private carriages and compartments offered contrasting experiences. Two of these very different experiences are located close to where you're standing — the Governor General's carriage (GGC) and the prison van. You can go inside the prison van but you can only look through the windows of the GGC.

Royal visitors, their Australian representatives and other dignitaries travelled by rail in suitable style. A fleet of special VIP carriages was built by the NSW Railways between 1891 and 1920 for use by these people. The pride of the fleet was the GGC. It was built at the Eveleigh workshops and completed in 1901.

The Queen used this carriage when she toured Australia with her husband, Prince Philip, in 1954. Take a look inside at the artisan detail. A showcase of national pride features in ornately hand-carved Australian cedar panelling depicting native Australian flora.

Prisoners also had their own transport. The railway prison vans were in regular use from 1867 to the 1950s, transferring prisoners to court and to gaol. Up to 14 male and 8 female prisoners could fit in vans like this one. It was decommissioned in 1975.



QUESTIONS TO DISCUSS



1. [Extension Question] What sort of details in the GGC tell us that it is Australian? [*The Australian cedar wood, the panels depicting native Australian flora etc.*]
2. What is it like inside a prison van?
3. Which one would you prefer to ride in?

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MAIN EXHIBITION BUILDING TRAIL

STOP 6 - WORKING ON THE RAILWAYS

Here you can see what life was like for a large cross-section of society working for the NSW Railways.

Apart from the more obvious jobs on the trains themselves, the early railways offered a diverse range of roles within a strong work culture.

The working culture was hierarchical, with an emphasis placed on safety. Promotion was primarily based on length of service and loyalty.

It was not uncommon for many generations of men and women from the same family to work for the railways.

By the 1950s, NSW Government Railways was Australia's biggest business, employing over 62,000 people.

Up until World War II, opportunities for women on the railways were mainly limited to working in the RRRs. The first female apprentice joined in 1975 and the first 'signalman' in 1975. But the first female train guard was not employed until 1982, and the first female train driver in 1985.



QUESTIONS TO DISCUSS

1. Have a look at the women's outfits on display. What roles do these uniforms represent? *[Service and hosting roles, mainly indoors, no heavy labour.]*
2. Why are clocks an important part of the railway? *[Trains need timetables to run efficiently. This means that people must have a common time they can rely on and so clocks at the station are very important.]*
3. Go to the ticket booking office. How would you know where the train was stopping? How would you know what time it was coming? *[The board shows the next train stops. It can be moved manually depending on the route of the next train. The clock on top of the board shows when the next train is due.]*

MUSEUM TRAIL GUIDE (cont...)

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MAIN EXHIBITION BUILDING TRAIL

STOP 7 - TIMELINE

A timeline showing NSW's rail heritage and achievements can be found on the ramp ascending near the prison van and locomotive M78 on the lower level of the Main Exhibition Building. It also charts the history of steam powered machines.

What is steam power? Where does it come from?

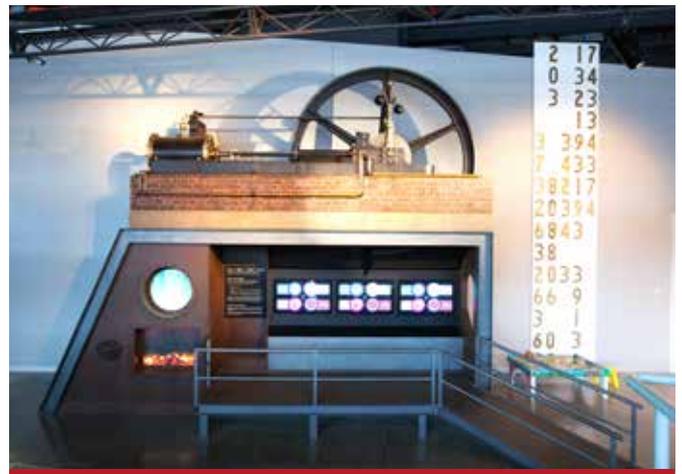
Examples of harnessing the power of heated water date back to the Ancient Greek mathematician, Hero of Alexandria (10-70 AD), but these early machines were very limited and many had little or no practical use for people.

Eventually steam-powered engines began to be used for things like pumping water out of deep mines and powering simple turbines, leading to James Watt's improved steam engine designs in the late 1700s in Britain.

By the early 1800s, steam power had been successfully applied to transportation, leading to the development of the steam train.

Steam power allowed us to develop transport along rails, without requiring a person or animal to move it. The speed and weight carried could then be increased. The birth of the train heralded a new age.

A simple demonstration of how steam power works can be found at the Steam Machine near the theatrette. Turn the wheel to increase the heat and show how steam is generated.



On the platform near the top of the timeline ramp you can see how signals work and have a go at pulling the signal lever. You can also climb into the cab of steam locomotive E18 and see what it carried for fuel.

QUESTIONS TO DISCUSS



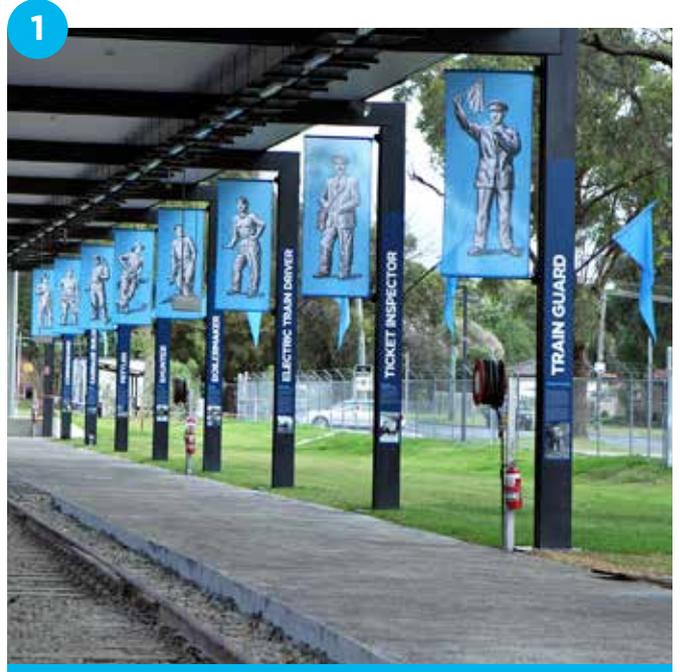
1. How does steam make the locomotive move?
[Steam in the cylinders pushes against pistons, which push connecting rods that turn the driving wheels.]
2. What fuels steam trains? What fuels our bodies?
What fuels cars? *[Coal, food, petrol.]*



MAIN EXHIBITION BUILDING TRAIL

STOP 8 - MAIL VAN

The Travelling Post Office was a feature of Australian railways from 1865 until 1985. Built in 1891, this mail van delivered news and goods to people across NSW. On-board sorting occurred during the night and sped up delivery times. That's why the overnight rural trains were called 'mail trains'. Mail sent via the van directly and not through a post office incurred an additional fee.



WORKERS WALK

STOP 1 - THE WORKERS' WALK

Linking the Main Exhibition Building and the Great Train Hall is Workers' Walk.

Here you will discover 14 jobs from the NSW Railways.

Roles on display:

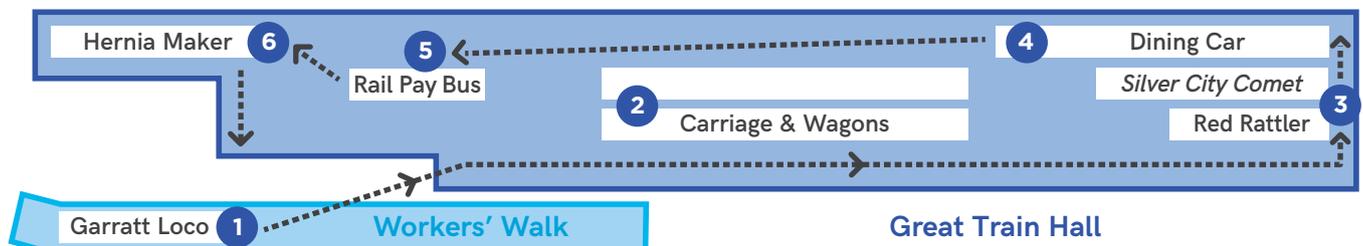
- Stationmaster
- Steam Train Driver
- Electric Train Driver
- Carriage Maker
- Station Porter
- Fireman
- Boilermaker
- Commissioner
- Signalman
- Train Guard
- Shunter
- RRR Staff
- Inspector
- Fetter

QUESTIONS TO DISCUSS



1. How is the mail sorted? *[Parcels and letters are separated and then they are sorted by destination area so that these can be dropped to a central point, which will do further sorting and delivering.]*
2. How was mail delivered before Travelling Post Offices existed? *[By postman on horseback, or Cobb & Co coaches between towns where there was no railway.]*

MUSEUM TRAIL GUIDE (cont...)



Great Train Hall Trail

The Great Train Hall features an impressive collection of steam, diesel and electric locomotives as well as many different types of passenger carriages and goods wagons. Visitors are able to climb aboard some of the carriages and a platform allows a special view into unique and rare carriages.

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KEY THEMES IN THE GREAT TRAIN HALL

- Locomotives and carriages
- Passenger trains
- Goods trains
- Livestock and animal transport
- Cranes and work trains
- Steam, diesel and electric power
- Luxury and dining cars
- NSW rail innovations

SUGGESTED STOPS

- 1 Going Loco about Locos
- 2 Carriages and Wagons
- 3 Red Rattler and Silver City Comet
- 4 First Class Passenger Cars
- 5 Rail Pay Bus
- 6 The Hernia Maker (Breakdown Crane)



GREAT TRAIN HALL TRAIL

STOP 1 - GOING LOCO ABOUT LOCOS

Look for the Garratt steam locomotive as you walk to the main part of the Great Train Hall. This was the most powerful steam loco in the Southern Hemisphere.

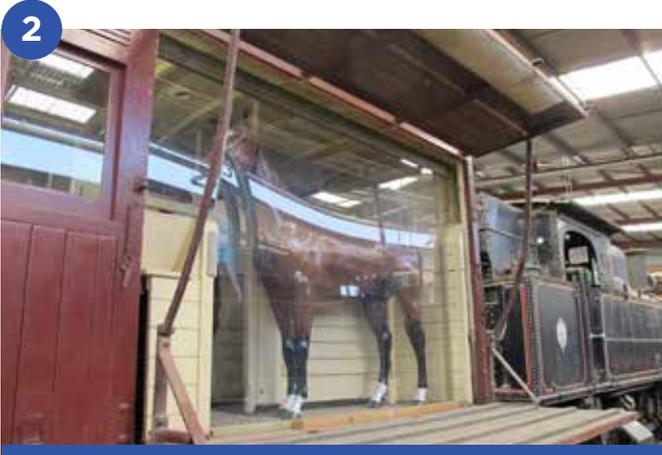
In 1937 the revolutionary *Silver City Comet* was introduced and powered by diesel hydraulic cars. This innovative development wasn't taken further until the introduction of the 40 class main line diesel-electric locomotives in 1951. Most subsequent dieselelectric locomotives have been built by local firms under licence to North American manufacturers.

The first public electric train went into service in Sydney in 1926. It featured two steel motor cars, one timber motor car and three timber trailer cars rebuilt as carriages. This design formed the basis of the Sydney fleet until the 1950s.

QUESTIONS TO DISCUSS



1. What do you think will be the next big step in locomotive development?
2. How can you tell the difference between a steam loco and a diesel/electric loco? [There is no steam funnel on electric/diesel trains.]



GREAT TRAIN HALL TRAIL

STOP 2 - CARRIAGES AND WAGONS

Carriages were first made of timber, then steel. The first passenger carriages rode on four wheels with fixed axles (they were essentially horse carts on rails).

Goods wagons and vans were used to transport all sorts of goods, such as fruit, vegetables, milk, wheat, coal, livestock, petrol and even biscuits. The first goods wagons imported from Britain in 1855 included high-sided open wagons, closed wagons, brake vans, cattle trucks and sheep vans. Moving perishables and other goods across NSW often meant challenging great distance. The absolute best way to move large quantities of goods quickly was by rail.

There was a gradual shift to all-steel freight wagons in the 20th century. The introduction of shipping containers built to international standards promised a new era for railway freight. New wagons were designed specifically to carry containers from 1969. Container traffic is now the major interstate rail traffic.

QUESTIONS TO DISCUSS



1. What things can you see being carried by the wagons?
2. How might different types and shapes of goods be transported? *[Coal in the open metal dumps, horses/ circus animals/livestock in timber with vents, oil in sealed iron ... etc think about the reasons behind the different ways.]*



GREAT TRAIN HALL TRAIL

STOP 3 - RED RATTLER AND SILVER CITY COMET

When the *Silver City Comet* diesel train went into service in 1937 it was the latest thing on rails. A response to European and American high-speed diesel trains, the Comet ran between Parkes and Broken Hill. Completely designed in NSW, it raised standards in speed and comfort. It was also the first NSW train to be fully air-conditioned. The Comet endured until 1989 when it was fully replaced by the XPT.

A big step forward in commuter trains occurred when one of the world's first double-deck electric train with full saloons on both decks entered service in Sydney in 1969. This train was designed specifically to service suburban commuters. They were the forebears of the C/S/K Sets, Waratah, Tangara and Millennium train fleet in use in Sydney today. The first Tangara trains were introduced in 1987. These enabled the implementation of an all double-deck suburban timetable by 1994. In 1994 Sydney became the first city in the world to host a suburban fleet consisting solely of double-decker trains.

QUESTIONS TO DISCUSS



1. What are the benefits of a doubledeck train?
[You can increase passenger capacity.]
2. [Extension Question] What does the design of the *Silver City Comet* say about society at the time?
[It is Art Deco in design and uses silver paint to get a sleek look. These design elements are concerned with modernism and modern methods of construction, movement and speed.]

MUSEUM TRAIL GUIDE (cont...)

4



GREAT TRAIN HALL TRAIL

STOP 4 - FIRST CLASS PASSENGER CARS

Beginning in 1913, a new sleeping car design was introduced, outfitted with ten twin-berth compartments. These cars became standard fare on the overnight sleepers and mail trains and were constructed in large numbers up until 1937. They endured in NSW right up into the 1980s.

Dining Car AB90 is symbolic of a shift from the 'off train' catering of the classic Railway Refreshment Room style, to an onboard dining service. It was originally designed to cater for 30 patrons, and remained in service on the Broken Hill Express, until those trains were replaced by the *Silver City Comet*.

In the years following the end of World War II, the rail travellers of NSW were spoilt by trains offering luxury and speed, the envy of passengers around the world. Air-conditioning, wall-to-wall carpeting, fluorescent lighting, reclining seats and a licensed restaurant...no car or aeroplane of the time could come close.

QUESTIONS TO DISCUSS



1. What are sleeping cars? *[These are carriages that contained berths for passengers to sleep in.]*
2. Why would this train be considered a more luxurious way to travel? *[Comfort, nice trimmings, speed, decor, dining and washing on hand.]*

5



GREAT TRAIN HALL TRAIL

STOP 5 - THE PAY BUS

Six of these travelling teller machines moved around the entire NSW rail network every fortnight to distribute keenly anticipated wages to employees. Each pay bus was fitted with a cash safe, and soon attracted attention from thieves.

In 1941, Pay Bus number five was attacked and blown up by thieves who had planted explosives on the rails near Yanderra — only a few kilometres from Thirlmere. While the thieves got away with over £2000 in cash and were never caught, they were unable to break into the safe. The Pay Bus enjoyed a comparatively sedate transition into retirement from fiscal duties during 1968.

QUESTIONS TO DISCUSS



1. How does the Pay Bus differ from ATMs today? *[It only could be accessed fortnightly; it was staffed and run by people; it was mobile.]*
2. Why would the Pay Bus seem attractive to thieves? *[Contained large amounts of money, easily accessed, few security staff, small and easily isolatable target, predictable route.]*

6



GREAT TRAIN HALL TRAIL

STOP 6 - THE HERNIA MAKER

Although infrequent, trains sometimes come off the rails. Over time, a fleet of breakdown cranes like this vintage monstrosity were stationed at every major locomotive depot across the state. These machines were to remain on standby should the worst happen — a train wreck. The railway accident cranes were designed to allow a single operator to lift impressive weights. However, it still required a huge effort for the operator so workers bestowed the nickname 'Hernia Maker' on the machine. The crane itself dates from 1884 and the jib truck (L743) harks back to 1854 and so is the oldest exhibit in the museum.



QUESTIONS TO DISCUSS

1. **Cranes help when there are rail accidents. List the ways in which we can make trains safer.** *[Reduce speeds, reduce sharp curves, reduce blind spots, track maintenance, train maintenance, signal upgrades etc.]*
2. **What safety precautions must train passengers follow?** *[Do not cross tracks, do not play near tracks, stay behind the yellow line, do not run for closing doors etc.]*

1



ROUNDHOUSE

STOP 1 - THE ROUNDHOUSE

In the Roundhouse staff and volunteers work on a variety of locomotives and carriages, carrying out heavy overhauls and restorations, as well as the more traditional 'running' maintenance that roundhouses were originally designed for.

A viewing platform allows you to see behind-the-scenes and watch the specialist maintenance processes being performed.

The Roundhouse is serviced by a 32-metre (105-foot) turntable from the old Enfield steam depot. One of only three in NSW of such impressive size, it was constructed to turn the enormous Garratt locomotives, like the mammoth 6040 located alongside Workers' Walk.

EVALUATION FORM

NSW Rail Museum Feedback Form

We would be grateful if you could kindly fill in the following form about your visit to the NSW Rail Museum. Responses will help us to evaluate and improve our service to schools. Please return to the following address:

POST: Education Manager, NSW Rail Museum, 10 Barbour Rd, Thirlmere NSW 2572
OR EMAIL: info@nswrailmuseum.com.au

1

How did you find out about the NSW Rail Museum?

.....
.....

2

How did you find your arrival and museum welcome?

(Were you provided with a museum introduction and greeting? Were you informed about cloakroom? Was payment easy? Were we easy to meet up with?) Please circle.

1 Poor	2 Average	3 Good	4 Very Good	5 Excellent
Comments:				

3

Did your visit support your teaching and learning program?

.....
.....
.....
.....

4

What follow up work are you planning to do at school?

.....
.....
.....
.....

5 Did you find the resources useful? (Were you provided with enough information and resources? Would you like to see more take home resources and web materials?) How could they be improved. Please circle.

1 Poor	2 Average	3 Good	4 Very Good	5 Excellent
Comments:				

6 Which activity sheets were the most useful?

.....
.....
.....

7 Is there anything extra you would like the *Teachers Notes* to include?

.....
.....
.....

8 Would you recommend the NSW Rail Museum as a place for school visits?

.....
.....

9 Other feedback or comments:

Comments:

Thanks for your time.

FURTHER RESOURCES

NSW RAIL MUSEUM

Our website has additional information including other pre- and post-visit materials.

www.nswrailmuseum.com.au/group-bookings

MAAS

Learn more about Locomotive No 1, the first in NSW and the Boulton and Watt steam engine at the Museum of Applied Arts and Sciences.

www.maas.museum/event/locomotive-no-1

www.maas.museum/event/the-boulton-and-watt-engine

HISTORY OF RAIL IN AUSTRALIA

Good overview of rail development across Australia from the Australian Government Department of Infrastructure and Transport.

www.infrastructure.gov.au/rail/trains/history.aspx

TRANSPORT FOR NSW

Look at other modes of public transport in NSW and practise reading timetables.

www.transportnsw.info

ANIMATED ENGINES

See how a steam locomotive engine works.

www.animatedengines.com/locomotive.html

Don't forget the visit and post-visit activity sheets are online!



NSW Rail Museum Teachers Notes developed by: powerhousemuseum.com/education in collaboration with the Office of Rail Heritage and NSW Rail Museum (formerly Trainworks).

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