

ROUNDHOUSE

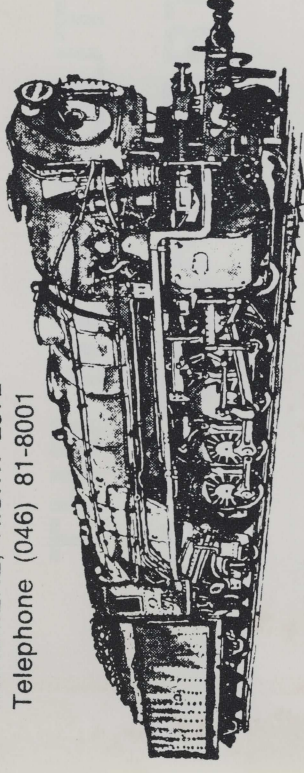
SUPPLEMENTARY ISSUE

N.S.W. RAIL TRANSPORT MUSEUM

EXHIBITS REPORTS

1980

MUSEUM SITE: BARBOUR ROAD
THIRLMERE, N.S.W. 2572
Telephone (046) 81-8001



NEW SOUTH WALES RAIL TRANSPORT MUSEUM

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In Reply, Please Quote

A SPECIAL MESSAGE TO ALL MUSEUM MEMBERS FROM YOUR PRESIDENT

Dear Fellow Member,

The series of reports accompanying this personal note are probably the most important documents you will ever see regarding the Museum, and I commend you to read them carefully and thoroughly. For these reports, prepared during the past three years by working sub-committees appointed by the Executive Committee of the Museum, are the proposed blueprint for the future of the Museum.

First, before you read the reports, I suggest you read the preface (commencing the first page after this letter), which explains in detail how it became necessary in 1976 for the Museum to take stock of where it had been, and where it had arrived, in its 14-year history; how the appointed sub-committees performed their tasks; how, when the reports are adopted by the members, the Museum will flourish and prosper in the years ahead; and what is asked of each and every Museum member.

Your elected Executive Committee, by majority vote, endorses the reports, and recommends their acceptance by you, the member. Your support for the proposals contained in the reports will help guarantee the realisation of a railway museum worthy of the great railway tradition of New South Wales.

Sincerely,

A stylized, handwritten signature in dark ink, likely belonging to the President of the museum. The signature is fluid and cursive, with a prominent initial 'P'.

(President)

THE NEW SOUTH WALES RAIL TRANSPORT MUSEUM

PREFACE

The Vision

The New South Wales Rail Transport Museum began with a vision: small band of dedicated people in the early 1960's wanting to see preserved for future generations the material and mystique of N.S.W. railways.

From humble beginnings in a shed in the old goods yard at Petersham Station, the Museum moved to what was expected would be a spacious permanent home at the former locomotive depot at Enfield. It was at Enfield, in 1972, that the retiring Commissioner for Railways, Mr N. McCusker, officially declared the Museum open. At this stage, it seemed possible that a most ambitious policy of obtaining and restoring one of every type of locomotive and item of rolling stock from the railways of N.S.W. might be practicable.

Upheaval

Following formation of the Public Transport Commission (replacing the former Department of Railways) and its plans for the reinvigoration of the State's transport system, the Museum site at Enfield was chosen in 1974 for a proposed container terminal. The Museum was generously offered, and accepted, the present site at Thirlmere. The Thirlmere site offered several advantages over Enfield:

- * Regular running of steam trains on the adjacent Picton-Mittagong Loop railway was possible, making the Museum even more attractive to both the general public and the avid steam enthusiast.
- * Community pressures, which may have inhibited development of the Museum at Enfield, were less likely at Thirlmere as the Museum promised increased local business opportunities in the semi-rural village of Thirlmere.
- * Impending heavy maintenance of the old, decaying locomotive roundhouses at Enfield housing the Museum collection was averted.
- * The uncertainty surrounding site tenure at Enfield would not be encountered at Thirlmere.

As it was, Enfield would soon have become very congested with all the proposed exhibits being accumulated. Moreover, it was becoming increasingly apparent that the amassing of locomotives and rolling stock, almost invariably in life-expired and very poor condition by the time the P.T.C. was able to release them to the Museum, might be creating a preservation and restoration task beyond the human and financial resources of the Museum.

A Time for Re-appraisal

Since 1975 site preparation and development, and operation of the Loop Line Tourist Railway have siphoned away from exhibit restoration activities virtually all of the active volunteer workforce offered by members, revealing the rapid rate of deterioration afflicting most of the vehicles transferred from Enfield to Thirlmere. (For example, the former Prison Van, a popular exhibit refurbished by the P.T.C. in 1977 is now faded, with external paintwork beginning to flake and peel). The need to completely re-appraise every facet of the Museum's plans and operations had become acute. The awareness of this need was precipitated by the sight of the lines of locomotives, carriages and wagons assembled nose-to-tail on their storage roads at Thirlmere, without any protection from summer sun or winter rain and frost; and the over-flow exhibits stored at Macdonaldtown and subjected to repeated vandalism. The problem could either be faced squarely and positively, or shelved in the hope that it might somehow go away. The Executive Committee of the Museum, mindful of its responsibility to Museum members and its obligation to future generations of Museum visitors and students of the railway, decided on a definite course of action.

This was an unparalleled opportunity for the Museum to re-define its policy and to provide a clear plan for the future.

How the Re-appraisal was Effected

The Executive Committee appointed a series of sub-committees of members selected for their previously demonstrated willingness as active Museum workers and their special knowledge of particular aspects of Museum and railway operations. Professional advice was also sought, and received, from the Museum of Applied Arts and Sciences, Sydney.

The sub-committees worked on the various allocated tasks - recommendations for the selection of a representative range of locomotives, rolling stock, signalling equipment - as well as site planning, throughout 1976, 1977 and 1978.

Such a comprehensive review of the Museum's acquisitions, activities and plans demanded, and received, exhaustive research and analysis by the subcommittees. For example, every item of rolling stock designated previously as a Museum acquisition - over 60 vehicles - was inspected by members of the rolling stock sub-committee so that the present condition and potential for preservation and restoration could be taken into account when being considered for retention.

The sub-committees adopted similar terms of reference - that, in selecting items for eventual inclusion as exhibits, the final selections should be representative of the technological development of the railway in New South Wales; should be within the anticipated resources of the Museum (space, manpower, cash); and should be capable of being preserved and restored to exhibition standard.

For example, restoration to exhibition standard of an average-condition passenger carriage might be expected to occupy the weekend time of six regular carriage-restoration-group workers for two years: therefore, the time to complete the initial restoration (not including subsequent maintenance) of the 17 carriages selected in the report might be expected to take rather more than 30 years! So, even with such a modest collection, the future task of the Museum will be of great magnitude.

The draft reports of the sub-committees were presented to, discussed with, and, with a few minor amendments, adopted by the Executive Committee of the Museum.

Results of the Re-appraisal

The published results of this major analysis - the sub-committees' reports - follow this preface.

Every member is invited - urged - to study the reports, remembering that each report represents the result of over two years' work by its authors. Members are especially asked to set aside their personal preferences for particular locomotives, carriages or wagons, but rather to consider the terms of reference stated - the same self-discipline required of the members of the sub-committees.

How the Interest of the Museum will be Safeguarded

Included in the reports is a recommendation for the establishment of permanent Curatorial Committees to oversee exhibits policy. These Curatorial Committees will be the watchdogs of the exhibits and will be responsible for recommending on all matters relating to exhibits. Through the Curatorial Committees, every Museum member will have an opportunity to express views on any matter concerning exhibits. Whatever the subject - the period style to which an exhibit should be restored, colour scheme, acquisition of additional exhibits - a member will be able to write to the Curatorial Committee outlining the reasons for the proposal, after which a meeting of the member with the Curatorial Committee can be arranged, so that the subject can be fully discussed. It is envisaged that, in matters of a minor nature, the Curatorial Committee will exercise its own discretion; in matters of a major nature, a recommendation will be made by the Curatorial Committee to the Executive Committee, which may then pass the matter on to the membership for determination.

This facility does not presently exist, and its availability in the future depends on acceptance of the sub-committees' reports.

What This Promises for the Future of the Museum

Your fellow members on the Executive Committee believe that these reports represent the best basis for a sound future for our Museum. The range of exhibits selected well reflects the development of the railways in New South Wales, and is within the resources of the Museum and its membership to present and maintain in first-class condition to the people who ultimately will guarantee the survival and success of the Museum: the paying public.

The Executive Committee pledges that every endeavour will be made to find a responsible and worthy recipient for any formerly proposed exhibit not recommended for future retention, and within the Museum's jurisdiction. It is important to remember that the majority of items listed in the reports remain the property of the P.T.C.; the Museum is only the custodian of such locomotives, rolling stock, etc. But, with its excellent long-standing relationship with the P.T.C., the Museum can confidently expect to place surplus items with kindred societies or other bodies which will provide safe keeping.

What We Now Ask of You

Members will be able to discuss any individual exhibit recommendation with the relevant sub-committee. However, we do stress that comments or objections should be submitted to the Secretary in writing, for referral to the sub-committee, by 15 February, 1980. An opportunity will then be made for the member who made the written submission to meet with the sub-committee members. Any submission recommending inclusion of any proposed exhibit not listed for retention in the reports must contain, in order to be given adequate consideration, detailed factual arguments, supported by published references where necessary.

... and Finally

In view of the fundamental policy recommendations contained in the Sub-Committees' Reports, the Executive Committee extends to members the opportunity either to endorse or to withhold approval for its recommended proposals as set out in the Sub-Committees' Reports.

Accordingly, you, as a member, have a duty carefully to assess the contents of the Reports and to express your viewpoint by voting at the Extraordinary Members' Meeting which will be called in the near future.

THE NEW SOUTH WALES RAIL TRANSPORT MUSEUM

REPORT OF THE SITE-PLANNING SUB-COMMITTEE

- 1) INTRODUCTION
- 2) SITE - EXISTING
- 3) SITE - FUTURE DEVELOPMENT
 - A. - MAIN EXHIBITION HALL
 - B. - PICNIC AREA
 - C. - TRAFFICABLE VEHICLE STORAGE AREA
 - D. - WORKS AND MAINTENANCE AREA
 - E. - PARKING AREA
 - F. GENERAL NOTES
- 4) SUMMARY
- 5) RECOMMENDATION

1. INTRODUCTION

The Site Planning sub-committee was formed in July 1977, at the request of the Objectives Committee of the New South Wales Rail Transport Museum.

Members of the committee are:- Messrs D.V. Torr (convener), J. Thompson, E. Kain, L. Loker, D. Ball, R. Taaffe, I. Martin, P. Robinson, S. Carroll, R. Noble.

The stated purpose of the Site Planning sub-committee was to advise on the future development of the existing Museum site at Barbour Road, Thirlmere.

The sub-committee met on numerous occasions between July 1977 and February 1978.

The Committee acknowledges the submissions made by Museum members and others. These submissions were reviewed and the comments contained therein were taken into account when assessing the future needs of the Museum.

Regular contact and meetings with the various groups of the Museum was maintained during the course of the sub-committee's deliberations.

Terms of Reference

The sub-committee assumed the following terms of reference.

a) To advise on the future development of the pre-ent Museum site, in accordance with the requirements of various groups within the Museum.

b) To advise on the type of development that a) should follow.

c) To advise on the sequence of development of the site, in order to achieve a controlled programme of development.

The sub-committee is aware of the unique function of the Museum in its dedication to the preservation of Rail Transport History within the state of New South Wales from the inception of the Railway System in 1855, and recognises that allowance should be made for the future. It considers that the exhibits offer a balanced picture of the development of the Railway System, and as such comprise a priceless collection, embodying technological and design changes as the size and nature of the system grew.

The exhibition and display of standard gauge rail vehicles presents unique problems not normally encountered with lesser sized objects. These factors were taken into account as the planning progressed, and note was also made that many of the exhibits were in a life expired condition at the time of their acquisition.

The sub-committee is concerned at the deterioration taking place in the condition of all exhibits now being stored and displayed in the open, and in particular of the timber bodied vehicles. During the sub-committee's deliberations, and in its consultations with the other various groups and committees, complete unanimity has been reached over the need for cover for the Exhibits, Working and Storage Areas within the Museum.

The provision of cover to the various areas has dominated the planning required, and to that end a drawing titled "Proposed Site Improvements" has been prepared, and is attached to this report. The drawing includes a plan of the whole of the site, and the elevations of future proposed buildings facing Barbour Road, Thirlmere.

The sub-committee considers that the proposed improvements should be implemented by careful planning, and proposes that this sub-committee should not be disbanded, but be retained, to meet and advise the Committee on the implementation of the proposals as the need arises.

2. SITE

Size and Aspect

The site is situated between Barbour Road and the Picton-Mittagong Loop Line, and is approximately 1,800 feet long and 200 ft. wide, with a total area of 8.3 acres. The site runs approximately North to South, with the Northern end being immediately opposite Thirlmere Railway Station. The land falls gently from South to North and from West to East. Approximately 90% of the total site area is fenced externally with a 6'0" high galvanised chain wire security fence, and a 3'6" high galvanised roll top fence is positioned between the Exhibition/Picnic areas and the Works area.

Present Use of Site

The site at the present time includes the following areas:-

- a) Parking Area - outside of security fence.
- b) Works Area - comprising Works, Maintenance, Trafficable Vehicle, and Storage areas - within security fence.
- c) Exhibition Area - within security fence.
- d) Picnic Area - within security fence.

Existing Improvements

- a) **Parking Area** - Galvanised iron storage shed approximately 75'0" x 25'0", commonly known as the "Co-op shed".
- b) **Works Area**
 - i) Engine shed size 90'0" x 45'0" - containing a single road with inspection pit, a Machine Room, Messroom, and work areas.
 - ii) Store - size 60'0" x 20'0"
 - iii) Change Room - size 18'0" x 12'0"
 - iv) Coal Loading Ramp, Coal Storage Bin, Firewood Shed.
- c) **Exhibition Area** - nil
- d) **Picnic Area**
 - i) Sales Hall - size 60'0" x 20'0" - weatherboard and fibro building.
 - ii) Display Hall- size 60'0" x 20'0" - weatherbord and fibro building.
 - iii) Ladies' and Gentlemen's Toilets, connected to a septic system.
 - iv) Showers - for the use of working members.
 - v) Engine Cab Picnic Shelters - 2 off.
 - vi) Barbecue Areas - 2 off.

Railway Facilities

The existing rail facilities comprise:-

- i) Arrival and departure road with single line access to Thirlmere Railway Yard.
- ii) Six storage sidings extending the full length of the Exhibition Area.
- iii) One Engine Shed siding extending through the Engine Shed and terminating approximately 60'0" North of the Engine Shed.

3. FUTURE DEVELOPMENT OF THE SITE

A. MAIN EXHIBITION HALL

The proposed building is approximately 740 ft long and covers five storage sidings for their entire length, and No. 6 storage siding for approximately 80% of its length. The remaining 20% of No. 6 siding is set aside as a shunting neck for rail access into the Engine Shed area. It is envisaged that the Main Exhibition Hall will house all exhibits, whether static or trafficable.

Included in the design is a first floor area housing the following:

- a) Exhibition Hall - for small and miscellaneous items, with an adjacent store.
- b) "O" or "HO" Model Railway Area.
- c) Archives area and store.
- d) Theatre and Conference Room.
- e) Administration Area.
- f) Access stairs.
- g) Viewing platforms each side of the above mentioned areas, at rightangles to the length of the building.

An extension at the front of the Main Exhibition Hall includes room for a larger shop and sales area, a covered entry area to the Exhibition Hall, a signal display area with upper and lower galleries for the display and operation of signal and signal box equipment, a toilet block, and a shower and additional storage area.

As indicated earlier in this report, the site has a very gentle fall from South to North, and the building has been stepped in height to follow the fall of the site, in order to present as low a profile as possible to Barbour Road. It is envisaged that as the permanent buildings or areas become available for use, e.g. Shop and Sales area, the existing facilities will be demolished.

Design of Exhibition Hall

The building has been designed as a steel framed gable roofed building, with a roof pitch of between 7° and 10°. A full gable type roof has been chosen in order to eliminate central box gutters, and all the attendant problems, e.g. blockings of gutters and downpipes with leaves and twigs, and possible water overflows into the building.

As mentioned previously, a viewing platform is included on each side of the first floor area, and the roof adjacent to the first floor area is somewhat higher than the remainder of the roof in order that visitors standing on the first floor viewing platform may observe the exhibits from a different angle. It is considered that the design of railway locomotives and rolling stock is such that overhead observation is desirable, in order that the visitor can obtain a total appreciation of the type or design of exhibit.

The maximum loading gauge for New South Wales railway rolling stock is 14'0" from the top of the rail to the top of the vehicle. The design has allowed for a 1'0" clearance above the loading gauge at the position of the steel roof frames, at the lowest point of each section of roof. The gradual fall of the site ensures that the clearance at any other point will be greater.

The areas at the front of the Exhibition hall, namely Shop and Sales, Entry, Signal Display, Toilets, Showers and Storage Areas have been designed as skillion roof structures in order to maintain a low profile structure to Barbour Road. The Signal Display Area is higher than the remaining skillion roof structures, because of the type of display required, viz: upper and lower galleries.

Roof

The design allows for a galvanised steel roof cladding. It is considered that "Trimdek Hi-Ten" in a "Zincalume" finish, as manufactured by Lysaght Brownbuilt Industries would offer attractive and economic roof covering. Rainwater from the roof would be collected in adequately designed eaves gutters, and be discharged through downpipes into stormwater drains. The eaves gutters and downpipes should be of the same colour as the wall sheeting.

Natural lighting would be provided by having one sheet of fibreglass roofing material, in a profile to match the steel roof sheeting, in the centre of every roof section.

Ventilation would be provided by roof vents on the ridge line.

Walls

The design allows for all walls to be sheeted with "Trimdek Hi-Ten" Colorbond finish steel cladding, as manufactured by Lysaght Brownbuilt Industries. This material is strong, and offers a very pleasant and practical finish. The wall cladding would terminate approximately 1'0" from the ground line, against a small brick or concrete foundation wall. Windows to the Main Exhibition Hall would be of the adjustable glass louvre type, to allow for controlled ventilation. Windows to all other areas would be of Aluminium construction to minimise maintenance costs.

At each rail siding entrance to the Hall it is intended to provide 15'0" high x 12'0" wide roller shutters, and also to provide two single entry doors to the same elevation.

Floor

It is considered that the floor level of the Main Exhibition Hall, which at the present time is approximately 10" below the top of the rail level, should ultimately be level with the top of the rails. Because of the large area involved, it is considered that hot mix bitumen would provide a satisfactory and economic floor finish. Improved visitor appreciation would be gained by offering an improved viewing height from which to view the exhibits.

The floor areas to the Shop and Sales, Entry, Signal Display, Toilets, Showers and Storage Areas would be of concrete, suitably finished.

First Floor Area

The first floor area should have a suitable structural concrete floor and all partition walls would be of timber frame construction, sheeted with panelling as required. The viewing platform would be enclosed with a wall or handrailing up to a height of 3'6" above the floor.

B. PICNIC AREA

The Picnic Area is situated between the Exhibition Area and the Barbour Road boundary. The sub-committee is very conscious of the effect that an attractive Picnic Area can have on visitors to the Museum and has noted the gradual improvement that has taken place in the amenities offered since the establishment of the Museum at Thirlmere.

At the present time two Engine Cab Shelters and two Barbeque Areas are provided. The plan provides for two Signal Boxes and a Relay Hut to be located at the Northern end of the Picnic Area, together with two level crossing gates. It is considered that these exhibits will harmonize with, and enhance that particular area. Examples of the different types of water columns that were in regular use could be erected adjacent to No. 6 road between the end of the Main Exhibition Hall and the existing low fence.

As mentioned elsewhere in this report, the existing Display Hall, Sales Hall, Toilets and Showers will be removed when permanent facilities become available, in or attached to the main Exhibition Hall. The areas will then be returned to grassed lawn areas, and planted with selected shrubs.

The sub-committee considers that larger covered shelter sheds should be provided for the protection of visitors during inclement weather. To that end it is considered that one of the Engine Cab Shelters at the Southern End of the area should be removed and placed in the Northern End of the Picnic Area, and that larger type Shelter Sheds should be erected at the position of the former Engine Cab Shelter, and at the position of the Display Hall, when it is removed. It is submitted that Shelter Sheds designed to complement the Main Exhibition Hall would provide a very useful amenity.

Included on the plan is an area set aside for a proposed live steam model railway, at the extreme Southern End of the Picnic Area.

It is envisaged that there will be two external standard gauge exhibits placed in the Picnic Area. It is considered that these exhibits will prove attractive and allowance has been made for them to be enclosed with a low fence, and to be protected by a suitably designed roof cover, to complement the Main Hall.

At the time of writing this report, investigations were being made into the availability of a triangular parcel of land adjacent to the Southern Boundary of the site, between Barbour Road and the Picton - Mittagong loop line, with a view to its use as an extension of the Picnic Area. The area in question is heavily wooded, and would make an attractive extension to the existing Picnic Area. It is submitted that if the area does become available, it should be fenced with security fencing to match the existing fencing, and set aside as additional Picnic Area, and that all the existing trees should be retained.

C. TRAFFICABLE VEHICLE STORAGE AREA

As mentioned previously, deterioration of timber bodied rail vehicles and locomotives is taking place because of their exposure to the elements. The locomotives and carriages used to provide the tourist railway service are stored in this area and the sub-committee considers that cover for these vehicles should be provided.

Simple cover for this area has been designed, using steel frame gable roofed construction, similar to that proposed for the Main Exhibition Hall. It is considered that the roof and wall sheeting to this area should be similar and equal to that to the Main Exhibition Hall, but that the walls be sheeted to within 4'0" of the top of the rails. No roller shutters are envisaged to the end walls of this area, it being considered that open ended storage sheds would be adequate.

D. WORKS AND MAINTENANCE AREA

This area is situated towards the Northern End of the site, adjacent to the Parking Area. It is in this area that the repair and servicing of steam and diesel electric locomotives is carried out, and it is also the area where parts are stored in order to carry out the repair and servicing work.

All the improvements to this area have been carried out by the Museum's volunteer work force, with the exception of the erection of the Engine Shed and the Locomotive Inspection pit, which was carried out with a grant from the Regional Employment Development Scheme in 1975.

The Improvements provided by the Museum include the following:-

- i) Provision and compaction of all earth fill in the Engine Shed Area.
 - ii) Concrete paving to the Western Side of the Engine Shed.
 - iii) Provision of a Meal Room, Machine Room and Store within the Engine Shed, together with a general work area.
 - iv) Provision of water reticulation to the Engine Shed, including washing up areas, hose cocks for boiler washouts, pit hoses for ash removal from the locomotives, a fire hydrant, a water column and standpipe for the watering of steam locomotives, and the reticulation of water to the Southern Works and Northern Picnic Areas.
 - v) Provision of a wood shed to house locomotive fire lighting wood, and also firewood to be used in the barbeques.
 - vi) Provision of a coal loading ramp and coal bin, for the coaling of steam locomotives.
 - vii) Provision of a Store for parts, 60'0" x 20'0". This store was originally a 50'0" long store at the former Enfield Locomotive Depot (the previous Museum site) and was dismantled and moved to Thirlmere, lengthened, and re-erected. New roof gutters, downpipes and roof sheeting were fixed in the re-erection, and the store was completely repainted externally.
 - viii) The erection and completion of a Change Room.
 - ix) Provision of a galvanised roll top fence between the Works Area and the Picnic and Exhibition Areas.
 - x) Provision of all drainage within the area, including the provision of a silt pit to the drain from the Locomotive Inspection pit.
 - xi) The extension of a 24" concrete stormwater drain a distance of approximately 90'0", to the Barbour Road boundary.
 - xii) The earthworks laying and ballasting of the complete Engine Shed servicing track from the points at No. 6. siding.
- It has been ascertained that the present Engine Shed and Store area is inadequate to carry out the work required. After consultation with the Works and Maintenance groups of the Museum, the following plan has been evolved and is considered to

meet the various requirements of those two departments.

The plan allows for:-

- a) The provision of two additional workshop roads on the Western Side of the Engine Shed (No. 7) Road, to be known as Nos. 9 and 10 roads. No. 9 road would be a straight road, extending to a turntable, located at the line of the existing security fence between the Works and Parking Area. Roads 7 and 10 would curve on to the turntable, and all new track would be level with the existing No. 7 road. Included in No. 9 road would be a 80'0" long Locomotive Inspection Pit, with a drop pit in the centre. (A drop pit is used to remove the driving wheels of locomotives from below). A 15 ton hand operated block and tackle would be provided above the drop pit, with the ability to travel over No. 7, 9 and 10 roads and into the proposed Workshop Area. Roads 9 and 10 would be used for locomotive and trafficable vehicle repairs.
- b) The provision of a workshop area approximately 20'0" wide x 100'0" long on the Western side of No. 10 road. The Western wall of the proposed workshop would be in line with the Western wall of the existing Store.
- c) The provision of additional storage facilities for parts and equipment. The area at the Northern end of the proposed Workshop is envisaged as storage for locomotive boiler tubes, the area between the existing store and the proposed workshop to be used as a store for carriage parts, and to include a toilet and shower area for the convenience of Museum workers, and the area at the Southern end of the existing Store to be used as a general storage area.

The proposed extensions North and South of the existing Store would be built to the same design as the Store, in order to ensure a uniformity of construction.

- d) The provision of a storage siding on the Eastern side of No. 7 road, to be known as No. 8 road. This road would connect directly to the Arrival and Departure Road, and an additional set of points would be required. It is proposed to take advantage of the fall of the land at this point, and form a platform to co-incide with the external wall of the existing Engine Shed. By adopting this design the rail level of No. 8 road would be approximately 4'0" below the platform edge, thus giving easy access into a railway carriage as is obtained at a normal railway station.

As indicated on the drawing, this road extends 145'0" to the North of the Engine Shed, and this area would be set aside exclusively for the restoration of locomotives and rolling stock.

- e) The Provision of cover to the above mentioned areas. As indicated previously, the additional storage areas each end of the existing store are to be to the same design as the existing building, and the roof cover to No. 8 road adjacent to the Engine Shed would be covered by a skillion roof to match the existing construction.

The area shown by dotted lines on the plan to cover road Nos. 7, 8, 9, 10, and the Workshop and Storage area would be of steel frame construction, similar to that envisaged for the Main Exhibition Hall.

Roof covering would be of corrugated iron or "Trimdek Hi-Ten" in a "Zincalume" finish as manufactured by Lysaght Brownbult Industries, and rainwater would be collected in adequately designed roof gutters, and be discharged through downpipes into stormwater drains.

Natural lighting would be provided by fibreglass roof panels, one to the centre of every section of roof.

Wall sheeting would be of "Custom Orb" Bronze Olive Colorbond finish steel cladding, as manufactured by Lysaght Brownbult Industries, to match the wall sheeting to the existing Engine Shed. The wall sheeting would terminate approximately 1'0" above the ground level, against a small brick or concrete retaining wall.

Windows would be of adjustable louvre construction to provide controlled ventilation. At the Southern end of No. 8 road, and the Northern ends of Nos. 7, 9 and 10 roads 15'0" high x 12'0" wide roller shutters would be provided. A similar sized roller shutter would be provided to the opening between the Store and the Engine Shed, adjacent to the Southern end of No. 10 road.

- f) The provision of a turntable at the position of the existing Northern security fence.
A turntable is considered an essential piece of equipment when operating steam locomotives. Three over-run roads would be provided opposite road Nos. 7, 9 and 10.

The installation of a turntable would require the security fence to be shifted as shown on the drawing.

- g) The provision of a "Pony Pit" on No. 1 Road. (A "Pony Pit" is a shallow type inspection pit, used in the adjusting and servicing of the brake equipment on railway vehicles.)

- h) The provision of a "Run Round Road" between Nos. 2 and 3 roads.

At the present time, because of the lack of a run round road, two locomotives are required to be used to move one vehicle either in or out of the Engine Shed and on to a Storage Siding.

The provision of this facility would then enable all shunting to be carried out by one locomotive. Two additional sets of points would be required.

- i) The provision of improved locomotive watering facilities.

The existing water column is supplied direct from a water main, consequently water delivery is slow. This column will also have to be re-located to make way for the additional set of points into No. 8 road.

It is proposed that a 5000 gallon overhead water tank on a steel frame be erected between the Arrival road and the security fence, to provide water direct from the tank to locomotives on the Arrival road, and through a water column to locomotives on the Loop Line.

E. PARKING AREA

It is considered that the Parking Area is of adequate size, and is in a reasonable condition.

It is considered that a fence should be erected at the rear of the Station Master's Cottage to allow him permanent vehicle entry, and that selected trees should be planted to provide shade.

No other improvements are envisaged.

F. GENERAL NOTES

- a) Overnight Sleeping Accommodation

The sub-committee considers that at the present time, and in the foreseeable future, the existing sleeping cars will provide satisfactory, if not superior accommodation to that which could be provided in a normal type building. Similarly, the existing Dining Car will offer excellent facilities when it has been commissioned. It is submitted that as

these facilities are available, Museum funds could be used to greater advantage by proceeding with the proposed improvements.

b) Site Drainage

As the proposed development of the site takes place it will be necessary for adequate drainage systems to be provided for stormwater, including surface water and roof water. As a 24" stormwater drain exists on the site, and as there is a gentle fall in the site, no problems are envisaged in the installation of such a system.

4. SUMMARY

The Site Planning Sub-Committee believes that the proposed site improvements, as described in this report, and as shown on the attached drawing, represent a practical plan for the Museum's future development at Thirlmere. The design allows for the requirements of the various departments of the Museum, but of paramount importance provides for suitable cover under which the priceless exhibits which are representative of our rail transport history can be displayed. The use of modern materials and techniques make it possible to erect economical buildings that are functional and attractive.

The proposals are such that they can be implemented in stages as finances permit. It is submitted that the development, in the first instance, should proceed as follows:-

1. Erection of roof cover only to the Main Exhibition Hall from the Northern end of the Hall to a point immediately South of the First Floor area, such area to include the Shop and Sales, Entry and Signal Display areas.
2. Erection of roof cover only to the Trafficable Vehicle Storage area.
3. Extension of No. 7 Engine Shed road by 40'0" to enable greater use of the existing Engine Shed facilities.
4. Provision of Exhibit Restoration Area on No. 8 road, including roof cover.
5. Provision of run round road between 2 and 3 road.
6. Extension of Store between existing Store and proposed Workshop.
7. Completion of roof cover to remainder of Main Exhibition Hall, including wall sheeting to whole of building, and commissioning of Shop and Sales Area and Signal Display Area.
8. Installation of turntable, and completion of proposed Workshop, including roof and wall cover.

The smaller items, such as the erection of Signal Boxes and associated equipment, provision of cover to external exhibits, erection of shelter sheds, and provision of additional locomotive watering facilities, could be carried out independent of the above programme.

The sub-committee considers that the adoption of the submissions contained within this report would complement the work already carried out at the site, and that the eventual completion of the proposed improvements would provide a Museum of which the State of New South Wales could well be proud.

5. RECOMMENDATION

It is recommended that the future development of the New South Wales Rail Transport Museum's site at Barbour Road, Thirlmere, be carried out in accordance with the submissions contained within this report, and the attached drawing.

THE NEW SOUTH WALES RAIL TRANSPORT MUSEUM

REPORT LOCOMOTIVE SUB-COMMITTEE

1. FORMATION OF THE LOCOMOTIVE EXHIBITS SUB-COMMITTEE

- 1.1 Members of the Museum were advised in Newsletter 76/10 of reviews being initiated to determine future Museum policies. This resulted in the formation of the Locomotive Sub-Committee to review locomotive policy, and prepare a report on behalf of the Exhibits Committee.
- 1.2 Composition of the Committee was Mr. P.A. Robinson, Convener and Messrs. T. Ball, R. Butcher, E. Kain, I. Martin, P. Neve, K. Robinson, P. Robinson, J. Smith, D. Torr and W. Williams.
- 1.3 Membership was by personal request from interested members or by invitation extended by the Committee.

2. TERMS OF REFERENCE

- 2.1 No instructions were issued to the sub-committee apart from those advised in Newsletter 76/10 and we quote "To enquire into our future exhibits policy" - "Reasons for the retention or acquisition of each exhibit should be stated" and "There are definite and absolute limitations on the size of the site and to what can be achieved by voluntary labour".
- 2.2 Submissions directed to us from interested members generally conformed to these guidelines and offered no new criteria to expand on them.
- 2.3 Professional advice was sought to ensure that the task was correctly handled, this being obtained from the Deputy Director of the Museum of Applied Arts and Sciences, Sydney, at a specialist meeting of the New South Wales branch of the Museums Association of Australia, held on 17th February, 1977. This meeting provided valuable assistance from which the sub-committee drew up its terms of reference.

These being that the selected exhibit represented -

- 2.3.1 A significant motive power development on the railways in New South Wales.
- 2.3.2 A large class of locomotive.
- 2.3.3 The features of 2.3.1 or 2.3.2 better than an item conforming strictly to those criteria.

As the Museum caters for both the enthusiast and the general public, other considerations arise in addition to those previously nominated.

3. SUBMISSIONS

- 3.1 The sub-committee extends its thanks to those members who prepared submissions on the locomotive topic. Each submission was individually reviewed by all sub-committee members and consideration given to the views expressed when dealing with any item nominated by them.

- 3.2 It was apparent from the submissions received, that not everyone was conversant with the existence, condition and significance of every exhibit. Consequently, the sub-committee ensured it was aware of these facts and all locomotive exhibits were inspected and recorded.

4. NOTES OF EXPLANATION AND GENERAL RECOMMENDATIONS

A total of seven meetings and many hours of deliberation were devoted to the review and the following information is drawn to the readers attention:

- 4.1 It is the opinion of the sub-committee that our primary function is to provide a Museum. As such, each item retained must be able to justify its inclusion by conforming to the guidelines of selection as laid down in 2.3, be capable of restoration by a limited volunteer workforce and that the total number of exhibits be able to be contained on site at Thirlmere.

- 4.2 Covered accommodation of all items on the site was considered to be the most urgent problem facing the Museum as the need to protect exhibits etc., from the elements before, during and after restoration is obvious. Accordingly, the sub-committee recommends the provision of cover as soon as possible.

- 4.3 Arising from discussions with the Museum of Applied Arts and Sciences, it was advised that a specialised controlling body be formed in a curatorial capacity to be responsible for all matters concerning locomotives. It is submitted that the locomotive sub-committee should continue to operate as a curatorial committee, meeting at least biannually. The sub-committee recommends that no work be performed on any locomotive and that no item be acquired or disposed of without being referred to the curatorial committee for consideration and recommendation.

- 4.4 A number of items were transferred to the locomotive section from the rolling stock sub-committee as being better included under locomotives control than that of rolling stock. These are items of rolling stock required for the mainline operations of steam locomotives and as such are the responsibility of traffic steam operations and dealt with in Section 19. Additionally, steam coal grab No. 1063 included as a crane in the rolling stock lists, was transferred to the locomotive sub-committee's control.

- 4.5 The listing of recommendations for exhibits is set out in order of development as the sub-committee is of the opinion that the illustration of this development is the Museum's prime function. Various other recommendations follow the exhibits, which list locomotives, tenders and parts for purposes as defined in the titles to those listings.

5. LOCOMOTIVE DEVELOPMENT SUMMARY

During the initial years from 1855, mixed purpose locomotives were able to handle the offering traffic over relatively easy grades. It was not until the lines reached Pictou and Penrith in 1863 that locomotives designed specifically for freight working and passenger duties were sought.

The 17 (later E.17) class 0-6-0 was the forerunner of several classes of this arrangement and must be considered as the first goods locomotive class which continued through to the 93 (later A.93, Z.19) class in 1877, by which time the main lines were approaching Junee in the South, Orange in the West and Quirindi in the North.

By this time (1877), the first numerically large class of passenger locomotive had been introduced - the 79 (later C.79, C.80, Z.12) class totalling 68 units, and forerunner of many 4-4-0 classes.

From 1881 came the 2-6-0 development of the freight locomotive, by which time the mainlines had extended to Albury, Dubbo and West Tamworth.

Although there had been some experimentation with consolidation classes beforehand, the next major transition was to the 2-8-0 with the T.524 class in 1896; this design was perpetuated through several modifications until 1925 and led to the development of the powerful D.57 class 4-8-2 in 1929.

Meanwhile, on the passenger side, increasing loads and longer distances lead to the 4-4-0s being supplemented by the 0.446 (Z.23) and P.6 (C.32) classes of 4-6-0 from 1891, becoming the major express locomotives until the advent of the NN (C.35) in 1914 and the C.36 in 1925. This culminated in the 4-6-2 C.38 design of 1943.

Accordingly, to consider locomotives which should be retained within the Museum, this development was divided into eight groupings.

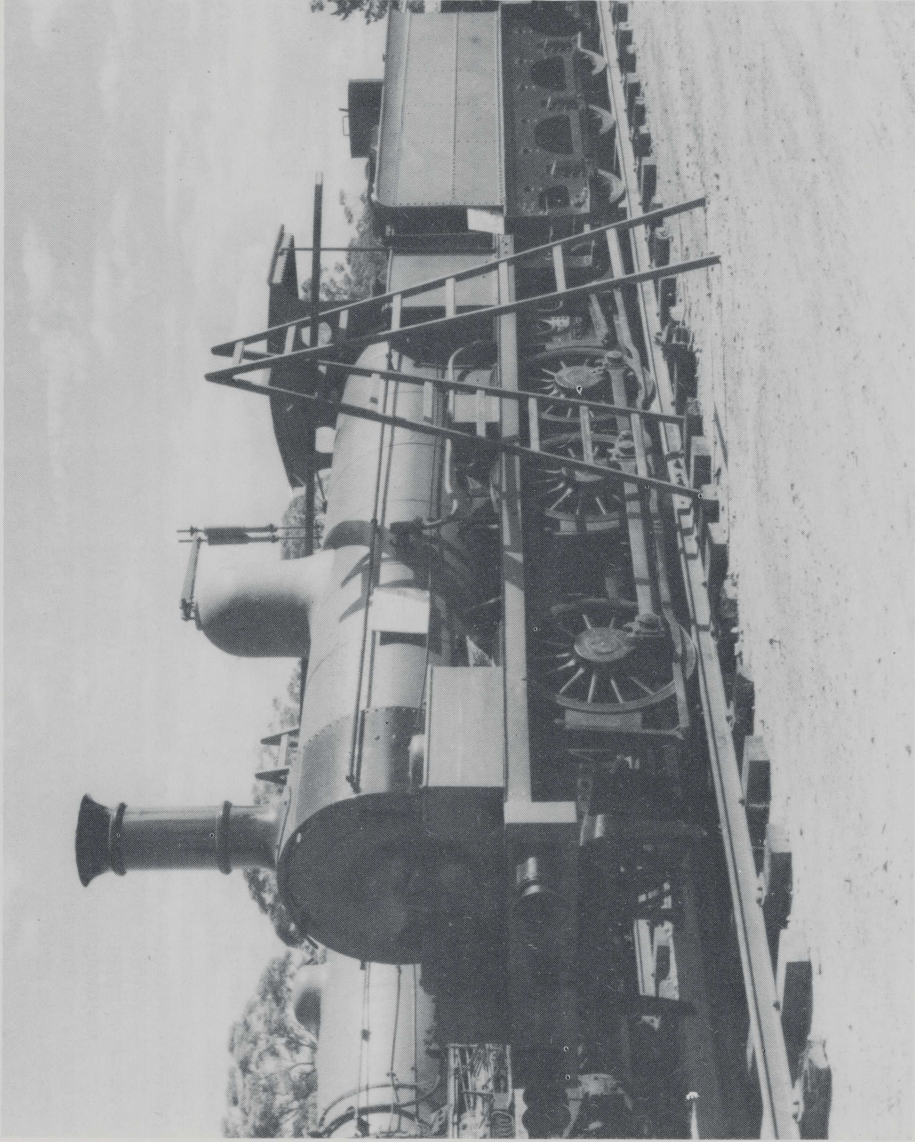
- i) Freight
- ii) Passenger
- iii) Suburban
- iv) Mixed
- v) Miscellaneous
- vi) Private
- vii) Diesel
- viii) Electric

6. COMPLETE LOCOMOTIVE EXHIBITS LISTING

Freight	Passenger	Suburban
No. 18	381 (1709)	1033
2510	32 Class	1301
5595	3642	30 Class
5711	3801	
6040		
Mixed	Miscellaneous	Private
78	1034 (Crane)	79
3001		Bronzewing
		J.A.B. No. 5
		Archie
Diesel	Electric	
4001	46 Class (Recommended	Acquisition)
42 Class (Recommended	Acquisition)	

7. FREIGHT LOCOMOTIVE DEVELOPMENT (STEAM)

FREIGHT LOCOMOTIVE 0-6-0



7.1 No. 18

The 0-6-0 wheel arrangement began with the introduction of the E17 class in 1865. The numbers of this type were increased by two further classes, the 148 of 1874 and the A93 of 1877.

On their introduction all these locomotives conformed to Stephenson's patented long-boiler principle, in which the firebox is placed entirely behind the rear axle. Two examples of this wheel arrangement were considered. Firstly No. 18, an E17 class locomotive placed in service in 1866 and later sold out of government service. Secondly 1905, an A93 class locomotive of 1877 which was subsequently rebuilt early this century and now features a Belpaire firebox, relocated boiler and a Thow cab.

To represent the technology of the 0-6-0 wheel arrangement, the pioneer goods locomotive type, it was considered that No. 18 best serves the purpose for the following reasons:

i) No. 18 still retains the original boiler configuration.

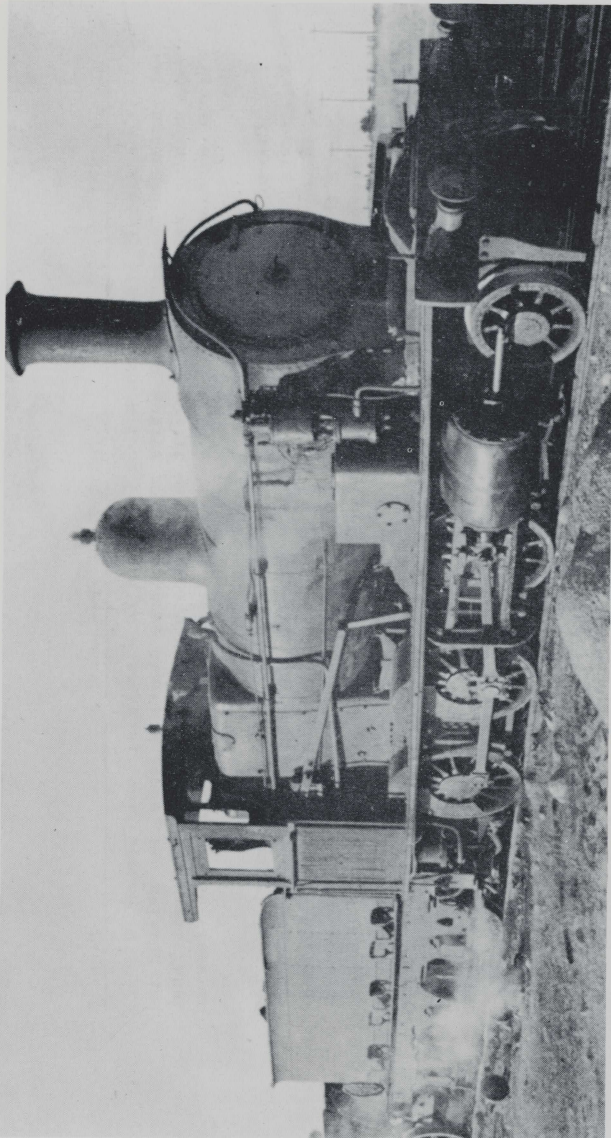
ii) Original appearance.

iii) Oldest locomotive in the collection. The locomotive dates to within eleven years of the commencement of railway operation in the state.

This basic design gave rise to a further thirty three locomotives which were initially employed in the Newcastle coal traffic. This latter group of locomotives, now known as the 20 class, were a 2-6-4 sidetank variation. A number of the 20 class were built new while others were converted from existing A93 class locomotives.

Being only a variant of the basic design 2029 is unable to justify a place in the collection, accordingly No. 18 is preferred.

FREIGHT LOCOMOTIVE 2-6-0



7.2 2510

The 2-6-0 wheel arrangement was introduced in 1881 with the entry into service of the first of seventy members of the 25 class (new class number) locomotives.

A further twenty five locomotives of this basic design arrived in 1891, these locomotives are now known as the 24 class. The 24 class offered no new development to the wheel arrangement and differed from the 25 class only in detail. These differences bore fruit in a new cab shape (the Thow cab) and an altered smokebox-chimney arrangement.

When compared with 2419, 2510 has been selected with regard to the following:

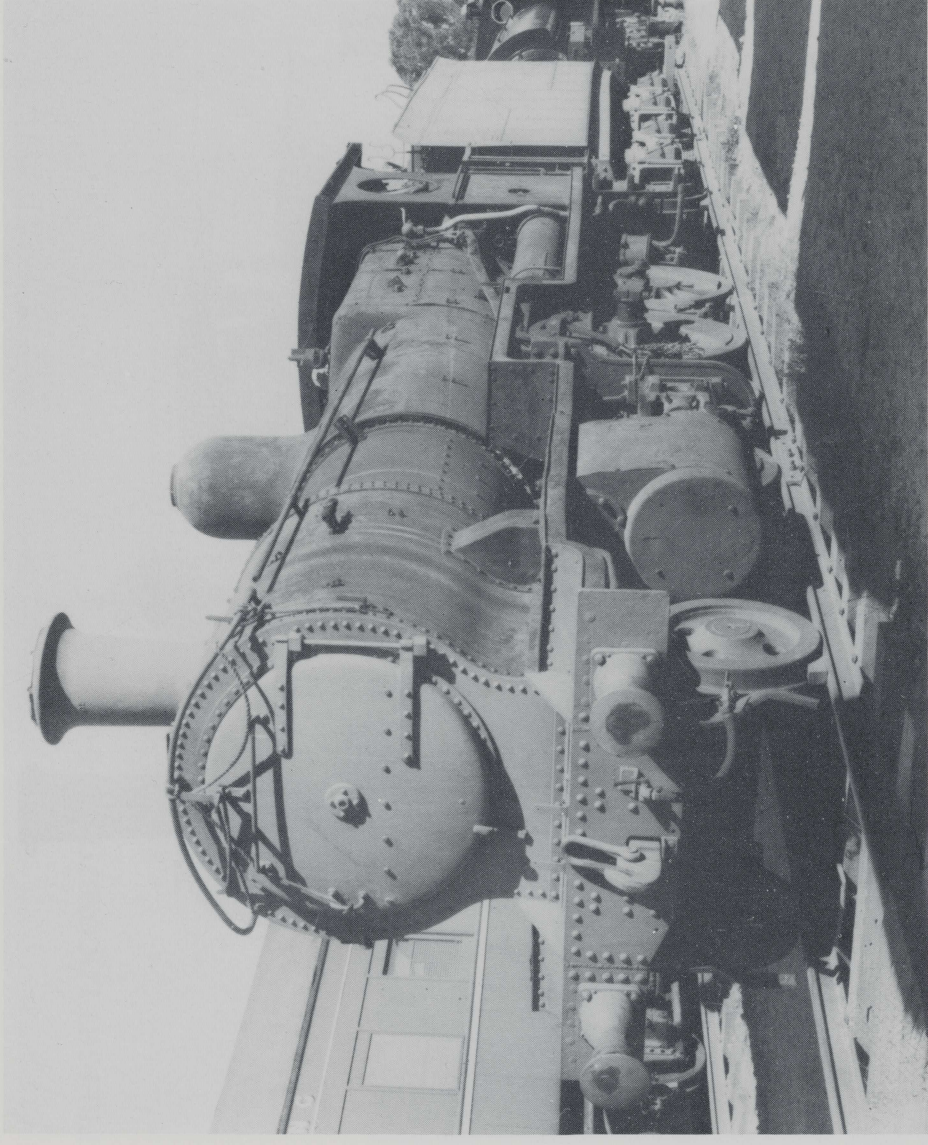
i) The 25 class pioneered the wheel arrangement.

ii) 2510 features a timber cab which was distinctive of several imported early American classes.

iii) The restoration of 2510 is at present nearing completion.

iv) The smokebox configuration of 2419 is available on locomotive No. 78 which displays this feature with complete authenticity.

FREIGHT LOCOMOTIVE 2-8-0

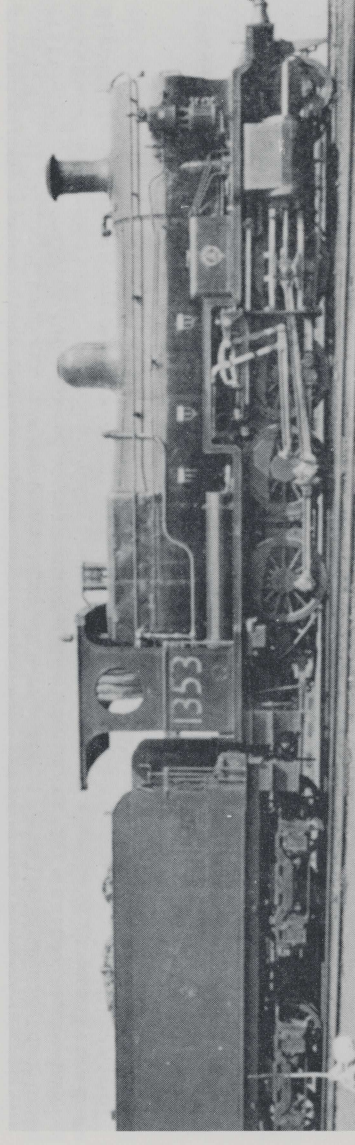


7.3 5595

The 2-8-0 wheel arrangement was introduced in 1879 when the locomotives of the J131 class were obtained from the Baldwin Locomotive Works of the U.S.A. This initial group was followed by a further five classes, closing with the K1353 class of 1918. The bulk of the type belonged to the final three classes, now known as the 50, 53 and 55 classes. As initially introduced all three of these later classes differed in various details. The most obvious of these centred on boiler shape and the type of valve drive. Subsequent rebuilding saw the emergence of a standard superheated boiler which was fitted to all three later classes.

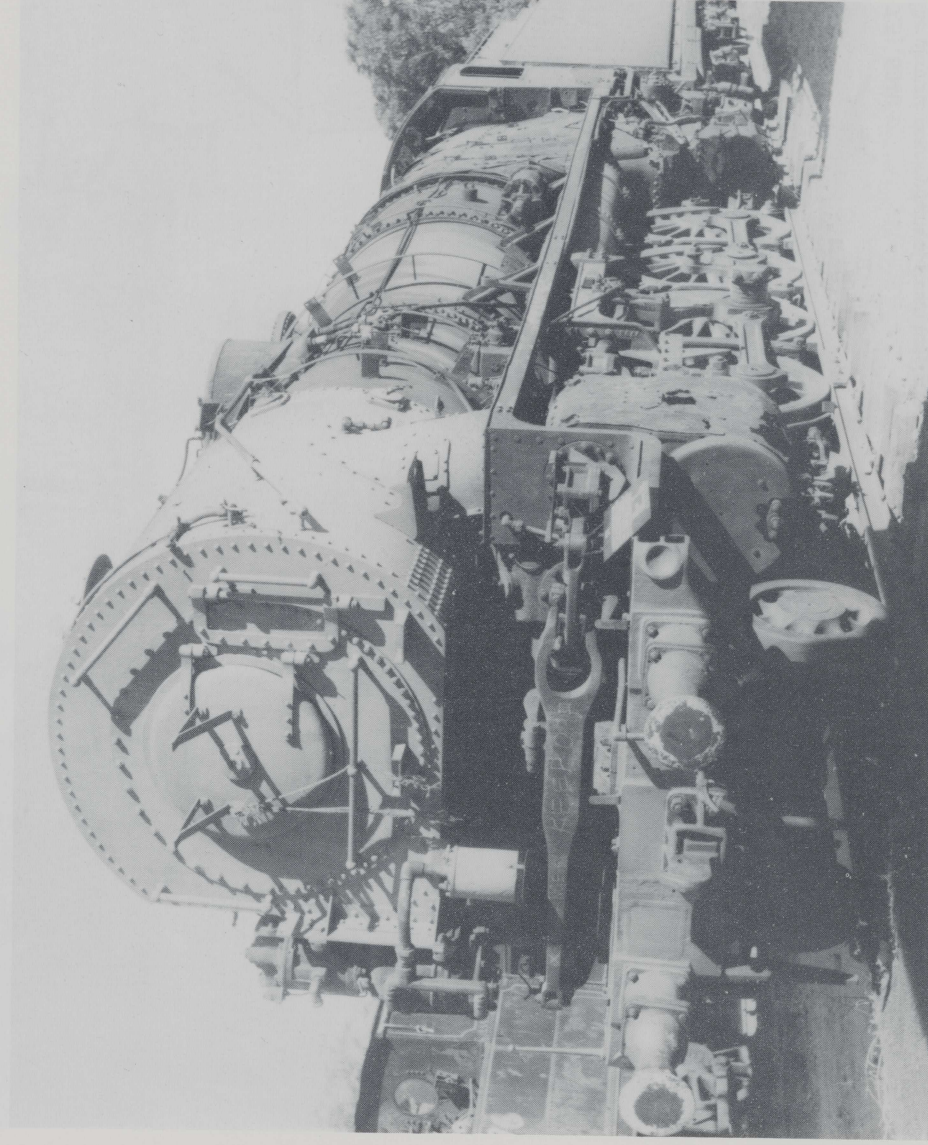
The 55 class fitted with the standard boiler and external drive for the cylinder valves, in this instance use of Southern valve gear, thus became the ultimate development of the consolidation wheel arrangement on the N.S.W. Government Railways. This locomotive also features a "Wampu" tender which was standard to the class when introduced.

For the reasons above 5595 has been included in the collection at the expense of 5096.



16

FREIGHT LOCOMOTIVE 4-8-2

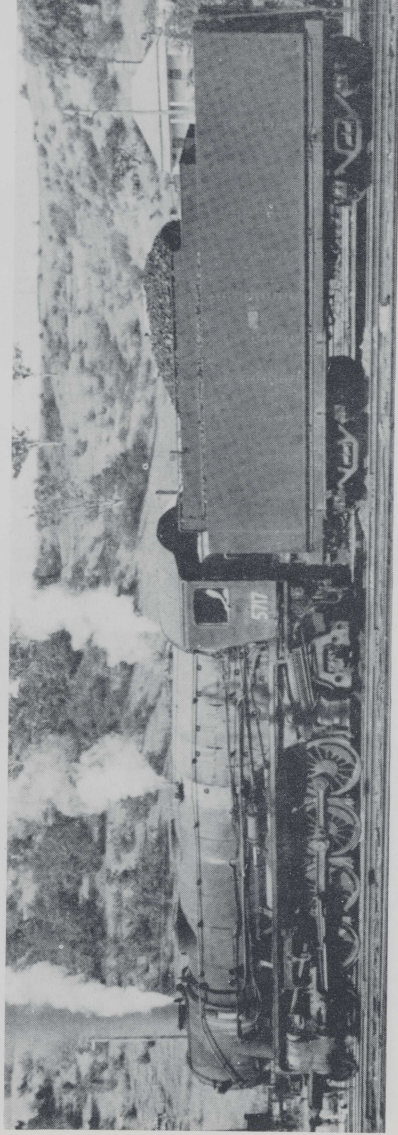


7.4 5711

These engines were the first of the "modern" steam locomotives in New South Wales and were the largest development of the rigid wheelbase.

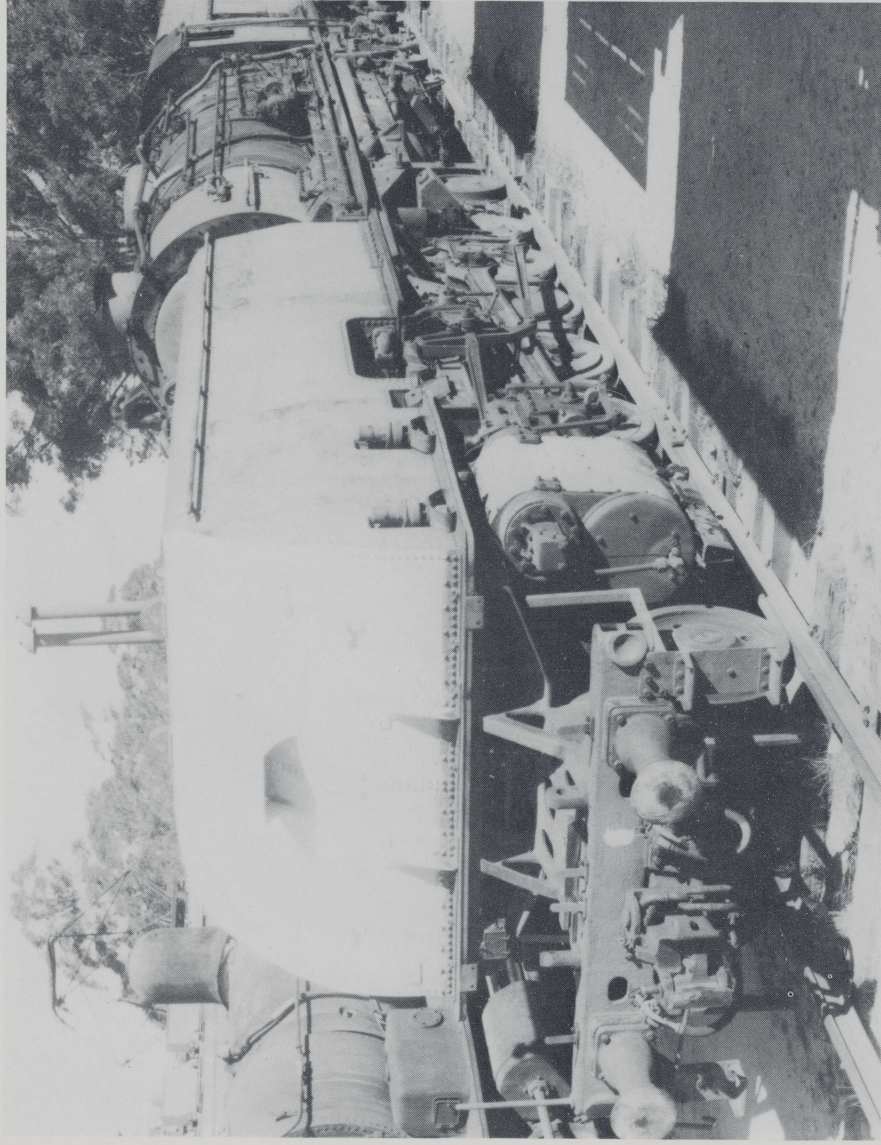
Delivered from 1929, features of this class were mechanical stokers, 67% greater tractive effort than a standard goods engine, Gresley conjugating valve gear and three cylinders. The engine unit is unrestored and in poor condition. The tender has been repainted but has deteriorated through exposure.

This class of 25 locomotives led to 13 similar engines being constructed.



17

FREIGHT LOCOMOTIVE Garratt 4-8-4 + 4-8-4

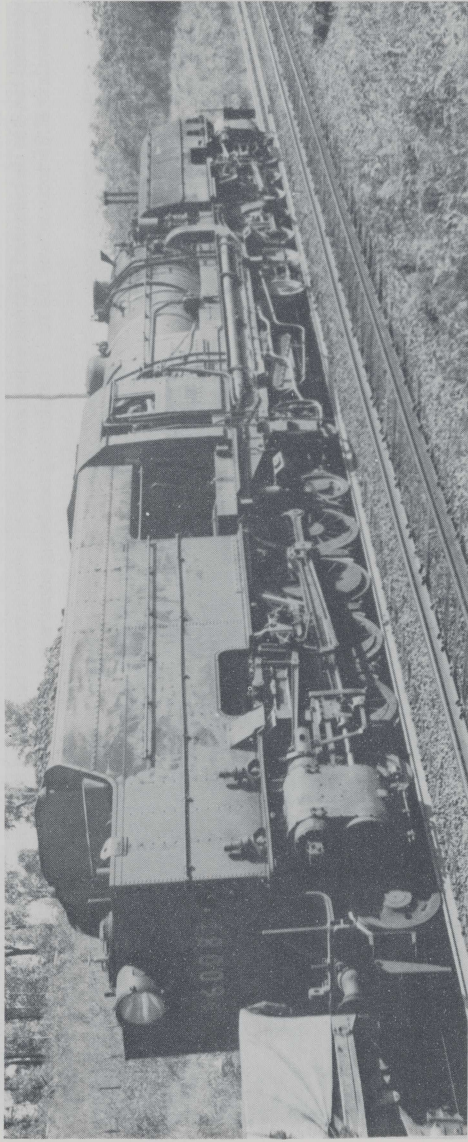


7.5 6040

The ultimate development of steam freight locomotives was this class of 42 engines. Placed in service from 1952.

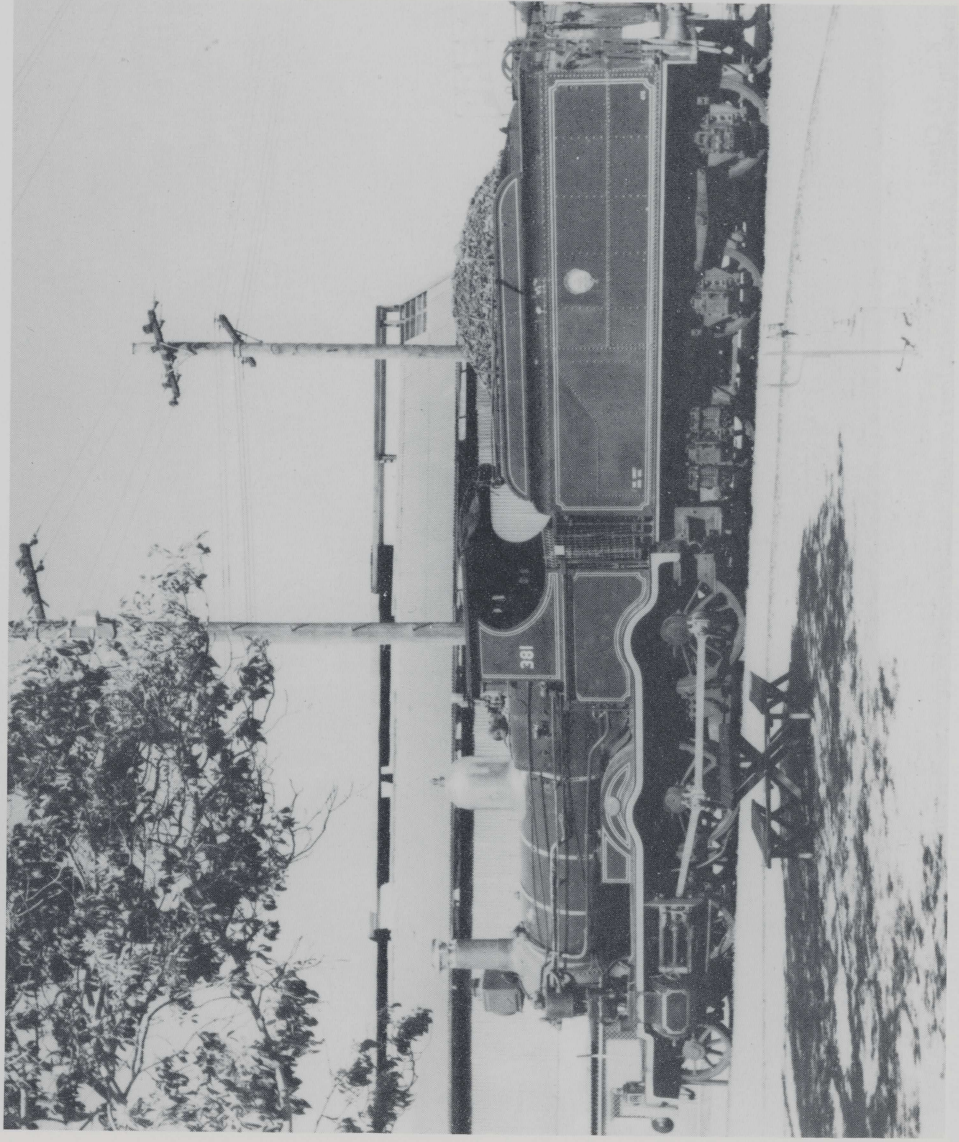
Features:

1. Articulated frame design.
 2. Mechanical stoker.
 3. Heaviest locomotive type in Australia.
 4. Last class of steam locomotive introduced on the N.S.W. Government Railways.
- This exhibit is unrestored and in very poor condition.



8. PASSENGER LOCOMOTIVE DEVELOPMENT (STEAM)

PASSENGER LOCOMOTIVE 4-4-0



8.1 381

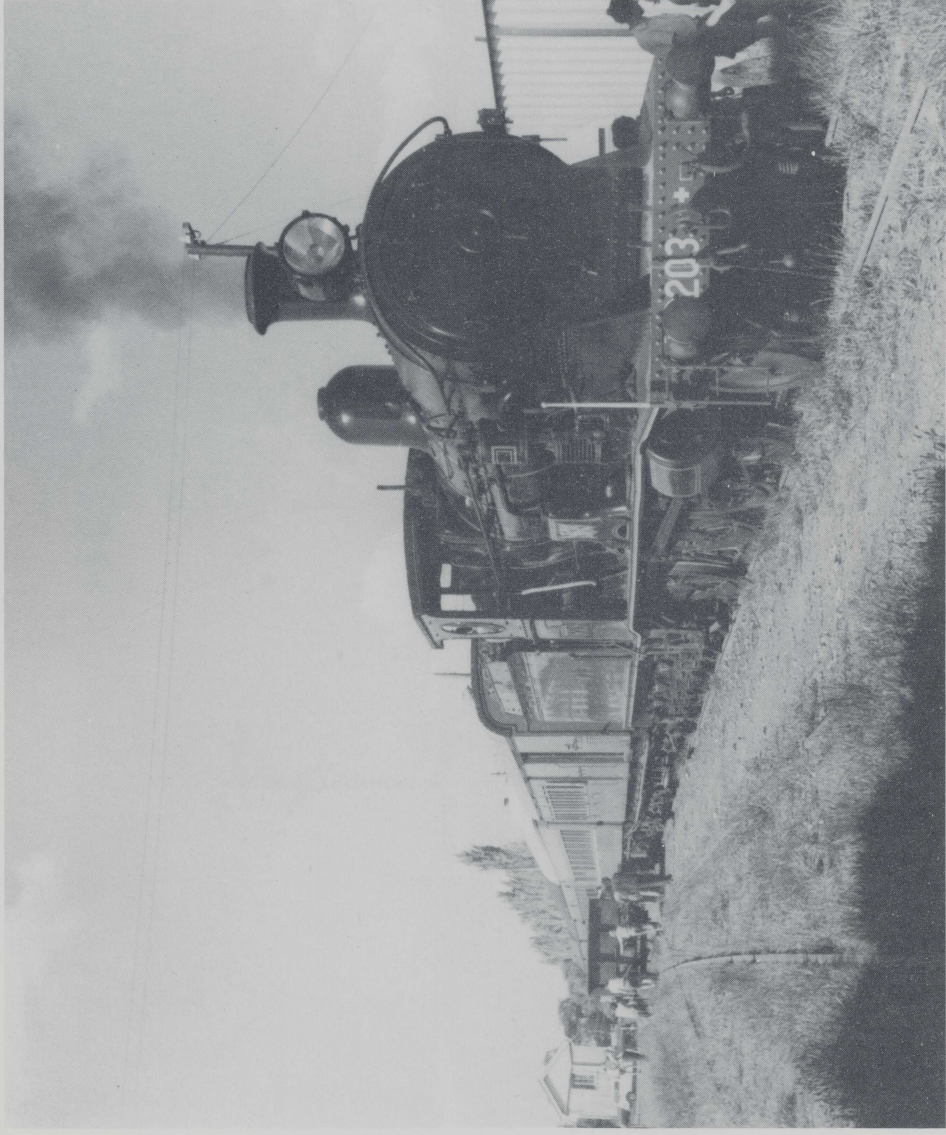
The 4-4-0 wheel arrangement was introduced with the C79 class in 1877. Further locomotives were obtained in subsequent years, the final class received being the H373 locomotives of 1887.

The type was the major country passenger locomotive of the 19th Century and finally numbered one hundred and twenty locomotives in new construction.

Two examples of this wheel arrangement were available for consideration. Firstly 1219, a member of the original C79 class of 1877. This locomotive is in post-1900 condition with a Belpaire firebox, non standard smokebox, a Thow cab and is in poor repair. Secondly 381, a member of the H373 class of 1887. The locomotive is in post-1905 condition with a Belpaire firebox, shortened smokebox and is equipped with American Stephenson valve gear. The locomotive is restored and in operating condition.

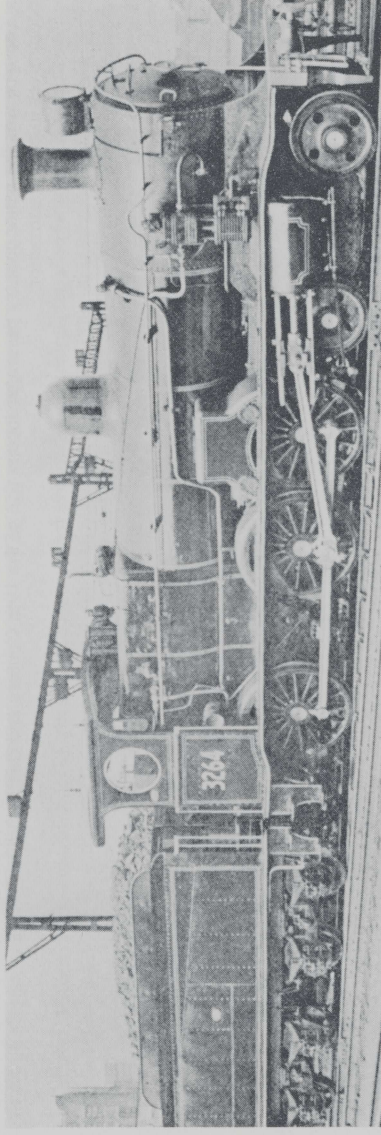
It is considered that as 381 is in restored condition and is also trafficable that this locomotive be retained in the collection. The cylinder and Bissell truck configuration of 1219 is available in sister engine 1301 which has been included in the collection.

PASSENGER LOCOMOTIVE 4-6-0

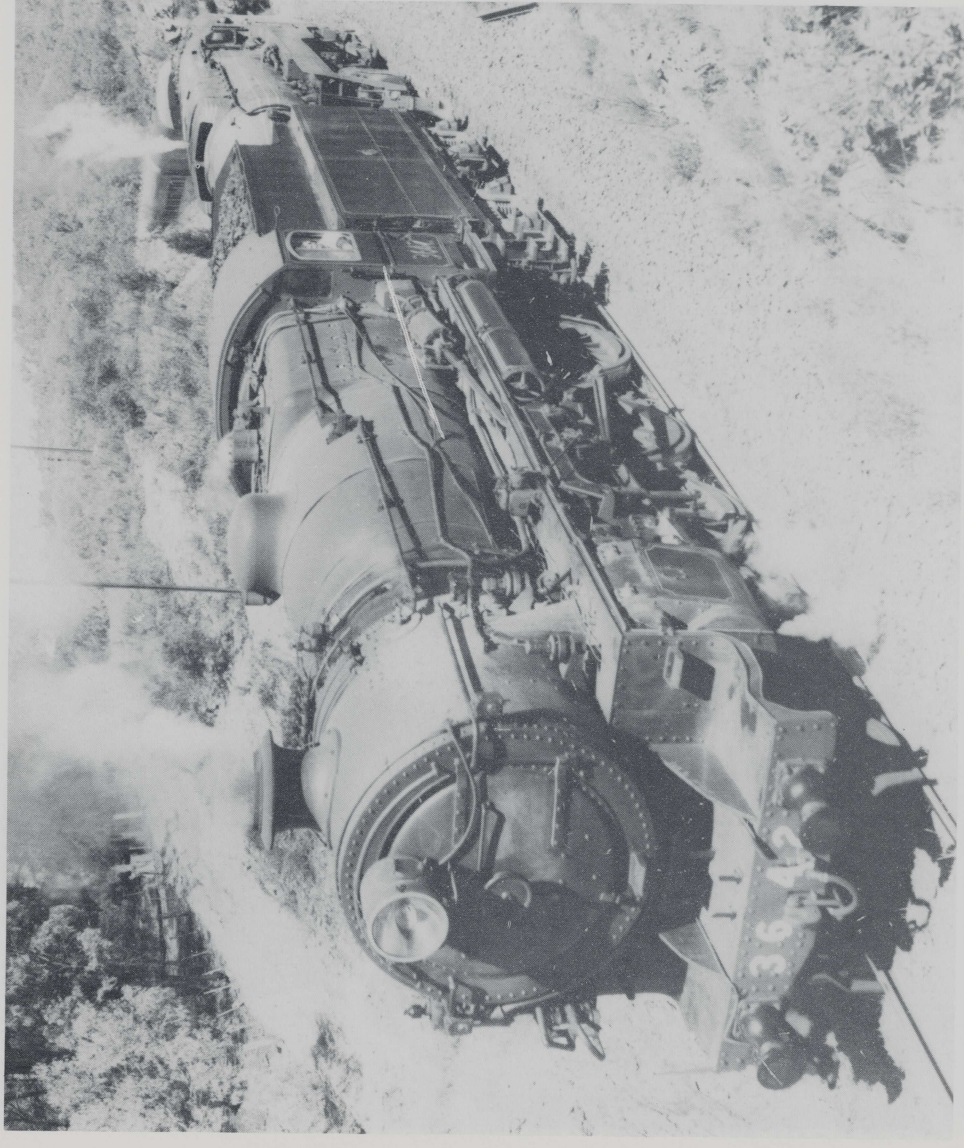


8.2 32 Class

This was a class of 191 locomotives introduced from 1892 of which the Museum possesses two, both in service. No precise recommendation is made in this case as these locomotives are required for operations. The sub-committee points out that as only one can be justified as an exhibit, a recommendation at a future date will be necessary to determine final selection.

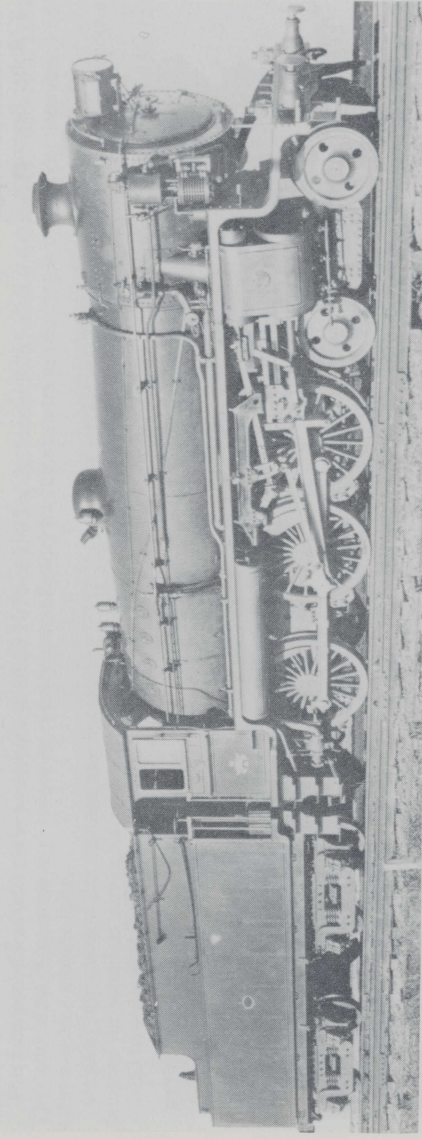


PASSENGER LOCOMOTIVE 4-6-0

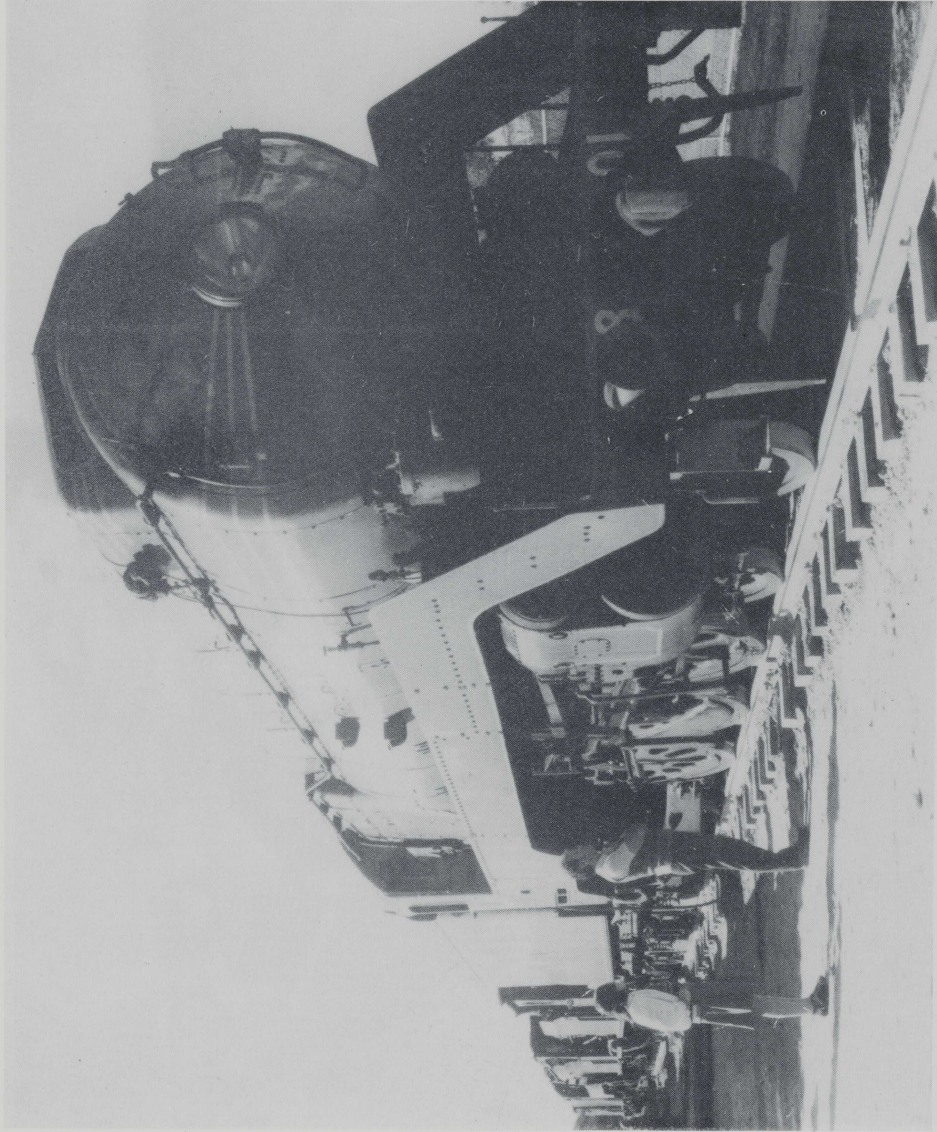


8.3 3642

The 4-6-0 design was popular with the New South Wales Government Railways and amounted to 318 locomotives of the same wheel arrangement. 36 class locomotives represent the ultimate 4-6-0 design on the New South Wales system. 3642 is recommended as an exhibit to illustrate this development. This locomotive is in better mechanical condition than 3609 and is therefore suited for a return to service using the spare 36 class boiler.



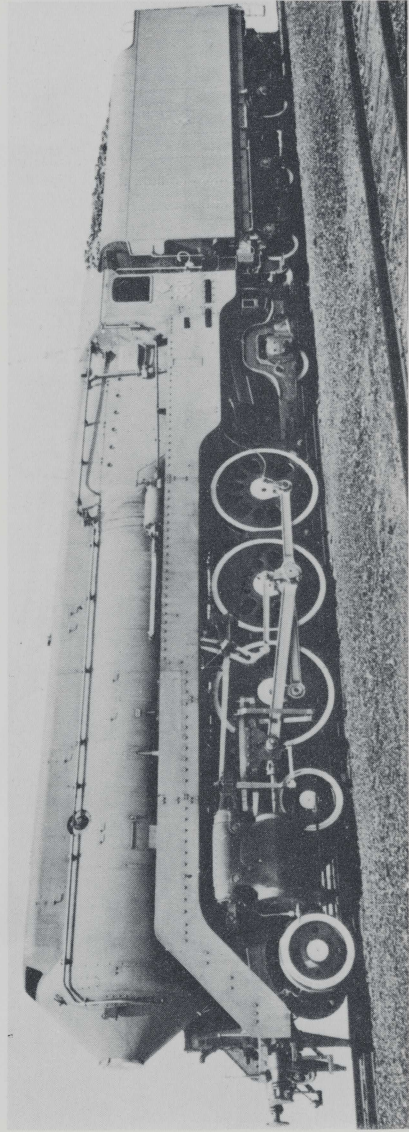
PASSENGER LOCOMOTIVE 4-6-2



8.4 3801

The Pacific design introduced in 1943, was the final development of steam passenger locomotives in New South Wales and the best example of the class is 3801. The engine has a good appearance and is in sound mechanical condition although the boiler is currently unserviceable.

- Features -
1. First in Class.
 2. Streamlined Design
 3. Roller Bearings



9. SUBURBAN LOCOMOTIVE DEVELOPMENT (STEAM)

SUBURBAN LOCOMOTIVE 2-4-0



9.1 1033

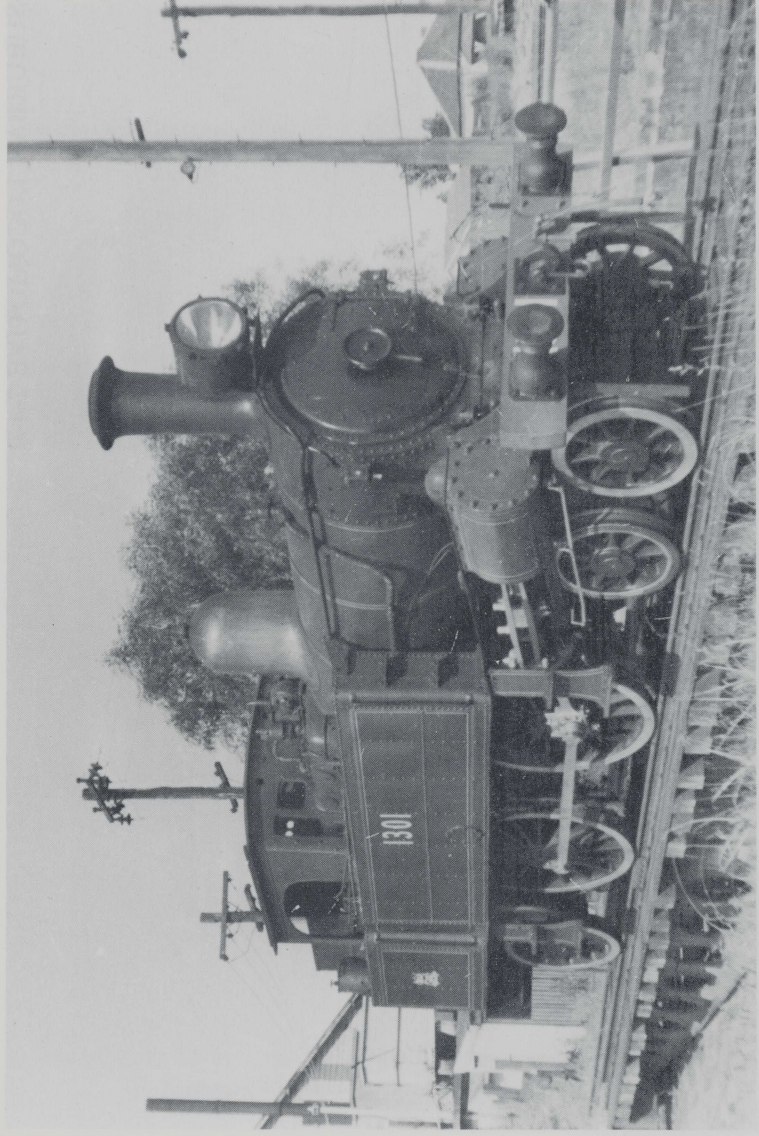
An early example of a locomotive designed for suburban passenger service, being introduced in 1885 as a member of the F351 class.

This locomotive was selected in preference to either 1076 or 1803 of the former R285 class 0-6-0 tanks introduced in 1884. This latter class of locomotive proved to be entirely unsatisfactory for suburban trains resulting in the introduction of the F351 class nineteen months later.

On their introduction the eighteen members of the F351 class formed a large proportion of the thirty eight locomotives designed for suburban service. In contrast the six R285 class engines formed only a minor proportion of that stock.

1033 has been repainted and has a reasonable display condition but is deteriorating rapidly due to exposure to the elements.

SUBURBAN LOCOMOTIVE 4-4-2



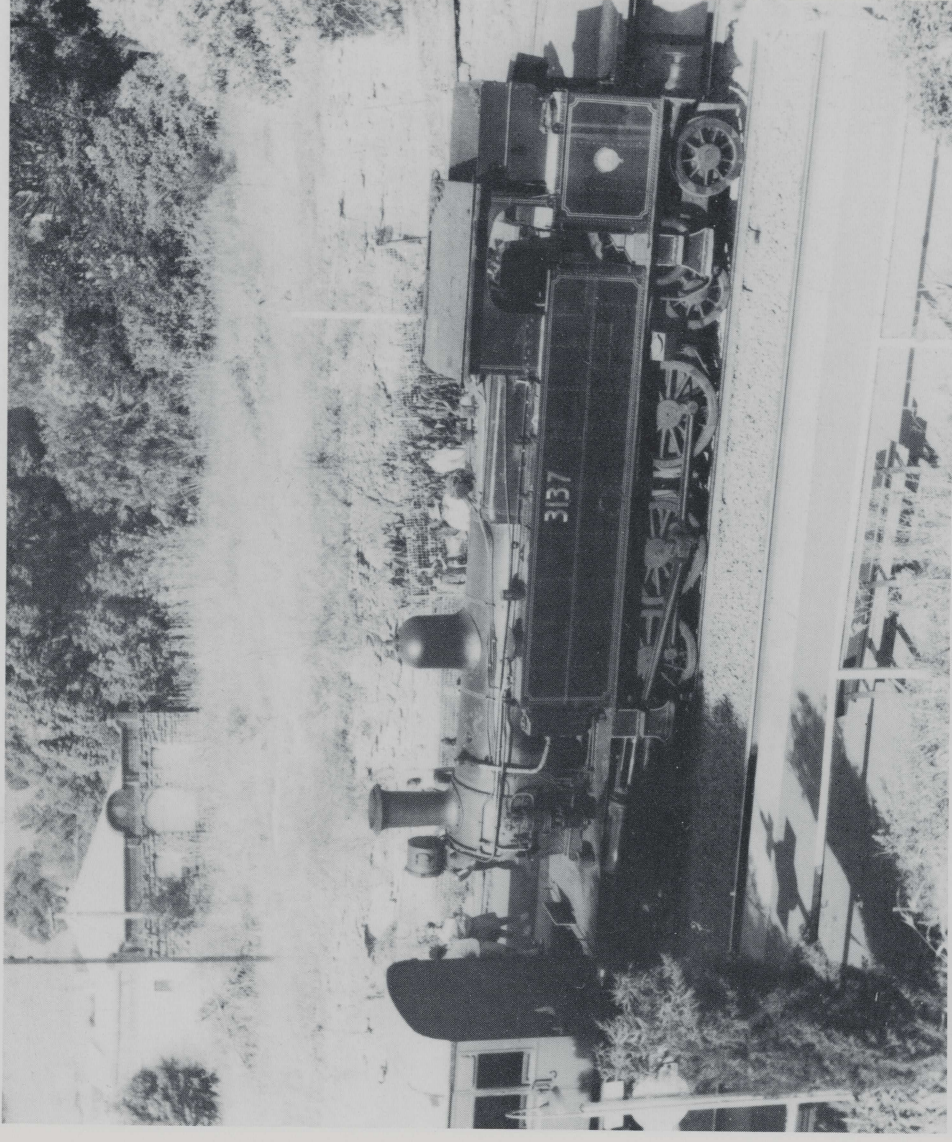
9.2 1301

Adapted from 4-4-0 tender locomotives to handle expanding suburban traffic and introduced from 1896, this locomotive has a reasonable display condition but is deteriorating rapidly owing to exposure.

Features -

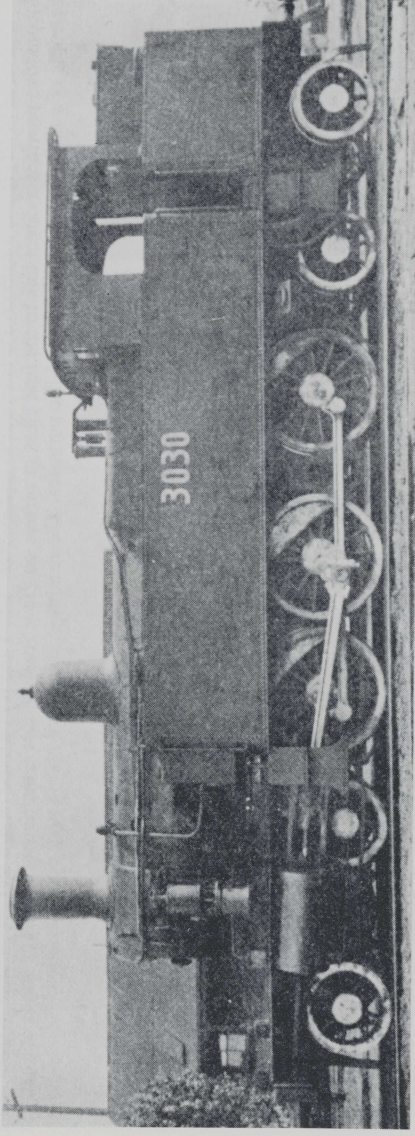
1. Former loopline locomotive.
2. Capable of return to traffic.

SUBURBAN LOCOMOTIVE 4-6-4



9.3 30 class

Introduced from 1903, this class was the final development in steam suburban locomotives amounting to 145 engines. 3137 is the better example being in loopline service, however, 3085 has been suggested as suitable for return to service and a choice will have to be made at a later date to nominate as an exhibit, the locomotive in the best condition at that time.



10. MIXED LOCOMOTIVE DEVELOPMENT (STEAM)

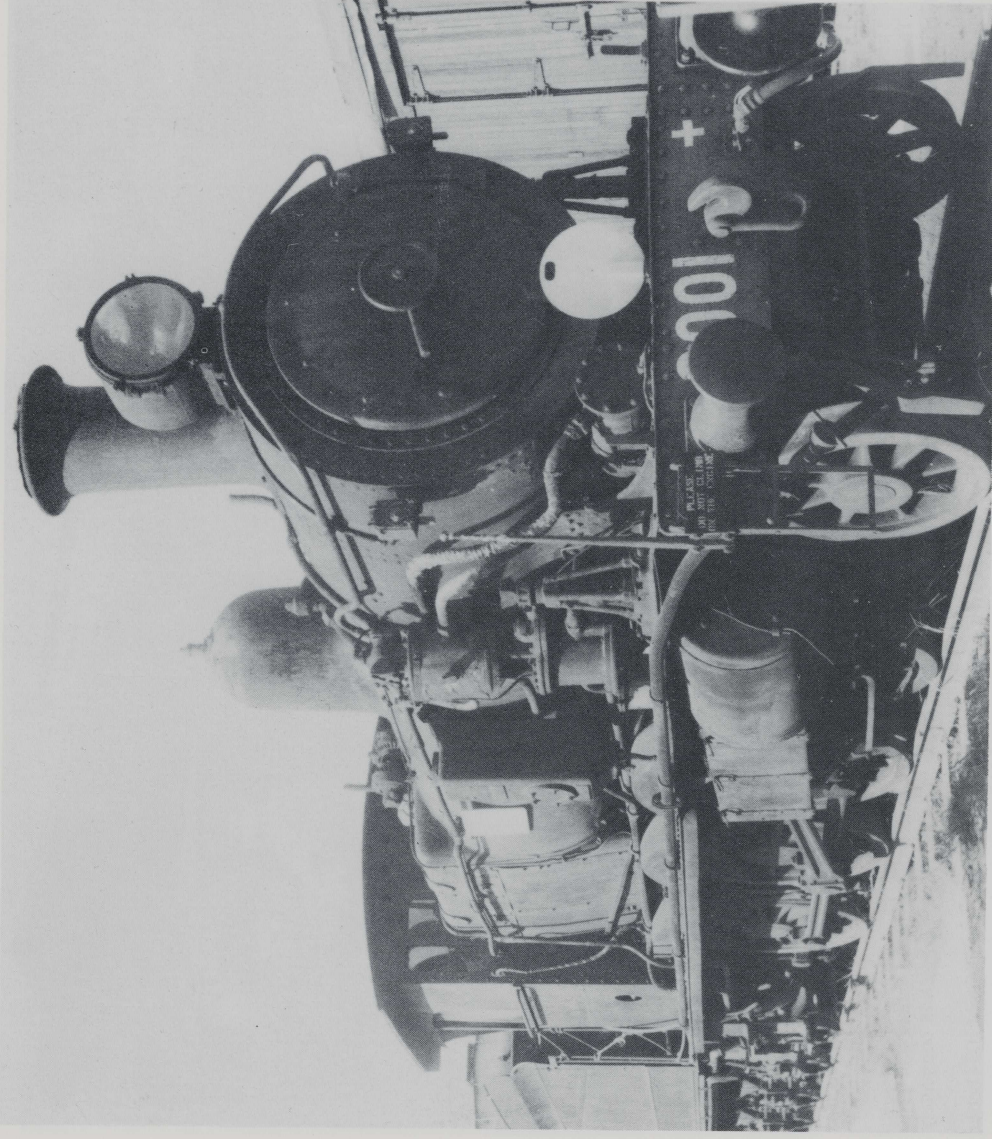
MIXED LOCOMOTIVE 0-4-2



10.1 No. 78

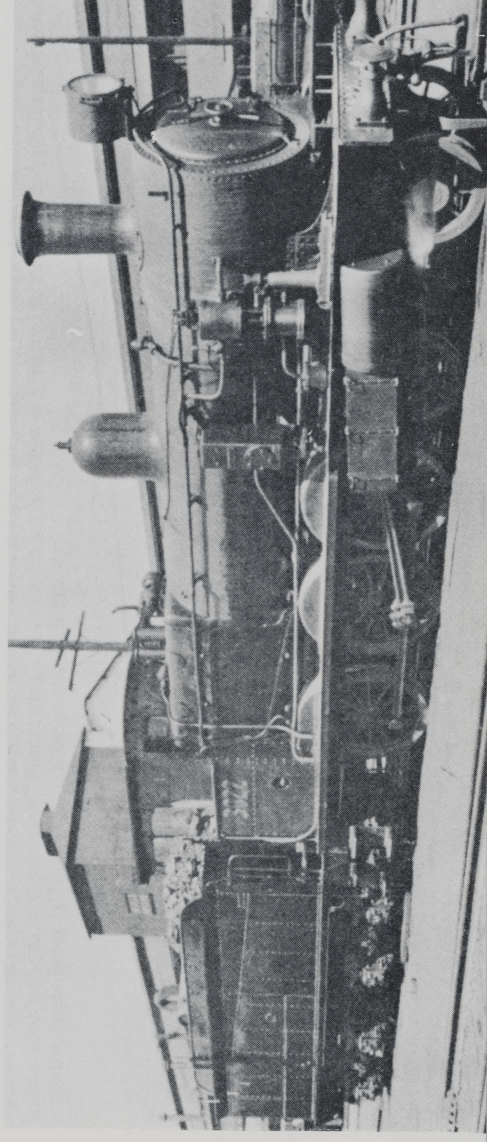
Delivered in 1877, this locomotive is one built to replace Nos. 1 to 4 and is of similar design and appearance to them. This locomotive provides a direct link to the first class in service on New South Wales Government Railways and is our earliest example of a class designed for mixed traffic purposes. The exhibit is unrestored and in very poor condition.

MIXED LOCOMOTIVE 4-6-0

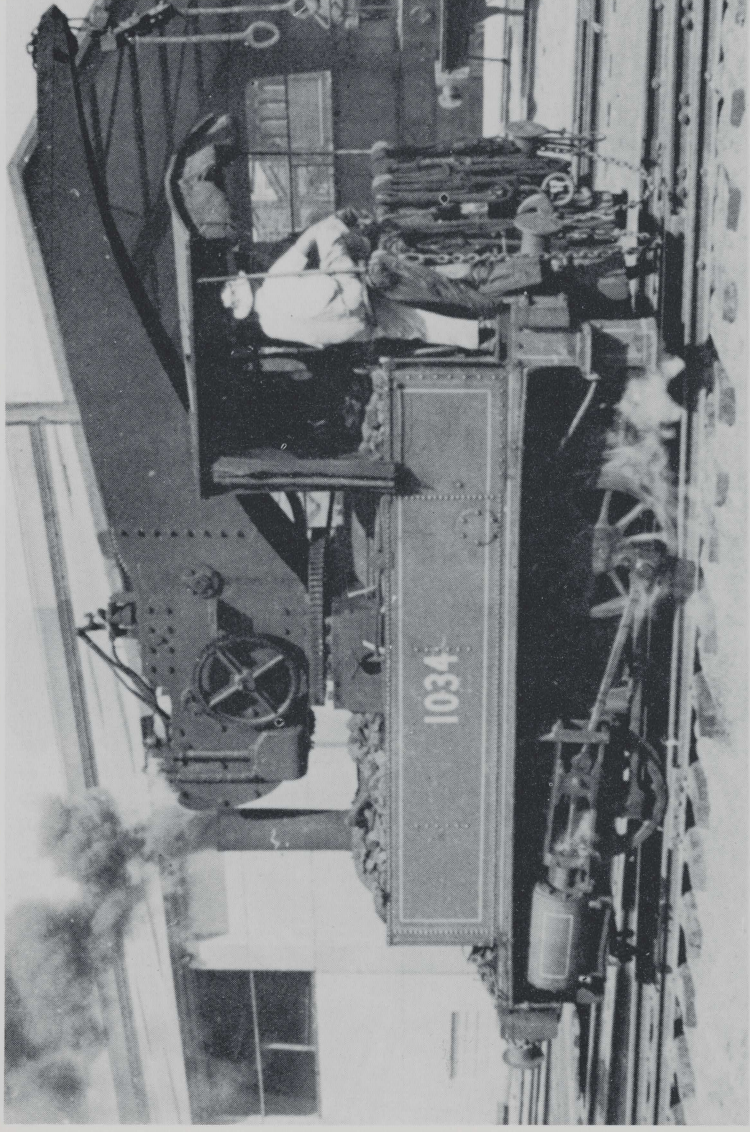


10.2 3001

These locomotives were converted from 30 class tank engines specifically for mixed traffic and were the last steam locomotives built for this specialised purpose. 30T's became standard branch line locomotives replacing a multitude of classes and remained as such from the late 20's to final branch line dieselisation. 3001 is capable of being returned to service and as such, is in reasonable condition but has a poor appearance. This locomotive is one of 29 of the class given superheated boilers and piston valve cylinders.



MISCELLANEOUS LOCOMOTIVE 0-4-0 Crane



11.1 Crane 1034

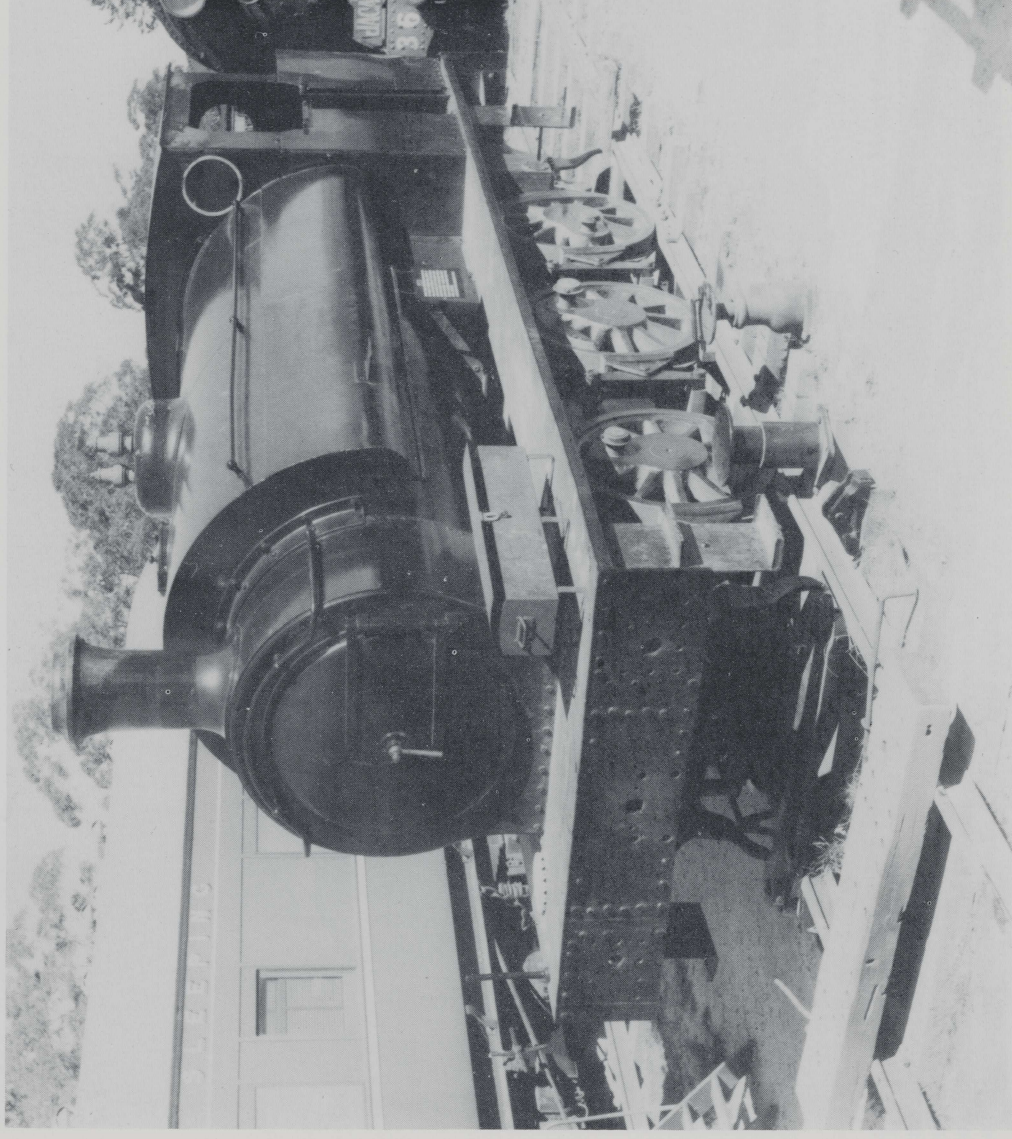
The Government System has maintained a large number of locomotives for non-revenue service in its various facilities such as depots, workshops and marshalling yards.

These included a number of specialist designs such as crane locomotives, coal grabs and the like.

The Museum at present has available 1034, a crane locomotive of 4 tons capacity built by Dubs and Company in 1886 together with 1063, a coal grab of 3 tons capacity built by Harman of Melbourne in 1918. 1063 is at present completely dismantled while 1034 was undergoing restoration before the move to Thirlmere.

In view of the quite specialist lifting task for which 1063 was used it is considered the general service capabilities of 1034 better fit it for inclusion in the collection. For this reason and 1063's dismantled state 1034 has been selected.

PRIVATE LOCOMOTIVES



12.1 No. 79 0-6-0 Saddle Tank (English Design)

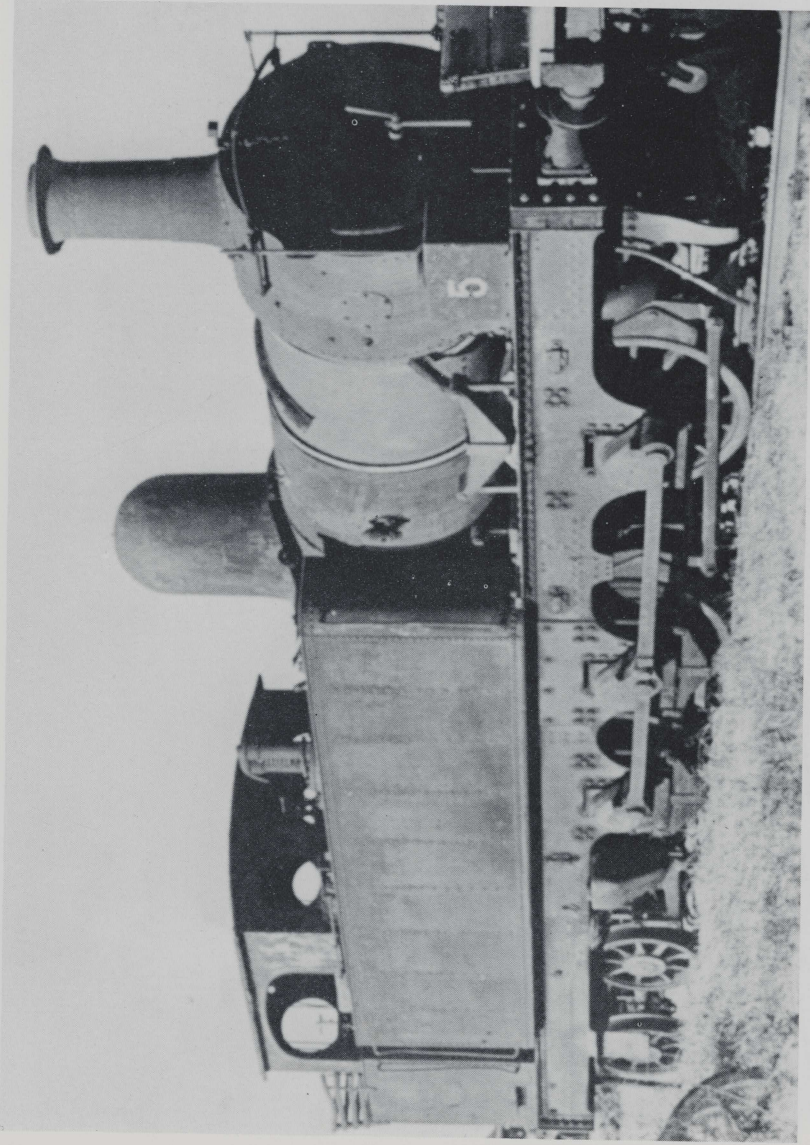
The locomotive was British built in 1938 and came from the Port Kembla commercial network of the Public Works Department, being transferred to the Railways in 1949. The sub-committee acknowledges that this exhibit does not conform to the criteria for selection as outlined, but has chosen it as the best example available of an industrial saddle tank locomotive. The restored condition of this locomotive justifies the decision and it provides an interesting comparison between this English 0-6-0 Saddle Tank and our next selection "Bronzewing". As such, this locomotive is preferred to the other industrial saddle tanks available, those being 1021, Alison, Kathleen and JAB No. 4.

PRIVATE LOCOMOTIVES

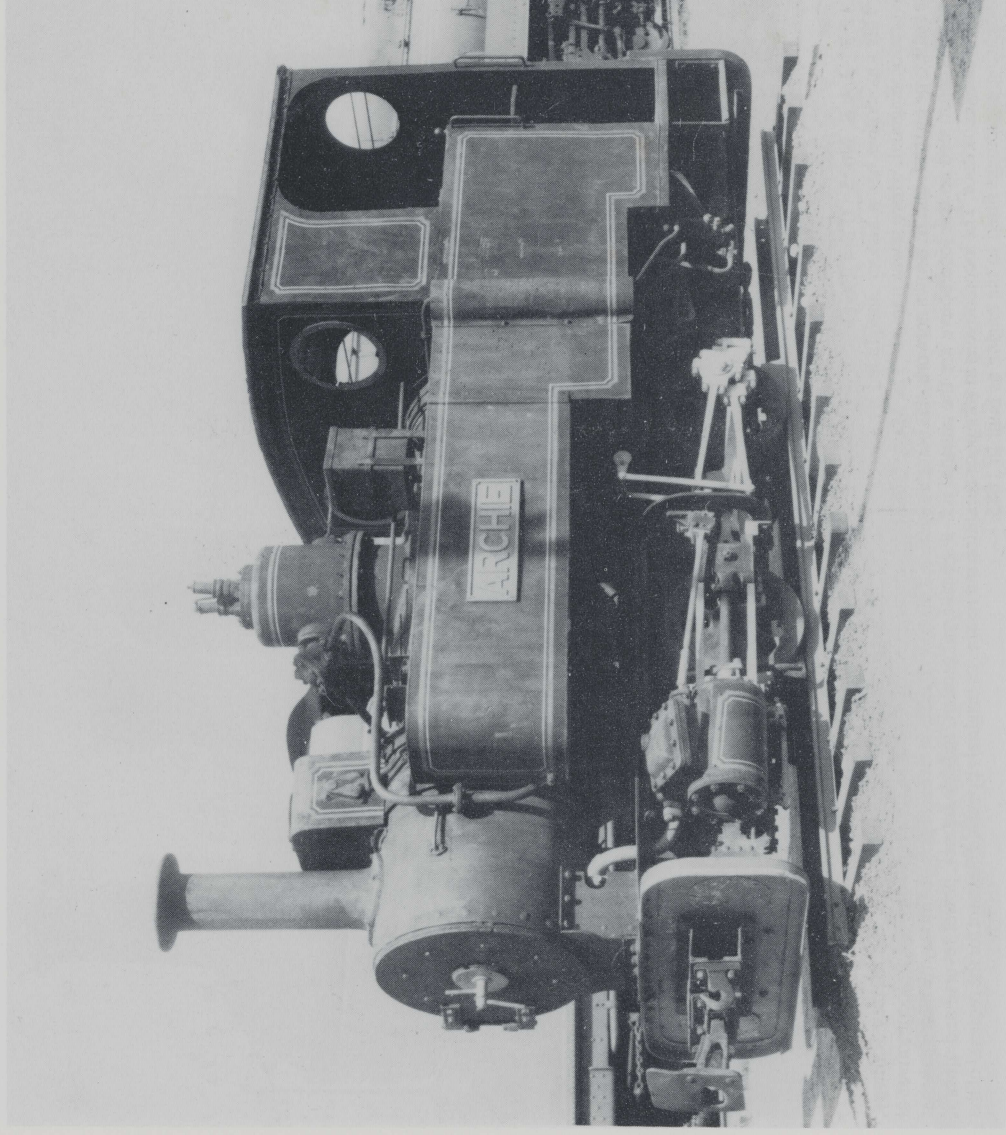


12.2 Bronzewing 0-6-0 Saddle Tank (American Design)
 Delivered in 1937, this locomotive was one of a class of eight built for A.I. and S. The first was constructed by the Porter Locomotive Company in the U.S.A., the remainder being obtained locally.
 This locomotive has been selected as it is a good example of an American industrial 0-6-0 saddle tank, providing a direct comparison with No. 79. As such Bronzewing is considered more appropriate than B.H.P. No. 16 which is an 0-4-0 sidetank locomotive.

PRIVATE LOCOMOTIVES

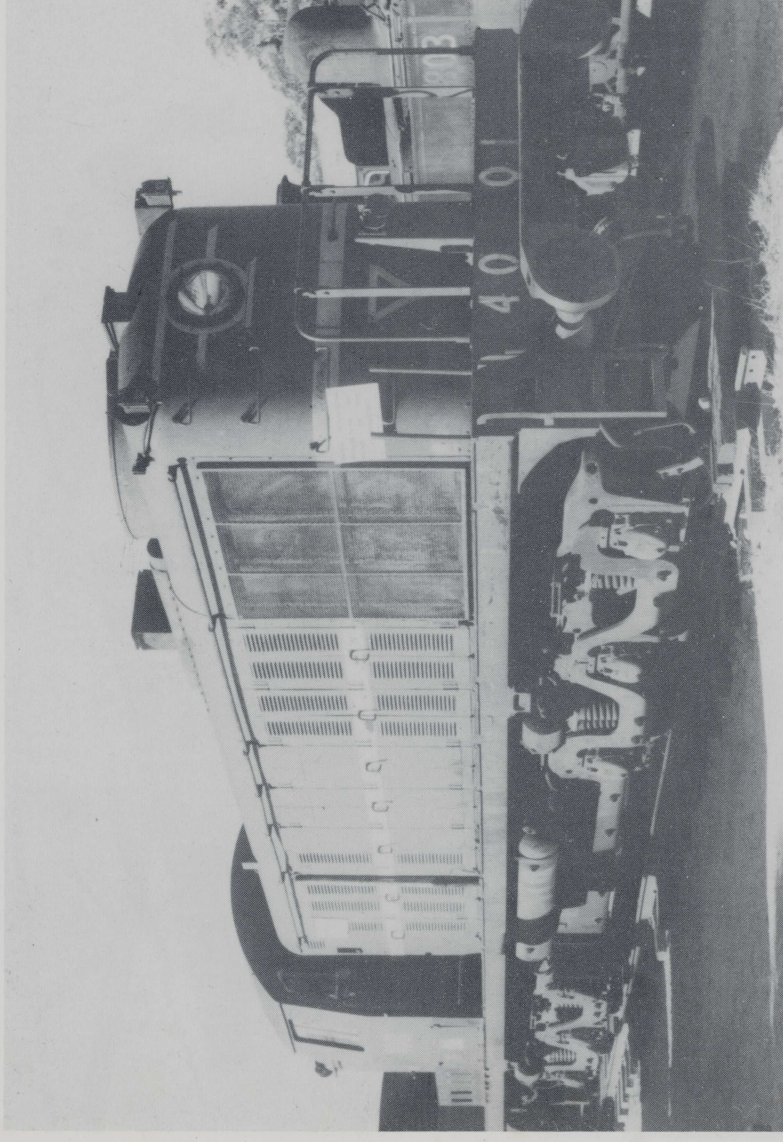


12.3 J.A.B. No. 5 0-6-4 Tank
 This locomotive has a history unequalled by any other in the Museum, being the former No. 1 of the Mersey Railway, Liverpool, England, where it was named "The Major". With its introduction to Australia, it became one of four locomotives of the same type on the J. and A. Brown network, this being a significant class of engines in terms of private railway ownership at that time. Demonstrated on this locomotive are the unusual 0-6-4 wheel arrangement, outside frames, power reverse and upward opening smokebox door. The locomotive is in very poor condition but retains its original appearance except for the removal of the condensing equipment fitted to the engine as built in 1885.



12.4 Archie 0-4-0

The representation of narrow gauge motive power is presented by this small locomotive. Unlike Queensland, the operation of small or narrow gauge locomotives within New South Wales was not widespread. Longest of those in New South Wales was the Goondah-Burrinjuck Tramway, utilising four 0-4-0 Krauss Locomotives between 1908 - 1928. Archie is one of these four. Popularity of this exhibit is undeniable and its size is to its advantage in this review of exhibits. Condition of this locomotive can only be described as fair, as it has suffered badly from exposure. These engines were German built from 1888 and imported until 1914.

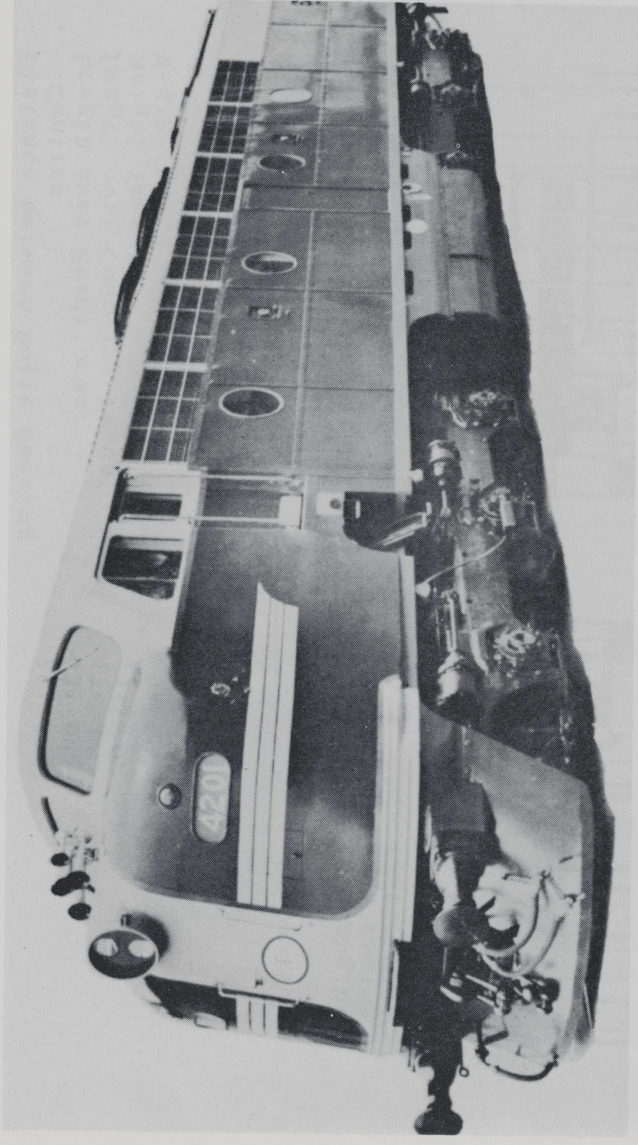


13.1 Hood Type 4001

Being the first mainline diesel electric locomotive on the system is reason enough for the selection of this exhibit. This locomotive also demonstrates the hood style car body design which has been perpetuated in several newer classes. The car body condition and appearance are reasonable.



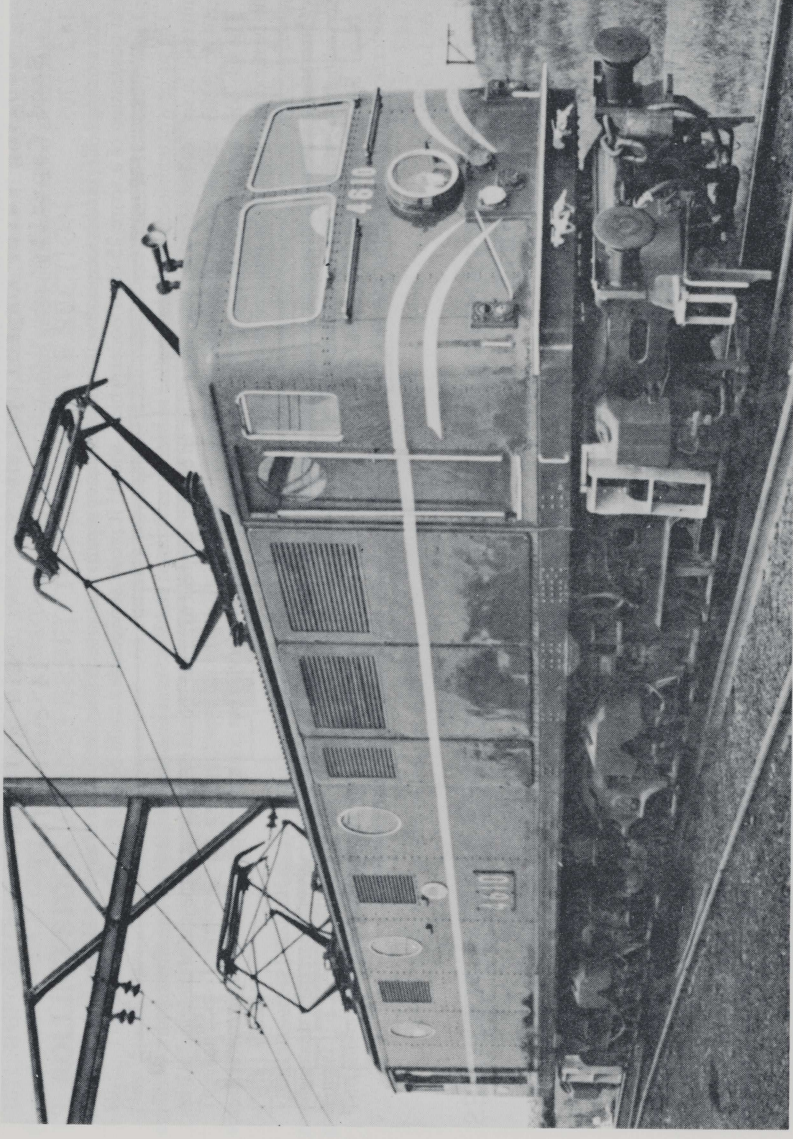
DIESEL AND ELECTRIC LOCOMOTIVES



13.2 Cab Type 42 Class

To demonstrate the Cab type diesel electric locomotive, the sub-committee recommends the acquisition of a 42 class, as these were the first of this carbody style and the first diesels built locally for the N.S.W. Railways in 1955. An example of this class would have to be acquired when one becomes available.

DIESEL AND ELECTRIC LOCOMOTIVES



13.3 Electric 46 Class

Acquisition of one of these locomotives is recommended to demonstrate electric traction as introduced in 1956 by this class which is the standard electric locomotive of this system.

14. TRAFFIC LOCOMOTIVES

In addition to operational locomotives contained in the exhibits listing, the sub-committee recommends the retention of the following locomotives as traffic items only, except in two cases as noted here and in the exhibits listing.

14.1 2606

Subject to its boiler condition being suitable for future service.

14.2 2705

The existing boiler on this locomotive is in need of heavy repairs and as such is unlikely to be of any use. However, the Museum is in possession of a spare 25 class boiler which, should it prove serviceable, could be used in this engine.

14.3 3085 - 3137

The success of tank locomotives in loopline service is undisputed and 3085 is an engine capable of service after repairs. 3137 is currently in service but as only one is required as an exhibit, the best example should be retained at the end of their useful lives.

14.4 3203 - 3214

The sub-committee recommends the retention of both these engines in service but points out that at the end of their useful lives, the best example should be retained as an exhibit.

14.5 3526

Currently, the Museum does not possess a fast mainline locomotive capable of early return to service apart from this engine. Accordingly, it recommends the retention of 3526 for this purpose.

14.6 5461

Retention of this locomotive can only be justified while its value as a trafficable engine continues.

14.7 5910

As for 5461.

15. LOCOMOTIVES AND PARTS THEREOF RETAINED FOR SPECIAL PURPOSES OR SPARE PARTS

15.1 4102

This locomotive is recommended for retention only as a yard shunter.

15.2 5908

It is recommended this locomotive be retained for sectioning.

15.3 7100

This locomotive is one off prototype and as such is not desirable Museum material, however, the sub-committee recommends its retention to demonstrate electric traction until such time as it can be replaced by a 46 class.

15.4 Vulcan

The sub-committee recommends the display of this locomotive probably in the south western corner of the site. We do not include the Vulcan as an exhibit, but only to display the purpose of the site to passers by, when eventually, all other items are contained inside a building.

15.5 Giesl Ejector

This feature, introduced experimentally on 3616, proved successful and is worthy of preservation for technological reasons. As such, the sub-committee recommends that this apparatus be retained for display.

15.6 Spare Parts

As an operating railway is now a part of the Museum's activities, the importance of a supply of parts is of considerable consequence. The sub-committee recommends that the following locomotives be retained as a source of parts.

1307, 1308, 3616, 3820, 5916

16. TENDERS

The Museum is in possession of several spare tenders and the sub-committee recommends the following -

16.1 208

A six wheel tender originally delivered with a 25 class and last attached to a 19 class, this tender is the best spare the Museum possesses, and its retention for traffic purposes is recommended.

16.2 313

A bogie Baldwin tender originally delivered with a 21 class and currently on loan to locomotive 1904, this tender is recommended for retention as an exhibit.

16.3 381

A six wheel tender originally delivered with a 17 class and now attached to locomotive No. 78.

16.4 412

A six wheel tender originally delivered with a 12 class and last attached to a 30 T. This tender is in reasonable condition and its retention for traffic purposes is recommended.

16.5 Lo. 32

A four wheel shunting and fire-fighting tender restored at Enfield but now showing signs of deterioration owing to exposure. The sub-committee recommends its retention as its condition is reasonable and the small size to its advantage. Lo 33 is a bogie tender of similar design, is in poor condition, and its retention is not warranted.

16.6 318, 334

These tenders are in poor condition and their retention would lead to unnecessary duplication.

17. MUSEUM OF APPLIED ARTS AND SCIENCES' LOCOMOTIVES

As rail space is at a premium on our site, the sub-committee recommends that approaches be made to the appropriate authorities for the removal of these locomotives. Special circumstances apply to one of these locomotives as the Museum is returning 176 to service and the possibility of having 1219 designated as a M.A.A.S. locomotive in lieu of 176 should be pursued.

18. DELETIONS

The sub-committee recommends that the following items represent no significant development not already available in the selected exhibits or as being of no use to the tourist railway and also recommends their future disposal.

1021, 1063 (Coal Grab), 1076 (1804), 1219, 1803, 1905, 2029, 2419, 3609, 3813, 5096, Alison (Lysaghts), Kathleen (Lysaghts), No. 4 J.A.B. (20N), No. 16 (B.H.P.), 318 Tender, 334 Tender, Lo. 33 Tender, SWT 12.

19. ROLLING STOCK TRANSFERRED TO LOCOMOTIVE SECTION

Five items of rolling stock were transferred to the locomotive sub-committee's control as mentioned in 3.3 and these are -
19.1 Travelling Water Gins Nos. SWT 5, 6 and 12

Nos. 5 and 6 are in the Museum's possession and currently serviceable. These vehicles are fitted with diesel pumping equipment and are in good condition. SWT 12 is surplus to requirements and his recommended for deletion.

19.2 VHO 1816

This van is used to carry spares and equipment necessary for long distance steam operations and as such is a necessary service vehicle.

19.3 FZ 909

This carriage is fitted out as a locomotive instruction car and the rolling stock sub-committee considered it surplus to their requirements. This vehicle has no traffic use but it is thought to be of some instructional value in the training of operations personnel.

The sub-committee recommends the retention of all these vehicles until their useful service life has expired.

THE NEW SOUTH WALES RAIL TRANSPORT MUSEUM

REPORT

ROLLING STOCK SUB-COMMITTEE

ROLLING STOCK SUB-COMMITTEE REPORT

1. STRUCTURE AND PURPOSE OF THE SUB-COMMITTEE

1.1 The rolling stock sub-committee was set up in January 1977 at the request of the Exhibits Committee of the New South Wales Rail Transport Museum, the chairman and convener being Mr. D. V. Toor. Membership of the sub-committee was by invitation, active members being, in addition to Mr. Torr, Messrs. S. Carroll, E. Kain, W. Knight, I. Martin, P. Neve and E. Smith.

1.2 The stated purpose of the rolling stock sub-committee was to advise the Exhibits Committee of the New South Wales Rail Transport Museum on the selection of rolling stock exhibits for the Museum.

1.3 The sub-committee met on twelve occasions between January and October, 1977. Members of the sub-committee inspected all number-identified vehicles in previously compiled Museum lists, and the condition as inspected of all vehicles was taken into account when considered.

1.4 The sub-committee acknowledges the submissions made by Museum members and others. These submissions were reviewed individually and the comments contained therein were taken into account when appraising each potential exhibit.

The sub-committee particularly acknowledges the advice given by the Deputy Director of the Museum of Applied Arts and Sciences, Sydney, at a specialist meeting of the N.S.W. branch of the Museums Association of Australia, held on 17th February, 1977, without which the task would have been immeasurably more difficult and probably lacking in perspective.

2. TERMS OF REFERENCE

2.1 The sub-committee was not given, as far as it is aware, precise terms of reference by which to undertake its task. It assumed terms of reference, and believes that these should not be the subject of contention.

2.2 The task the sub-committee assumed was to select and nominate rolling stock exhibits which:

2.2.1 adequately provide a representative range of passenger and freight rolling stock to demonstrate the development of locomotive-hauled and self-propelled railway carriages and wagons used in New South Wales.

2.2.2 can reasonably be accommodated at the present Museum site at Thirlmere.

2.2.3. can reasonably be restored to original or most typical condition.

2.3 The sub-committee adopted the following criteria, based on the advice of the Deputy Director of the Museum of Applied Arts and Sciences, Sydney.

That the proposed exhibit:

2.3.1 represents a significant development in the history of the railway vehicle in New South Wales.

2.3.2 is representative of the most common type of vehicle of its class, or

2.3.3 best demonstrates the features of 2.3.1 or 2.3.2.

2.4 The sub-committee acknowledges that, as the Museum is a commercial organisation insofar as public patronage is required for its survival, other criteria militating against pure museum principles might, in some instances, apply.

3. GENERAL RECOMMENDATIONS

3.1 The sub-committee recommends that, of the potential exhibits previously listed by the Museum - some sixty passenger carriages and twenty-four freight wagons - eleven passenger carriages and four freight wagons be retained for preservation and restoration as static exhibits. The sub-committee recommends that, in addition to the above, seven passenger carriages and ten freight wagons, plus a container, be obtained as they become available in the future, for preservation and restoration.

3.2 The sub-committee recommends that, as far as carriages and wagons are concerned, "exhibit" be defined as a static exhibit for display purposes only, restored to the specification most readily attainable.

The sub-committee has made this recommendation of static display having concluded that, with few exceptions, the potential exhibits offered to, or requested by, the Museum are life-expired at time of acquisition, requiring major repairs, preservation and restoration.

The sub-committee, from members' previous practical experience of rolling stock restoration and from advice received, is of the opinion that the selected potential exhibits nominated in this report are, if not already restored, capable of being restored to a condition whereby, superficially, they will appear to be in first-class condition. However, it must be emphasised that such vehicles, if subjected to the stresses of traffic movement, would rapidly lose any semblance of first-class condition, and their value as exhibits would then diminish.

3.3 The sub-committee considers that it is essential that all exhibits be stored under cover, well protected from the weather, both before, during and after preservation and restoration. Rapid deterioration can not be arrested while vehicles are stored or displayed in the open. Some vehicles in the nominated list in this report will no longer be reasonable restoration projects if allowed to continue to deteriorate at their present rates.

3.4 The sub-committee is of the opinion that the maintenance and preservation of rolling stock required for the tourist railway or any other traffic purpose should be the responsibility of the respective operating sections.

This recognises:

3.4.1 the primary purpose of the N.S.W. Rail Transport Museum being a museum, in accordance with its nominal status.

3.4.2 the limited manpower resources of the carriage restoration section of the Museum.

3.4.3 the fact that, as the carriage restoration section of the Museum has devoted its capabilities to general construction at Thirlmere, no preservation or restoration of exhibits has been undertaken by the section for over two years.

3.4.4 the recommended list of potential exhibits, allowing two years per passenger carriage for complete restoration, provides over twenty years' work, not including preservation of every vehicle pre- and post-restoration, plus the work needed to restore and preserve freight rolling stock.

3.5 The sub-committee considers that it is necessary for there to be a covered, secure workshop area for rolling stock restoration separate from the display area, both for security of the exhibit and materials; and also so that maximum working time can be assured without distraction and without danger to visitors and other Museum workers.

4. SUBJECT PRECIS - PASSENGER ROLLING STOCK

The sub-committee believes, from its own experience, that a brief précis of the history of passenger railway vehicles in New South Wales will help the reader of this report.

4.1 The development of the railway carriage in New South Wales has been influenced by two overseas developments, that of Britain and America; the two have co-existed in New South Wales for many years, and elements of both need to be incorporated to provide a balanced picture. In historical terms, the developments of importance were:

4.1.1 **Rigid frame four wheel.** This form of carriage was built from the inception of the railway in New South Wales until the 1880's, and it developed to quite advanced and specialised forms, e.g. with continuous brake, and as sleeping cars. Unfortunately, the Museum does not have an example, neither is it likely to acquire one.

4.1.2. **Rigid frame radial truck.** In both six wheel and eight wheel forms, the radial truck carriage enjoyed an apparently brief vogue in the 1860-1880's.

4.1.3 **Double-bogie saloon type.** Beginning in the 1870's, the American influence was introduced on a large scale with such features as full saloon centre aisle accommodation, end platform verandahs, and lantern, later clerestory, Mansard and semi-elliptical roof versions.

4.1.4 **Double-bogie, compartment, non-corridor.** A typical British design without, and with lavatory accommodation, introduced from 1879 and built until about 1915. Introduced six wheel bogie.

4.1.5 **Pullman type.** A typical American design of sleeping car. These carriages introduced a larger loading gauge body design and a higher semi-elliptical roof profile than previously.

4.1.6 **12-wheel, 72ft. 6ins. carriage.** A diverse group of sleeping and sitting accommodation cars, representing the long distance fully enclosed vestibuled carriage first introduced in 1912.

4.1.7 **8-wheel, side corridor, compartment sitting carriage.** The "R" series of rebuilds, introduced in the late 1920's, was continued in principle in new construction with the first country stock steel-framed and steel-panelled "S" series of the mid-1930's.

4.1.8 **"Tourist" carriages.** Centre aisle, semi-saloon with lavatory accommodation; retaining the end verandah in rebuilds of the bogie saloon-type carriages. Rebuilt to a new external appearance in the "L" series. The steel "N" series of the 1930's perpetuated this type in new construction.

4.1.9 **Air-conditioned Saloon.** Sealed windows, flush roof, power supply from separate generator car; fluorescent lighting.

4.1.10 **Stainless steel locomotive-hauled carriage.** External appearance. Produced in several accommodation configurations.

4.1.11 **Electric multiple unit carriage.** A design emanating from the 1921-type "Bradfield" carriage and associated trailer carriage, through the standard suburban steel saloons, to the double-deck carriage, with the sub-group inter-urban carriage designs.

4.1.12 **Self-propelled railcars.** Originating with the production series CPH-type, continued with the postwar developments of single and multiple-unit railcar units based on both local and overseas designs.

4.2 There are, of course, many sub-groups, of special-purpose vehicles such as vans of various types, dining cars, composite cars, etc., but in general the essential features of such vehicles are represented in the major groups listed above; particular features may be represented adequately by models or photographs.

5. RECOMMENDATION FOR PASSENGER CARRIAGE EXHIBITS

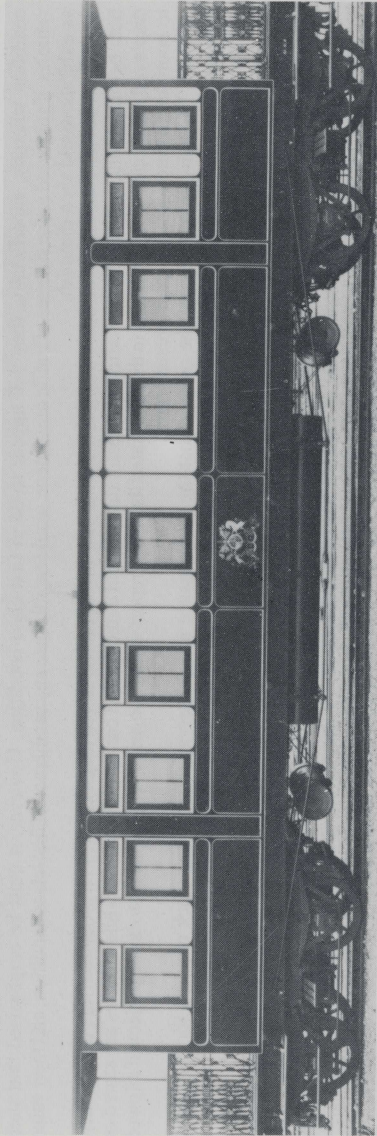
Of the vehicles presently in the possession of the Museum, the following are recommended for retention as exhibits:

AC 1, LFA 153, HS 36, TAM 504, 8-wheel radial truck carriage, BKD 711, RBX 647, T 4279, C 3104, CPH 3, FP 1.

The following are recommended for acquisition as exhibits:

"S" series carriage, "H" series carriage, Stainless steel sleeping carriage, Diesel multiple unit vehicle, Stainless steel interurban carriage, Double deck suburban electric multiple unit carriage.

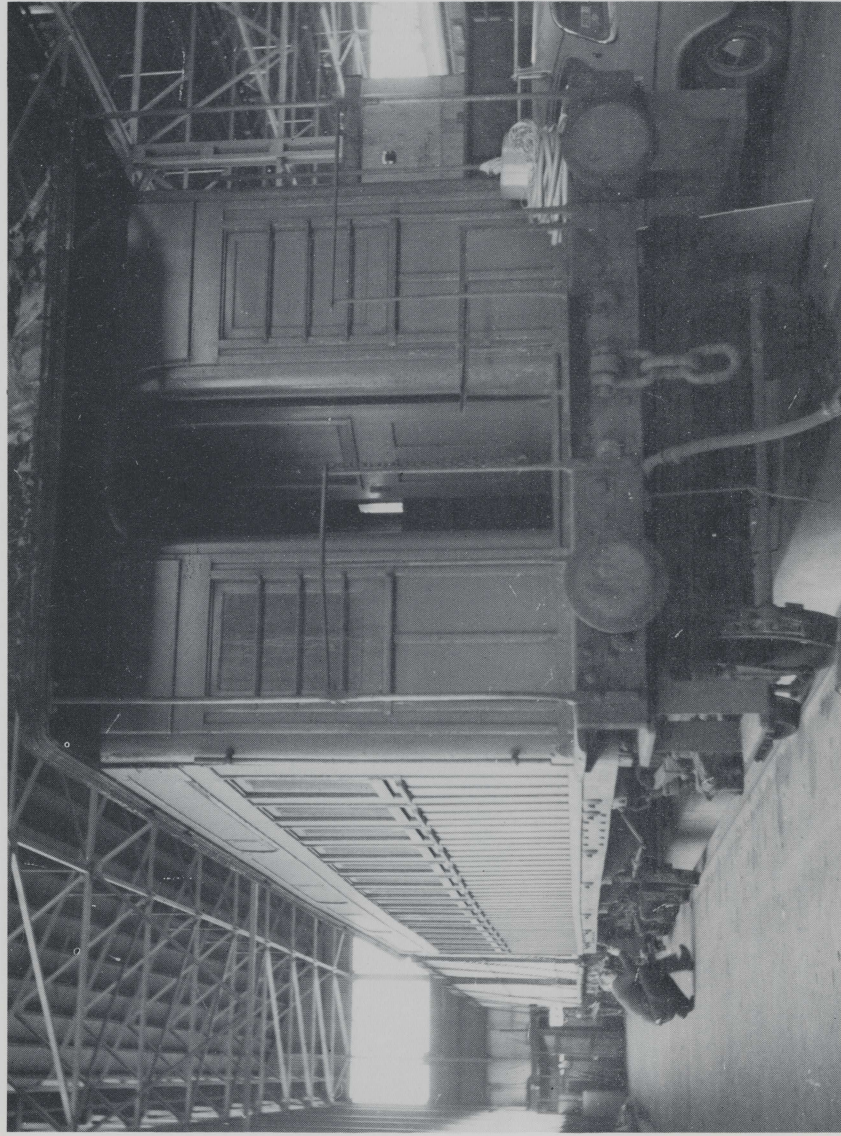
Detailed descriptions of these carriages, justifying their retention and acquisition, are as follows:



5.1 AC 1

Bogie state car. Unique. An example of the highest standard of railway carriage building of the late Victorian period. Presently in very good condition.

This carriage has been chosen to represent the more ornate form of end-platform 19th century design and, as such, has been preferred to the former AM-class sleeping car listed as BI 897.



5.2 LFA 153

An end verandah-platform suburban saloon carriage of 1890 vintage in near original condition. It appears to be structurally complete, although requiring extensive restoration.

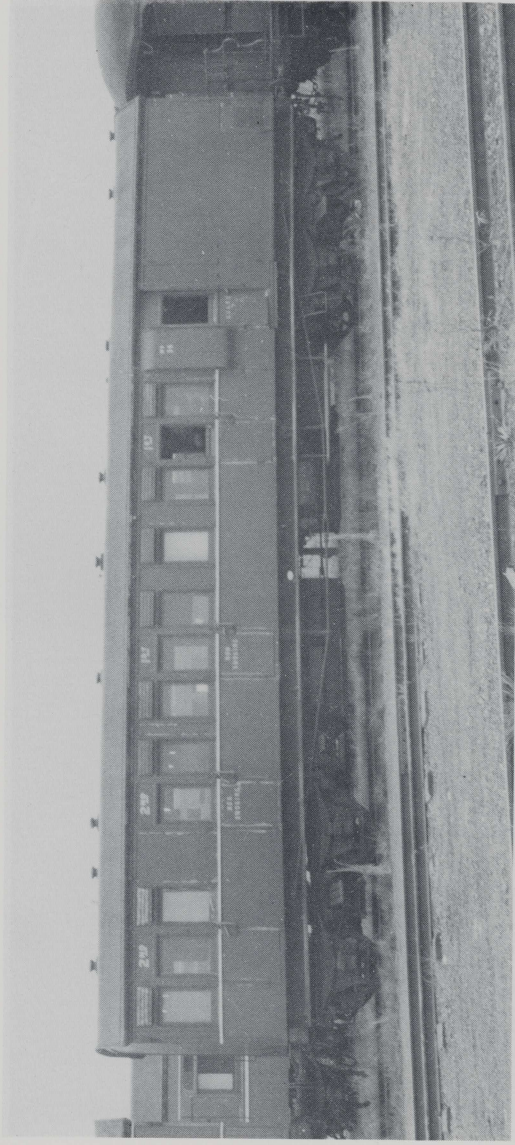
Particular features are:

- i) non-continuous window sills
- ii) original type rain gutters/spouts
- iii) Mansard roof with canopy ends
- iv) panelled sides

This carriage is representative and typical of the large number of "American" -type locomotive-hauled suburban carriage and variants.

When assessed with similar carriages FA 1864, CCA 1273, FA 177, RG 1947 and W 640, LFA 153 has been selected on the following grounds:

- i) As a suburban end-platform carriage, LFA 153 is more typical than any of the other carriages listed above. The CCA branch-line composite/guard variant only consisted of six examples.
- ii) The structurally sound and nearly original state of LFA 153 makes it a better restoration proposition than the derelict clerestory roof workman's van W 640.
- iii) Modifications made to the end bulkheads of FA 1864 following its conversion to and from a railmotor render it less typical of the suburban end-platform carriage than LFA 153.
- iv) The Circus Bunk Car FA 177 and the Greyhound Transporter RG 1947 are special purpose adaptations of the suburban end-platform carriage, but are neither representative of large numbers of similar carriages, nor did they represent development of substantial coaching-stock traffic.



5.3 HS 36

A composite compartment non-corridor lavatory carriage with guard's compartment and luggage space. This carriage combines virtually all of the features of First Class and Second Class accommodation of the non-corridor carriage and of the guard's van of that era. It is in poor to reasonable condition but is capable of restoration. It is considered preferable to restore this representative carriage rather than several individual carriages.

Particular features of this carriage are:

- i) Mansard roof with original rain gutters and spouts
- ii) Individual First Class and Second Class compartments with outward opening external doors
- iii) Lavatory facilities
- iv) Guard's compartment, with swing doors and containing cast-iron heating stove
- v) Electric train alarm
- vi) Letter-box posting facilities
- vii) Compartment for the carriage of dogs.

As this carriage incorporates so many features, it has been chosen as a single exhibit, rather than a separate whole carriage to demonstrate each feature. Hence its selection rather than the non-corridor express lavatory carriages BX 1142, (1st class) and LFX 1776 (2nd class) and the functionally similar passenger saloon composite with guard's compartment CCA 1273. HS 36 is judged to be a better example of the composite non-corridor carriage than the similar HCX 868 and HCX 1187, having more of the original features remaining intact.



5.4 TAM 504

12-wheel, 72ft. 6ins. side-corridor sleeping car with ten 2-berth compartments with double-tier bunks, attendant's cubicle, and lavatories. This carriage is of the most numerous class of a type of widely-used special-purpose passenger carriage. It is regarded by the sub-committee to be the most typical of the types available.

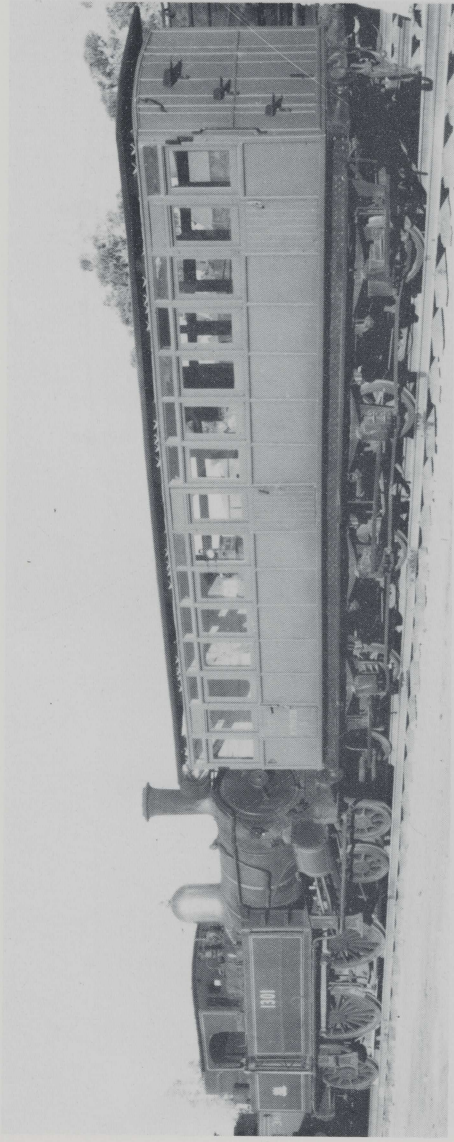
Particular features of this carriage are:

- i) length
- ii) canopy end with high semi-elliptical roof
- iii) bow ends with concertina vestibule connections
- iv) 6-wheel bogies
- v) sleeping accommodation
- vi) on-train staff attendant's facilities and accommodation
- vii) near original condition and period furnishings
- viii) high standard of craftsmanship
- ix) large loading gauge

This carriage, on a steel underframe, is in good condition and can readily be restored.

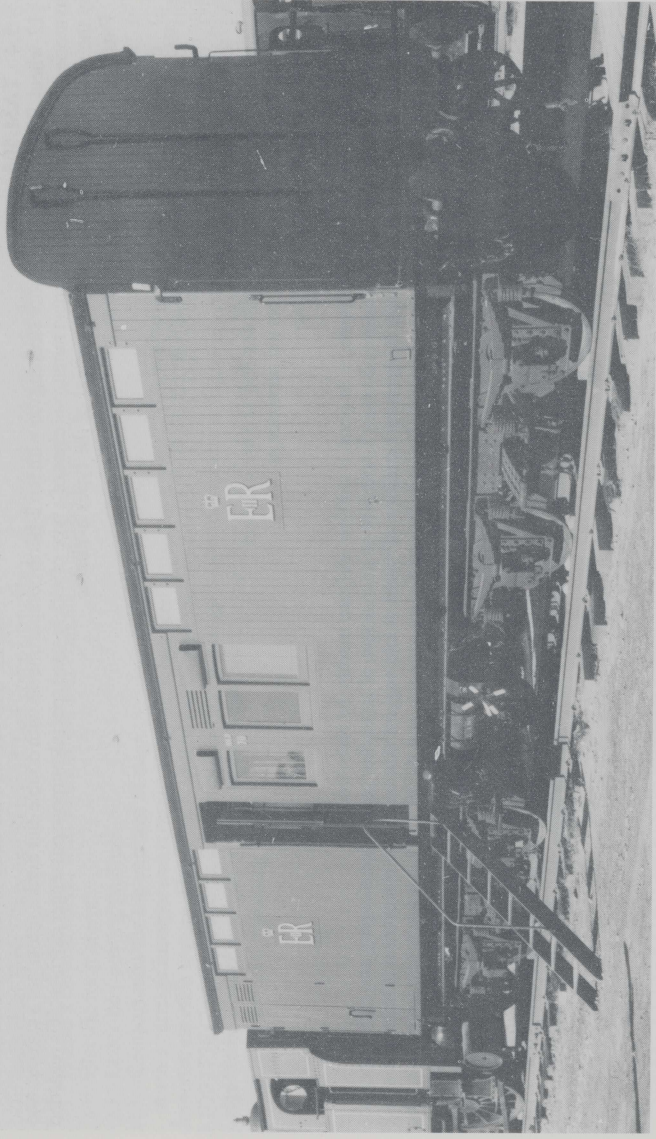
The combination of the above features favours TAM 504 as an example of an earlier generation sleeping car, rather than the possible alternatives EAM 1297 (the body/frame condition of which would suggest that complete restoration is impracticable); MAL 888, a 1950's rebuild featuring a separate lavatory for each compartment; and ACM 1725, a branch-line sleeping/sitting car without continuous corridor (making visitor inspection more difficult) and without gangway connections; the sleeping compartments of ACM 1725 are similar to those in TAM 504, and the style of sitting compartments is similar to those in the S class carriage.

To represent the technology of the railway carriage with sleeping accommodation as it most commonly ran on the N.S.W. railways, the TAM is felt to be a better choice than the even earlier generation BJ 897 (formerly an AM sleeping car), DCC 1039 (a former Pullman-type car) and BAM 1 (formerly an observation car converted from a sleeping car), the latter two being in very poor condition requiring virtual rebuilding.



5.5 8-wheel radial truck carriage

This carriage represents the earliest period for which the Museum has, or is likely to acquire, an exhibit. It is a non-bogie carriage, and embodies an ingenious solution to the problem of a long carriage with minimum axle load negotiating sharp curves. This carriage represents a significant period in the development of the railway carriage in New South Wales. The condition of the carriage is only fair. The interior needs to be reconstructed. Restoration will be a major undertaking. The radial truck concept, an early alternative to the pivoted bogie, could either be represented by the above or by a 6-wheel radial, WV 666, the condition of which is very poor. The 8-wheel example has been selected.



5.6 BKD 711

Bogie prison van. Apart from its social history curiosity value, this vehicle has, as its principal feature, a high semi-elliptical roof with flat van ends.

The atypical nature of this highly specialised passenger carriage does not qualify it for inclusion in the Museum's collection of exhibits, if one accepts the criteria described earlier in this report. However, the sub-committee recognises two factors:

- i) the recent repair and repainting of this van by the Public Transport Commission
- ii) the visitor appeal value of this vehicle, demonstrated at Thirlmere.

For these reasons, the sub-committee recommends its retention as an exhibit. This carriage is in good condition.

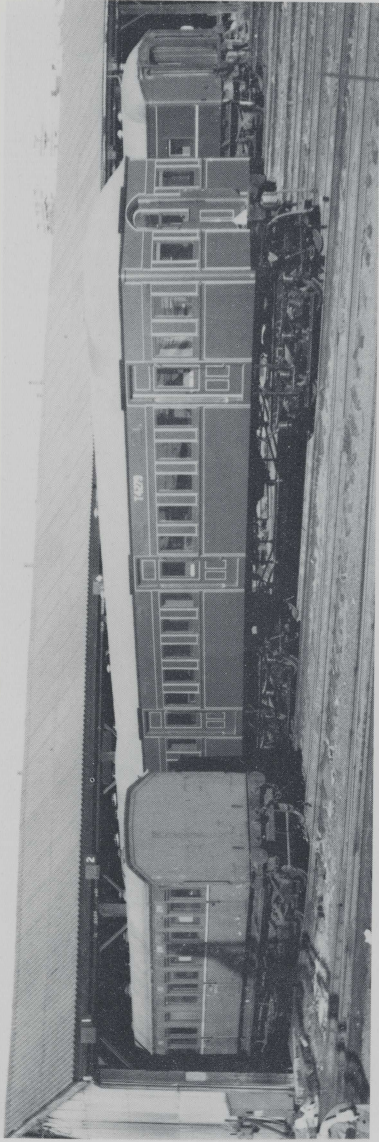


5.7 RBX 647

12-wheel, 72ft. 6ins. First Class/Buffer carriage. This carriage is the nearest approximation available to the original form of 12-wheel sitting car, which was a significant advance in design for country rail travel. It features two compartments approached from a side corridor, but without ceiling height division between compartments; two saloons with seating similar to that in "N" series carriages and "tourist" carriages; and an example of on-train catering facilities. This carriage incorporates the principal features of a large group of similar carriages.

Its interior is generally in very good condition; the exterior has been modified from original by removal of window crown lights, sheeting with plywood replacing matchboarding; and externally painted rather than varnished.

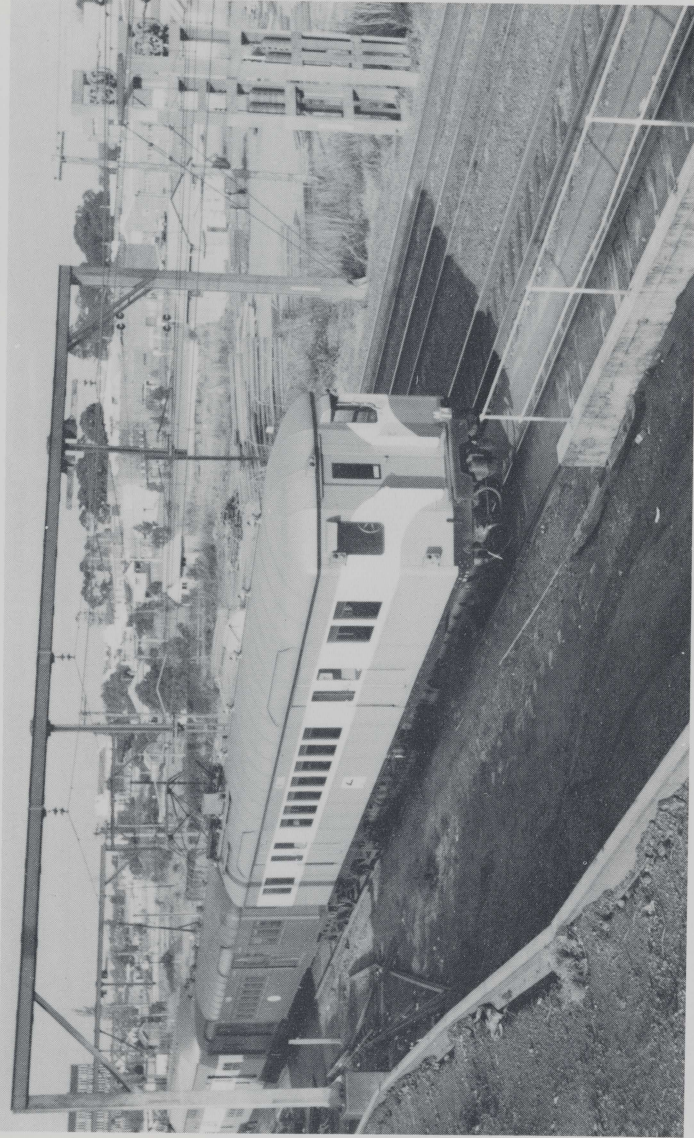
It has been recently repainted externally and is in good condition overall. It is considered that this carriage embodies the features of the previously selected carriages BV 485, a 1st-class carriage with compartment and saloon sections; BSR 2031, a steel S carriage notable for buffet facilities; an MCE, a side-corridor composite carriage; TFX 1939, a side-corridor 2nd-class carriage; and the ex-Newcastle Express conversions HFV 690, RFV 693 and HCV 921, each of which was represented by only two examples and which are atypical of the 72' 6" sitting carriages of the NSWGR. RBX 647 therefore has been selected in preference to those numbered above to avoid undue duplication.



5.8 T 4279

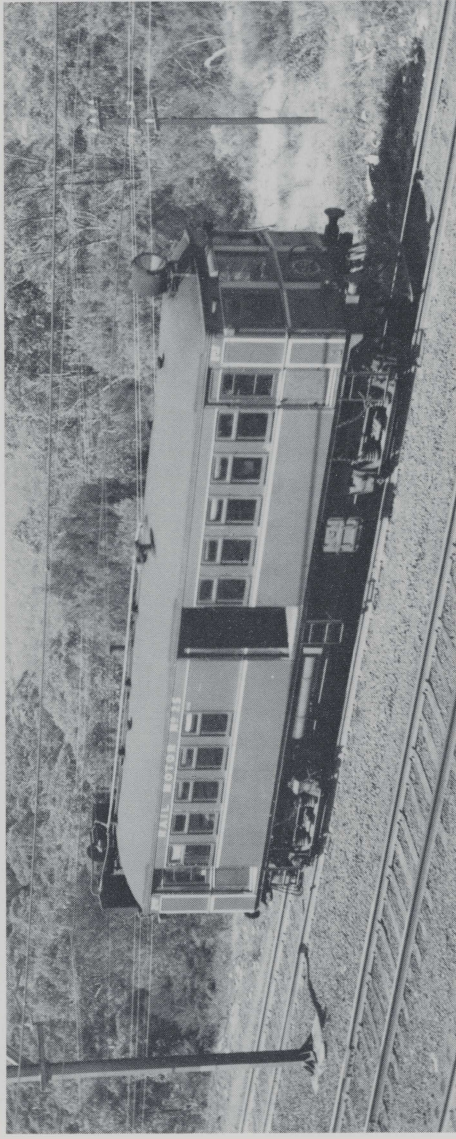
Wooden bodied, steel underframe suburban electric multiple unit trailer carriage. This carriage is representative of the first generation of carriages for suburban electrification in New South Wales. It features wide body design, automatic centre buffing couplings without side buffers, sliding doors, 2+3 seating, planked internal ceiling. It is in restored condition.

As this carriage typifies the majority of such electric trailers, it has been selected in preference to the similar, but much more heavily modified, driving trailer D 4004. The style of furnishing of T 4279 is duplicated in the contemporary "Bradfield" electric motor car C 3045; as the technology of the latter is featured in Leeds Forge electric motor car C 3104, C 3045 was not selected.



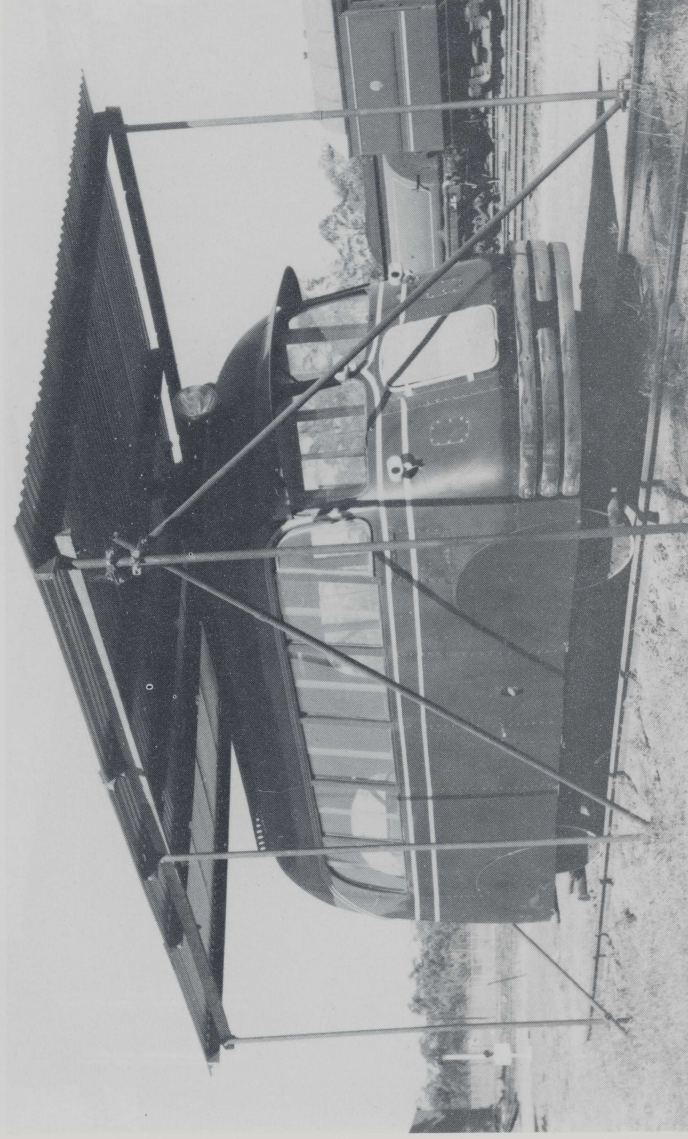
5.9 C 3104

Standard steel driving motor electric multiple unit carriage. This vehicle is of the original design of steel suburban carriage, and is representative of several hundred similar carriages used for over 50 years. Built by the Leeds Forge Company, it is one of the few examples of imported rolling stock. The driving controls are of the type used in all motor carriages until 1957. It is in good condition.



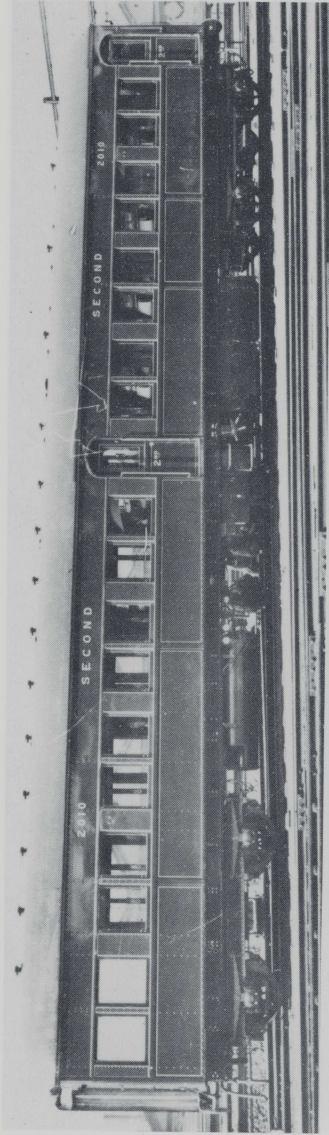
5.10 CPH 3

Self propelled double end rail motor with steel underframe and wooden body; used in outer-suburban and country branch line traffic. This vehicle is representative of the first successful series of rail motors powered by the internal combustion engine in New South Wales. The rail motor has been somewhat modified from original. It is in good condition.



5.11 FP 1

Self propelled single ended railcar, adapted from a contemporary road vehicle chassis and carrying a road vehicle style body. The sub-committee recognises that this railcar does not meet the criteria employed generally. However, this railcar illustrates an imaginative but unsuccessful early (1938-9) answer to the problem of the uneconomic sparse traffic country branch line. In justification, this railcar has been externally restored, has been kept under cover, and it occupies little space. (Indeed, its "scale" is thought to endear it to visiting children, who seem to identify with it.)

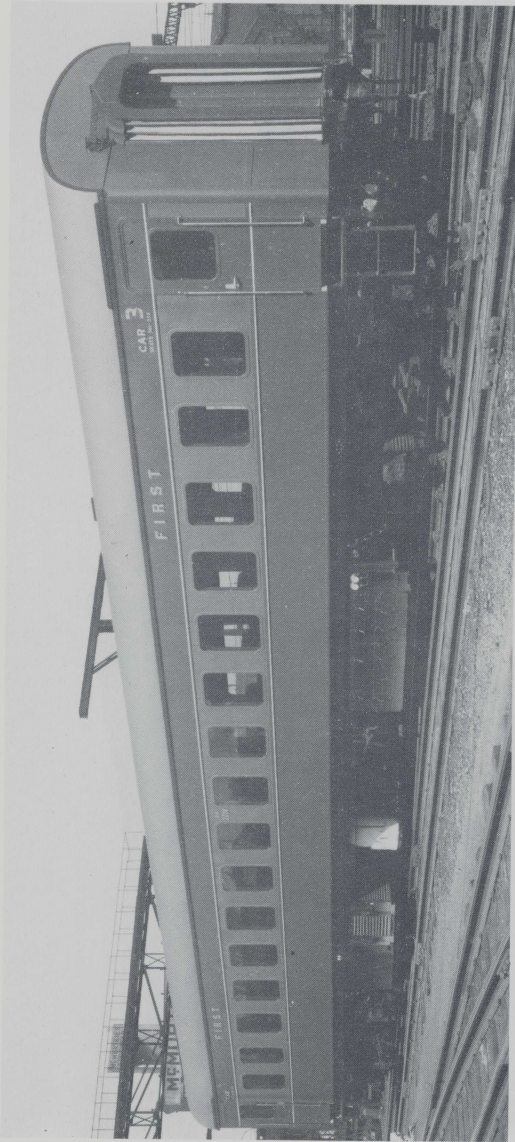


5.12 "S" Series Carriage

Side corridor vestibuled steel framed and rivetted panel sitting passenger carriage of 1935 vintage. In either First Class or Second Class configuration; features roller bearing axleboxes on original series. This carriage is representative, by virtue of construction, of the "N" series carriages and, by virtue of layout, of the contemporary side corridor "R" series and rebuilt 12-wheel side corridor carriages.

An original all-compartment carriage is judged to be more representative of the 1930's construction period than BSR 2031, a comparatively recent modification incorporating on-train buffet facilities, already featured well in RBX 647.

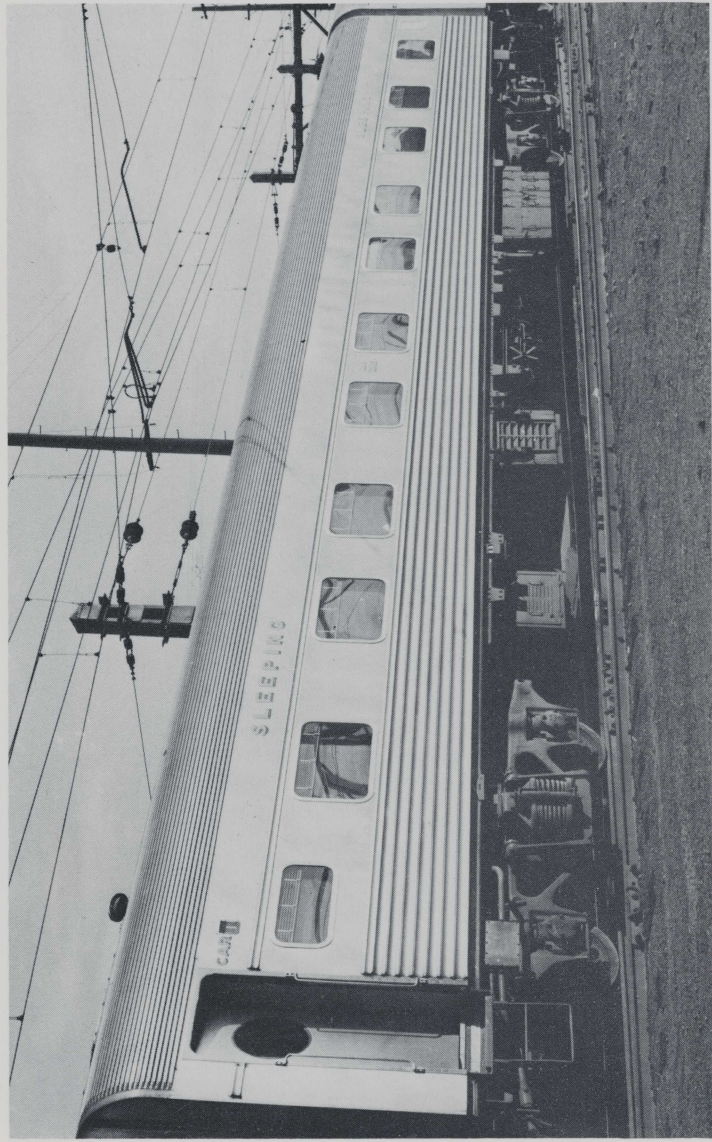
It is recommended that an acquisition be made of a carriage of the original type with features as described above.



5.13 Air-conditioned Carriage

Centre-aisle saloon with swivel seating, introduced in 1948. This carriage, either of BH or FH type, is representative of post-World War II daytime superior express carriages.

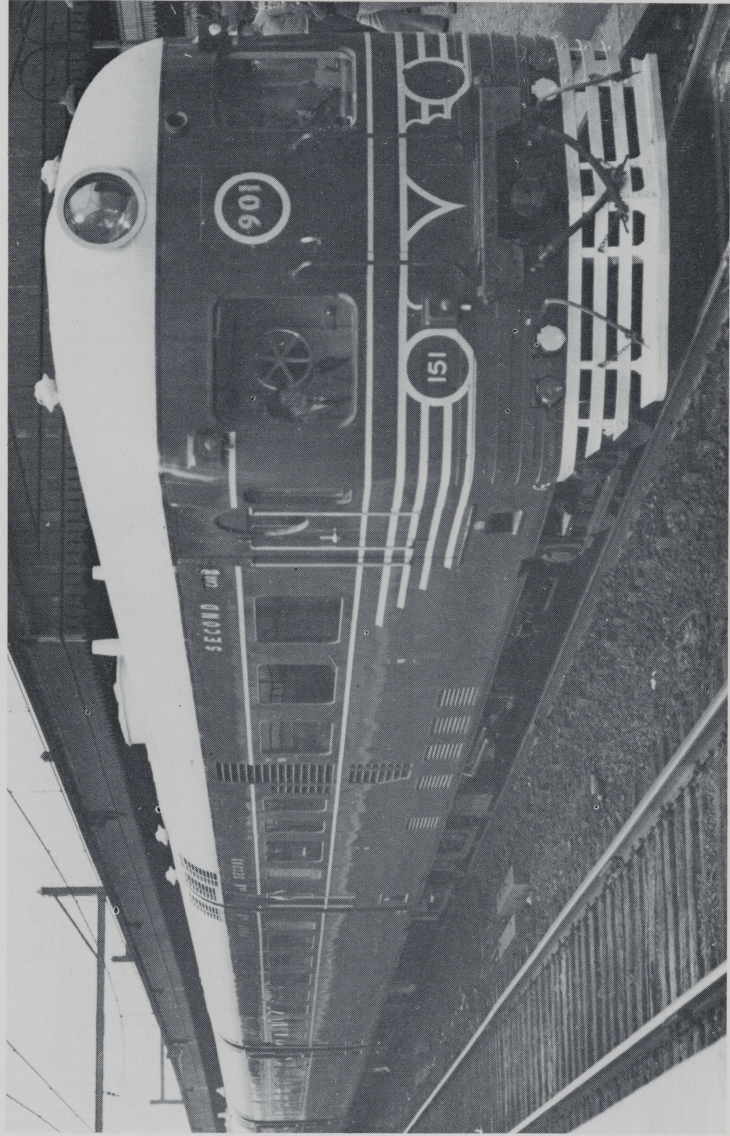
It is recommended that an example be acquired in due course, a BH with 2+1 seating being preferred.



5.14 "Stainless steel" Sleeping Car

This series of carriages, codes NAM or LAN, is representative of sleeping cars used from the 1960's onwards and, with air-conditioning and style of furnishings, demonstrates a major advance of the design of the sleeping car over the earlier type, illustrated by TAM 504.

It is recommended that an example be acquired in due course.



5.15 Diesel Multiple Unit

The "600" series and "900" series trains represent a shift away from locomotive hauled passenger trains in country service. The external appearance, as opposed to the Budd railcars, is peculiar to New South Wales. These trains illustrate the later generation of internal combustion engine powered multiple unit trains, as opposed to the CPH.

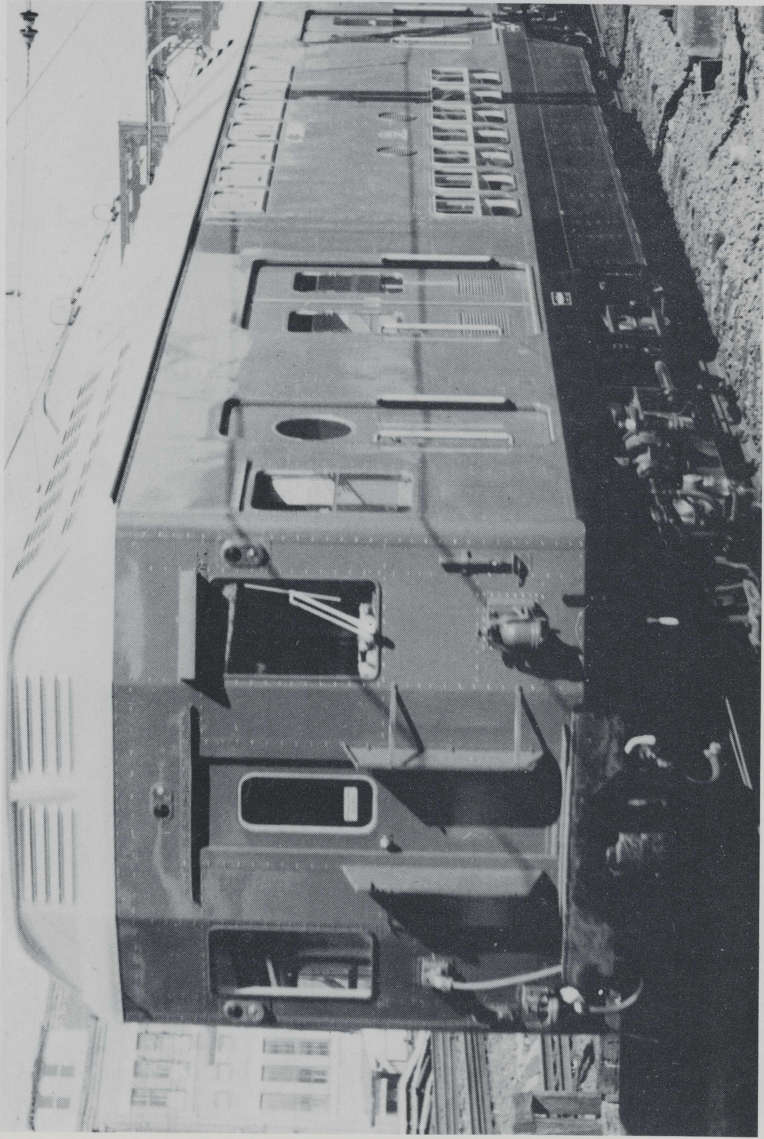
It is recommended that a single terminal car of either the "600" or "900" series be acquired in due course.



5.16 "Stainless steel" Inter-urban Single Deck

This series demonstrates a major development in passenger rolling stock: stainless steel unpainted external cladding; cast steel ride-control bogies; a return to saloon seating for outer-suburban carriages.

It is recommended that a trailer carriage be acquired in the most original condition.



5.17 Double Deck Suburban Steel Electric Multiple Unit Carriage

A major development in the evolution of the passenger carriage in New South Wales. It is recommended that a motor car of the experimental series C3801-4, preferably 3804, be acquired if these carriages are to be disposed of by the Public Transport Commission prematurely.

Otherwise, it is recommended that a T 4800 series trailer be acquired in due course.

6. FREIGHT ROLLING STOCK

It is perhaps helpful for the reader of this report for there to be a summary of the major developments in freight vehicle design in New South Wales.

6.1.1 Fundamental design:

i) 4-wheel chassis, ii) double bogie, iii) lever or ratchet brake, iv) continuous air brake, v) link coupling drawgear, vi) screw coupling drawgear, vii) knuckle coupler drawgear, viii) dumb side buffing gear, ix) spring side buffing gear, x) centre buffing gear incorporated in drawgear, xi) timber framing construction, xii) steel framing construction, xiii) light alloy construction, xiv) grease axlebox, xv) oil axlebox, xvi) roller bearing axlebox, xvii) split spoke wheel, xviii) solid spoke wheel, xix) disc wheel, xx) load capacity, xxi) maximum speed rating.

6.1.2 Merchandise wagon: flat, open, drop-side or fixed side with door, or covered, ventilated or weatherproof.

6.1.3 Purpose-built wagon: for livestock (sub-groups cattle, sheep); coal and minerals; grain; motor cars; liquids; explosives; bar loads requiring bolsters (lumber, steel); out-of-gauge loads.

6.1.4 Brake/Guard's van.

6.1.5 Unit-load frame (the container flat as an example).

7. RECOMMENDATION FOR FREIGHT VEHICLE EXHIBITS

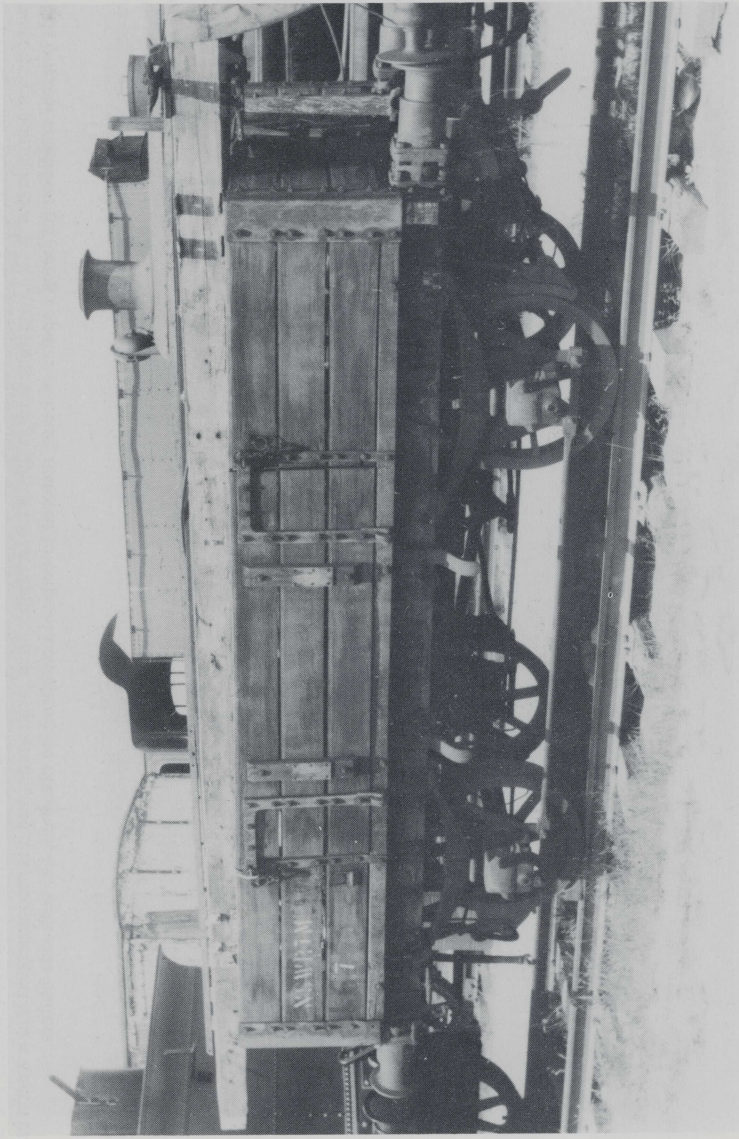
Of the vehicles presently in the possession of the Museum, the following are recommended for retention as exhibits:

L 625, Breakdown crane and match truck, Emu Plains gravel truck, Mine skip.

The following are recommended for acquisition as exhibits:

S open wagon, LCL container, LV van, CW cattle wagon, RU wheat hopper wagon, Newcastle-type 4-wheel private owner coal hopper wagon, BCH bogie coal hopper wagon, MRC bogie refrigerator van, 4-wheel tank wagon, HG 4-wheel guard's van, LHG bogie guard's van.

Detailed descriptions of these wagons, justifying their retention as exhibits, are as follows:

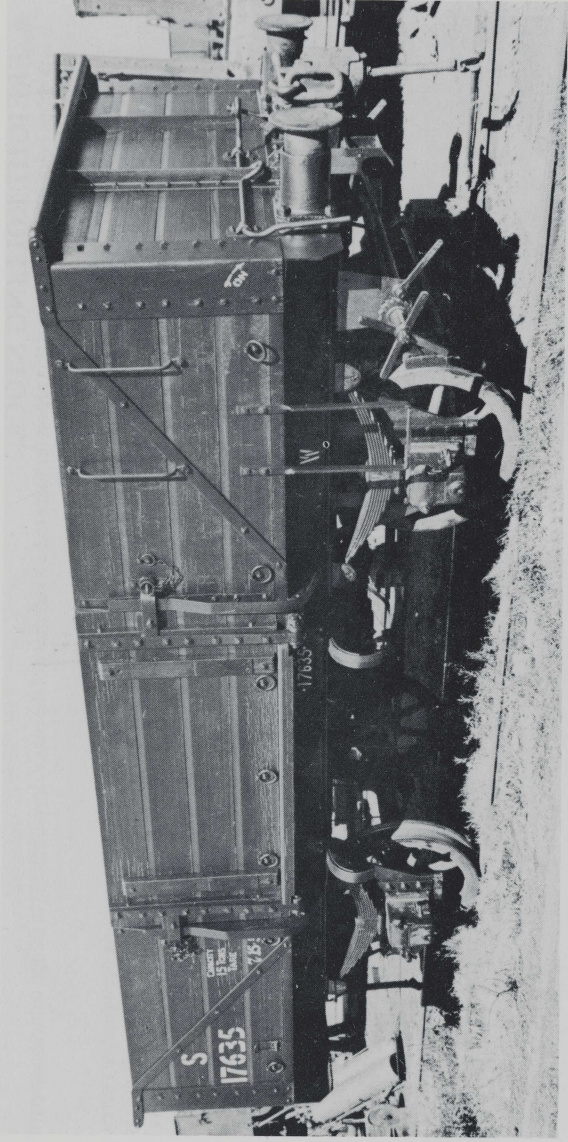


7.1 4-wheel open merchandise wagon code E (L625)

This vehicle appears to be typical of the period prior to the introduction of the continuous brake, and of the wooden frame wagon. This wagon features a lever brake handle (distinguishing it from the similar L287) and screw coupling.

The general condition of this wagon is good and it is suitable for restoration.

By virtue of its lever brake, L 625 is more representative of the period general freight wagon than L 287 which, although also having clasp brakes, has the brakes operated by handwheel. L 625 is also felt to be more representative than the 4-wheel divided dropside wagon L 829.



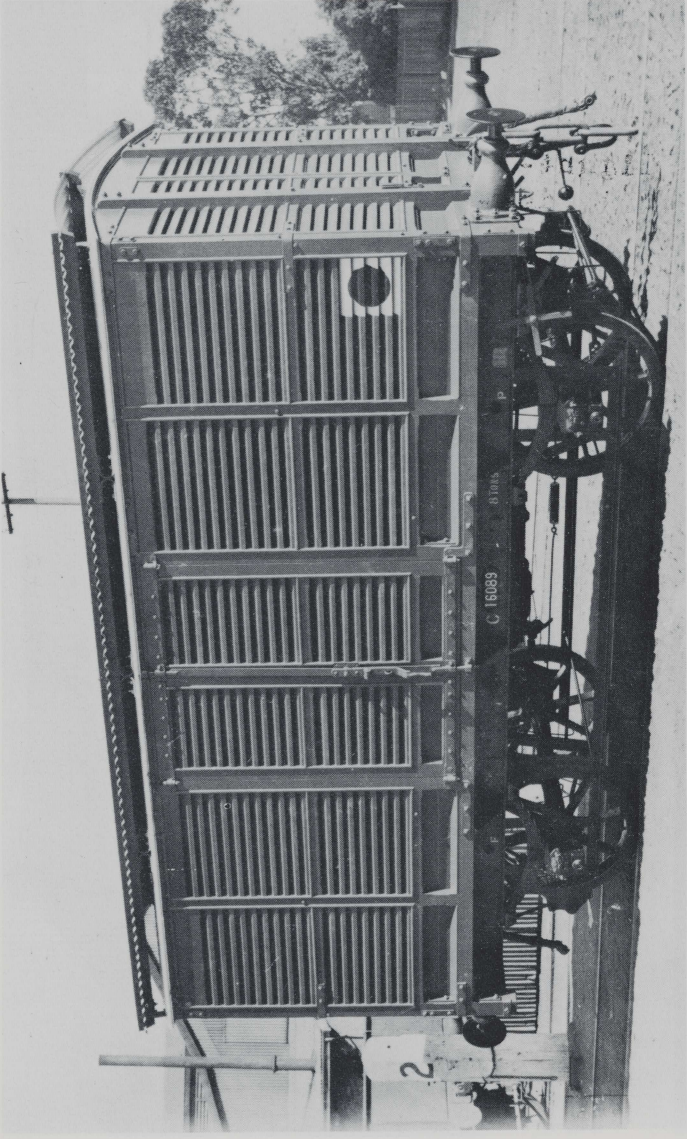
7.2 4-wheel open merchandise wagon code S

Perhaps the most ubiquitous wagon of the New South Wales Government Railways, with about 10,000 examples. The S wagons remaining in use in 1977 are almost all of the 1945-58 replacement programme, and it is recommended that a wagon in this original condition (or being capable of being restored to original condition) be obtained, i.e. with side buffers.



7.3 LCL Container

This container is an example of a unit load designed by the New South Wales Government Railways to speed up less than wagon load consignments while offering maximum security. Although since displaced by the I.S.O. container, this container represented an endeavour by the railways to retain or win back from road transport long-distance merchandise traffic, and is therefore worthy of representation. It is recommended that this item be depicted loaded on the S wagon exhibit.



7.4 4-wheel louvered covered van code LV

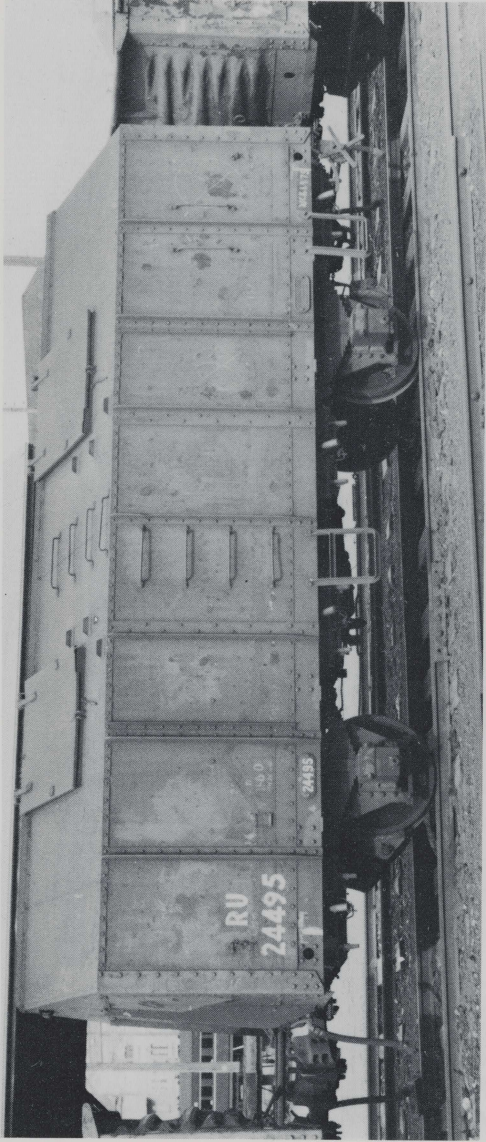
A widely used van type featuring wooden louvered sides and ends: a significant design for the carriage of perishable goods. The general purpose LV van has been preferred to the previously selected light-weight-construction railmotor trailer van GT 83, as the latter type was not widely perpetuated; and preferred to L 177, a large 4-wheel van of indeterminate origin which was latterly an accident equipment van; it does not seem that L 177 was representative of a large class of vehicle. It is recommended that an example be obtained.



7.5 4-wheel cattle wagon code CW

The importance of livestock transport suggests that a livestock wagon should be preserved. To demonstrate the carriage of livestock by a single exhibit, the available choices are either the specialised, and therefore somewhat atypical, bogie horse boxes BKG 780 and KKG 1529, or the type of wagon which for over 60 years carried the majority of livestock. The CW, an example of which in relatively original condition is available to the Museum, incorporates most of the typical features.

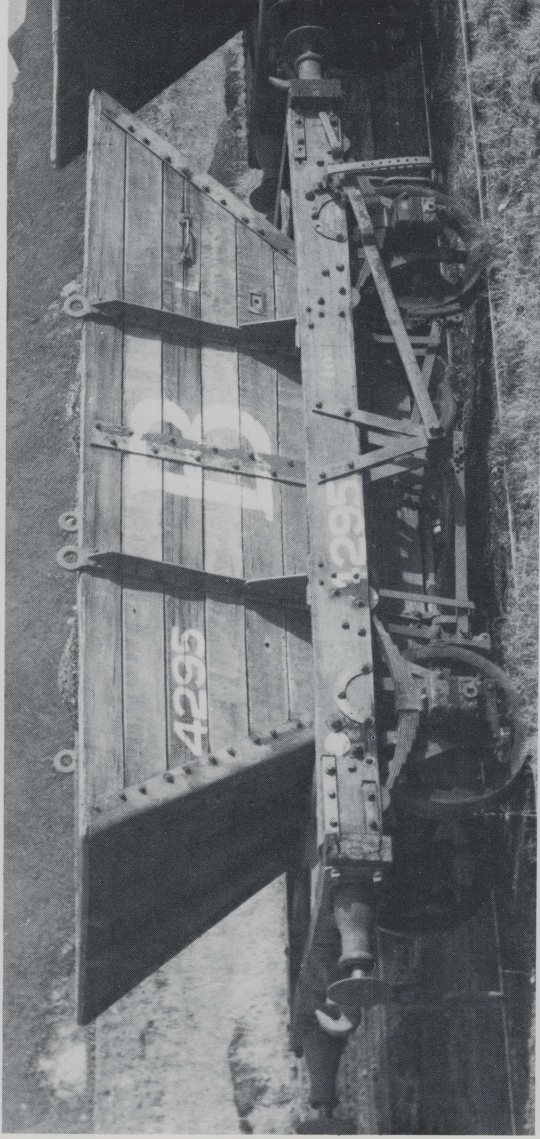
It is proposed that a CW wagon be obtained.



7.6 4-wheel bulk wheat wagon code RU

Seasonal wheat movement remains a substantial source of railway traffic in New South Wales - indeed, it is the justification for some branch lines - and the RU wagon represents a relatively early example of bulk commodity transport, other than coal. The RU wagon also demonstrates the 11ft. 6ins. wheelbase, 9ft. wide wagon that represents a development from the 10ft. wheelbase chassis, and which also included the U and K wagons.

It is recommended that an example be acquired for restoration.



7.7 Newcastle-type demountable body 4-wheel coal wagon

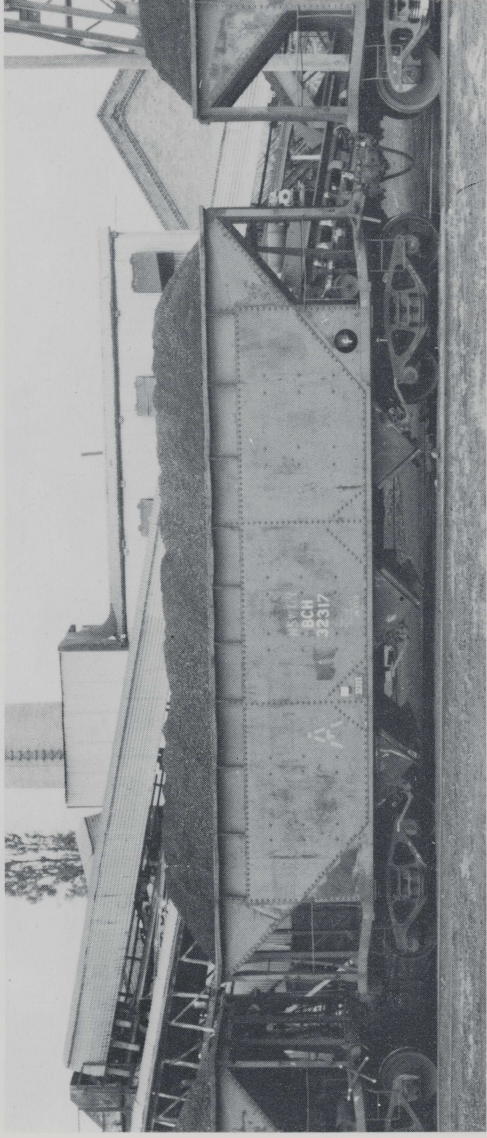
The sub-committee, acknowledging the major role of coal transport performed by N.S.W. railways (both government and privately owned), recommends that the development of specialised coal wagons be adequately represented.

Informed opinion was sought by the sub-committee, and the example previously acquired by the Museum, L 953, having steel underframe, clasp brakes, LL classification, and 1960's-vintage channel lifting eye frames, is not typical of the most common Newcastle-type hopper wagon. Accordingly, wooden frame, side lever brake, L classification, T section forged lifting eye frames have been specified, and an example has been selected and set aside for the Museum.

The South Bulli hopper wagon, which differs from the Newcastle common type in that the body is permanently fixed to the underframe (thus requiring below-track discharge facilities) is felt to be insufficiently different in technology from the BCH-type wagon to warrant retention in addition to the BCH and the Newcastle type hopper wagons.

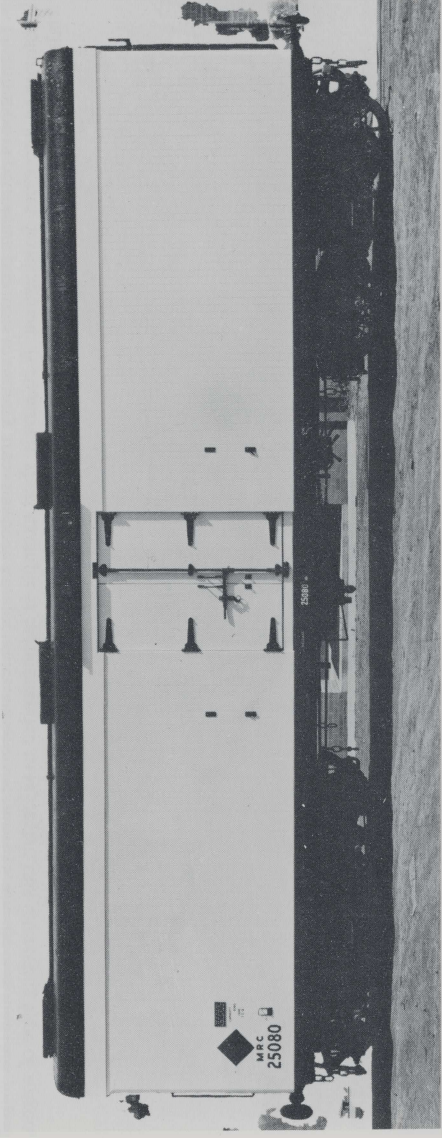
Similarly, the small ballast hopper wagon W 36, is considered not sufficiently significant in its own right to be included as an exhibit, the technology being well represented in other wagons.

It is proposed that the selected example be preserved.



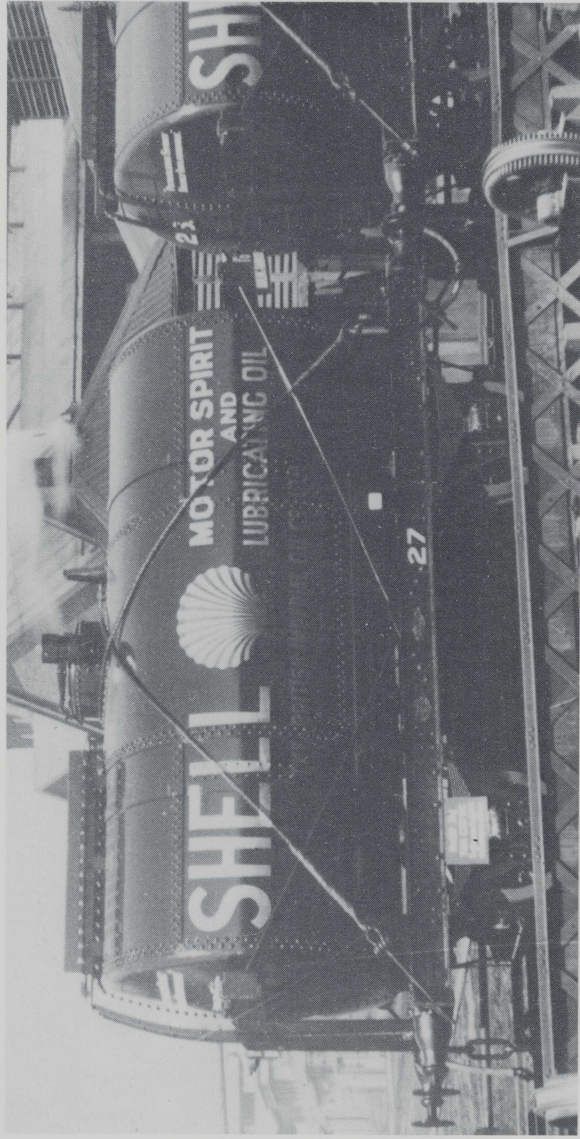
7.8 Bogie bottom-discharge coal hopper code BCH

A significant development in the transport of coal was the American-style bogie air-braked hopper wagon. It is recommended that a BCH type wagon be obtained and restored.



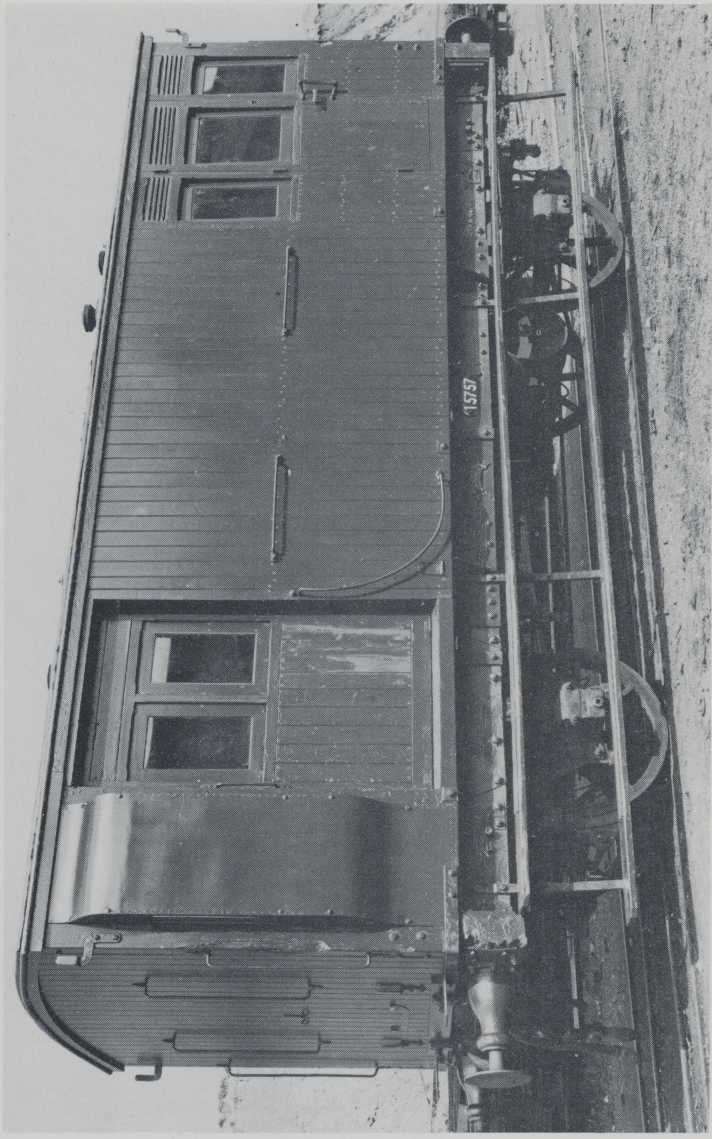
7.9 Bogie refrigerator van code MRC

A service which the railways provided probably before the advent of motorised refrigerator road vehicles, was the transport of perishable foodstuffs cooled by ice in insulated vans. The MRC van represents a notable development of the type. Designed for express train-speed operation, it features vertical planked external cladding, rivetted bogies, a semi-elliptical roof, ice hatches, and a hygienic lined interior. The MRC van is felt to be more representative of the large-scale transport of refrigerated goods than the earlier 4-wheel van L 12. It is recommended that an example be obtained.



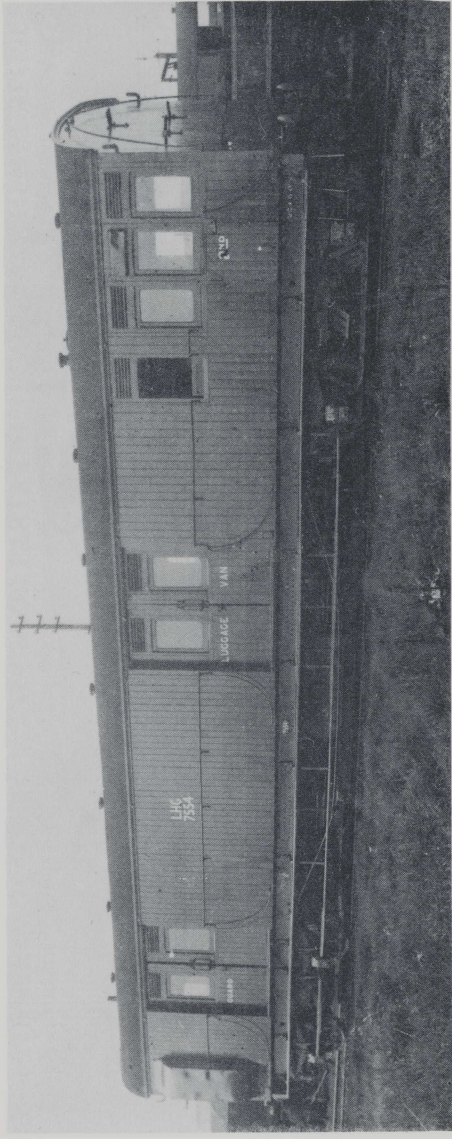
7.10 4-wheel tank wagon

Distribution of petroleum products to country areas has been a major undertaking of the railways, and the bulk load tank wagon illustrates an important development. A relatively short example is recommended to represent this interesting type of wagon, whilst economising on space. Acquisition of a suitable example is proposed.



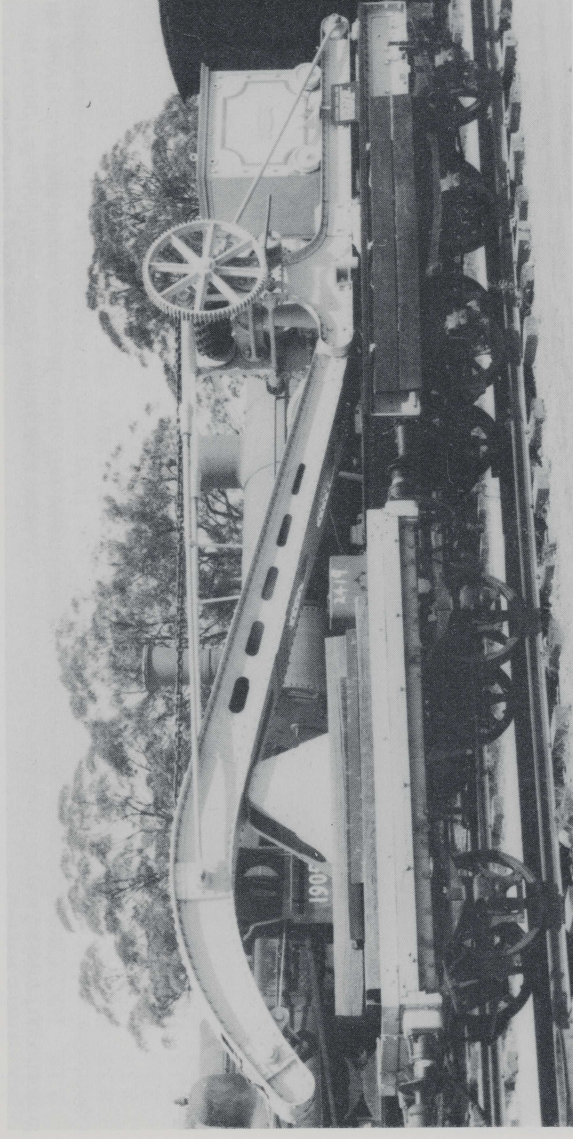
7.11 4-wheel guard's van code HG

This vehicle represents the earlier vintage guard's/parcels van with passenger accommodation. It is recommended that an example readily capable of restoration to original condition be acquired; parts from the two derelict HG vans possessed by the Museum can be used to facilitate this restoration.



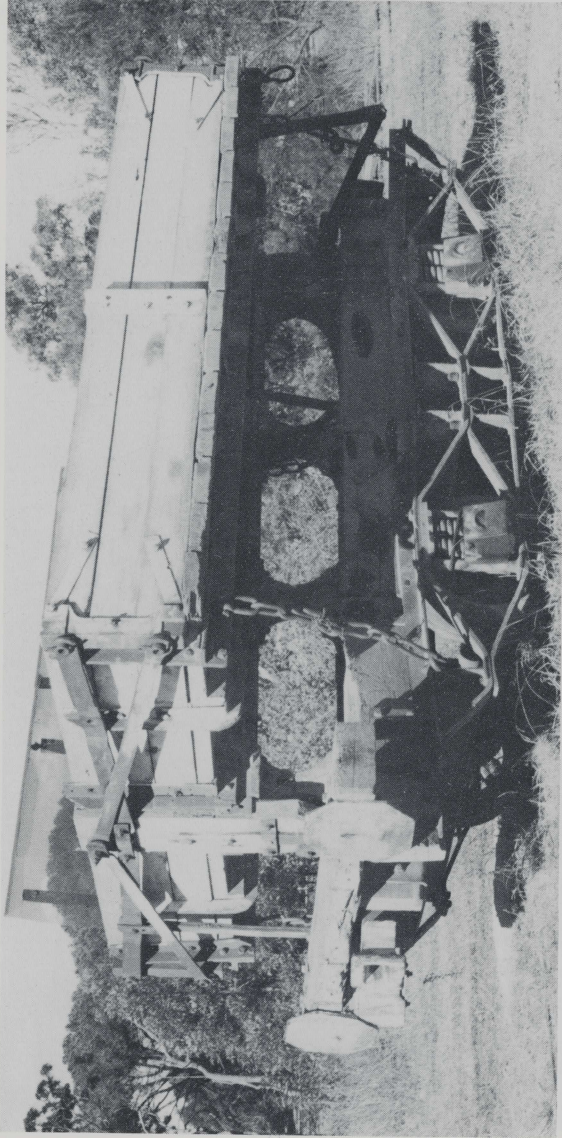
7.12 Bogie guard's van code LHG

A significant development from the 4-wheel van, the LHG van illustrates the bogie van of 1910-50 vintage. Urgent acquisition of an example is proposed.

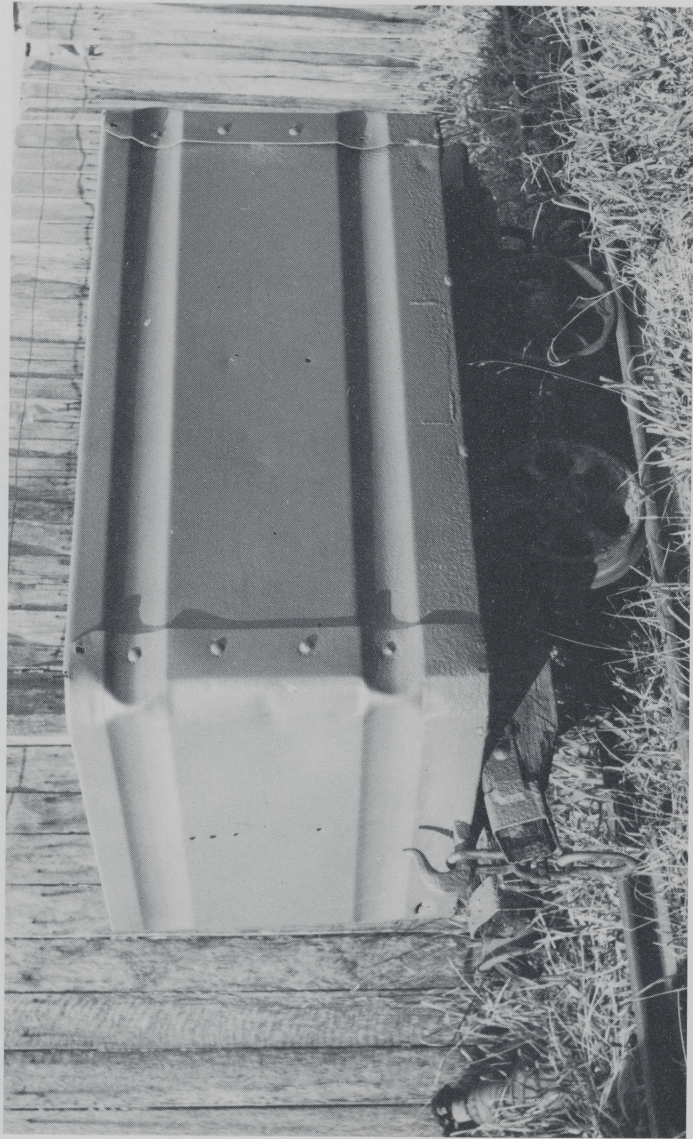


7.13 Breakdown crane and match truck L 1327/743

The Railway's service stock has always been an important part of operation, and the breakdown crane set possessed by the Museum is of historical value as well as having considerable aesthetic appeal. The validity of the claim as to the historical significance of the match truck is neither confirmed nor disputed.



7.14 **Emu Plains gravel wagon**
An example of an industrial railway's rolling stock intended for site use only is desirable to illustrate the former importance of the railway as a short distance carrier of goods. This wagon illustrates a rudimentary unloading system.



7.15 **2ft. gauge mine skip**
Narrow gauge rail transport made the movement of coal underground in substantial quantities feasible. It is recommended that the skip owned by the Museum be restored.

8. **RETENTION OF ROLLING STOCK, OR PARTS THEREOF, FOR OTHER PURPOSES**
The sub-committee has considered purposes to which other rolling stock in the possession of the Museum might be put, and lists the following recommendations:

- 8.1 **Mann-type sleeping car verandah** It is proposed that an ornate verandah might be incorporated into the entrance to a component of the Thirlmere site, e.g. entrance doorway to a refreshment room.
- 8.2 **Special purpose vehicles** It is recommended that, subject to the agreement of the section officers concerned, the following vehicles be set aside for designated purposes:
- 8.2.1 **CCA 1273 end-platform branch line carriage** Temporary visitor shelter, to be deleted when permanent facilities are provided.
- 8.2.2 **FA 1864 end platform saloon** To be used as archives store until such time as permanent accommodation provided; then to be deleted.
- 8.2.3 **KAM 508 sleeping/lounge car** To be used as on-site accommodation until no longer required; then to be deleted.
- 8.2.4 **TAM 902 sleeping car** As for 8.2.3
- 8.2.5 **MAM 907 sleeping car** As for 8.2.3
- 8.2.6 **EAM 1827 sleeping car** As for 8.2.3
- 8.2.7 **AG 1007 ex-medical officer's car** To be used as on-site administration car; then to be deleted when no longer required.
- 8.2.8 **AB 90 dining car** To be used as on-site mess accommodation until no longer required; then to be deleted.
- 8.2.9 **VHO 1816 passenger guard's van** Operational stores vehicle; to be the responsibility of the locomotive section.
- 8.2.10 **"Ned Kelly" film set vans (2)** To be used as storage vans only; to be deleted when no longer required.
- 8.2.11 **MBC 22879 storage van** As for 8.2.10
- 8.2.12 **MBC 22959 storage van** As for 8.2.10
- 8.2.13 **TRC 31927 storage van** As for 8.2.10
- 8.2.14 **S 19379 storage wagon** As for 8.2.10
- 8.2.15 **S 6542 shunting match truck** Service vehicle to be deleted when no longer required.
- 8.3. **Traffic vehicles** The following is recommended:
- 8.3.1 **AC 1 State Governor's car** See 5.1 To be preserved as static exhibit when no longer operational on Vintage Train.
- 8.3.2. **HX2/CBC3/CBC4 Vintage Train** To be used for Vintage Train workings requested by the Public Transport Commission; and for specially selected workings. To be kept stored under cover. To be retained for above use indefinitely.
- 8.3.3 **BX 1142 First Class non-corridor carriage** To be deleted at life expiry.
- 8.3.4 **LFX 1776 Second Class non-corridor carriage** As for 8.3.3
- 8.3.5 **HCX 868 Composite non-corridor brake carriage** As for 8.3.3
- 8.3.6 **HCX 1187 Composite non-corridor brake carriage** As for 8.3.3
- 8.3.7 **End-platform tourist carriages Set 10** As for 8.3.3
- 8.3.8 **End-platform tourist carriages Set 63** As for 8.3.3
- 8.3.9 **End-platform carriages Set 33B** As for 8.3.3.
- 8.3.10 **End-platform carriages Set 21** As for 8.3.3
- 8.3.11 **Bogie water gin SWT5/6 (2)** To be responsibility of locomotive section.

9. **DELETIONS**

The sub-committee recommends that the following vehicles of the Museum be either:

- i) dismantled for spares or for small exhibits.
- ii) returned to the Public Transport Commission

as being not suitable or appropriate for restoration as exhibits or for any temporary use:

- FA 177, RG 1947, AK 417, BJ 897, ACM 1725, MAL 888, WV 666, BAM 1, MCE , TFX 1939, BV 485, BSR 2031, W 640, BKG 780, KKG 1529, HKL 360, C 3045, D 4004, GT 83, DCC 1039, HFV 690, RFV 693, HCV 921, SWT 12, L 1064 (referred to Locomotive Section), South Bulli hopper wagon, CT 12, L 12, L 287, W 36, W 86, X 596, HG (2), L 240, L 177, AAH 19, FZ 909, (referred to Locomotive Section), GG (to be preserved by the Museum of Applied Arts and Sciences). The future of C 3045 and AAH 19 is conditional on future action by the P.T.C. to restore and preserve the vehicles.

With the following exceptions, the above proposed exhibit deletions have been referred to in sections 5.1 to 7.9. The exceptions are:

AK 417 Track inspection car Being a special-purpose modification from a non-corridor carriage, this vehicle is judged to have no historical significance to warrant its retention as an exhibit. It is in extremely poor condition and is devoid of internal equipment.

HKL 360 Mail/brake van As the mansard roof is featured in HS 36, as are the vertical matchboard panelling, inward and outward opening doors and the guard's compartment, it is considered that such a specialist vehicle is not necessary for the collection; detail may be depicted by photographs.

CT 12 Crane truck As sugar-cane cartage has not been a substantial-volume traffic in N.S.W., retention of this wagon, the technology of which is well known in several other wagons, is not justified.

W 86 Tubular underframe This is an example of an experimental technology which was unsuccessful, as the design was not perpetuated. As such, the item does not warrant retention as an exhibit.

X 596 6-wheel water gin This vehicle may be regarded as a locomotive appendage, outside the scope of the Rolling Stock Sub-committee. However, in its own right, this wagon does not clearly demonstrate any unique technology.

L 240 Side dump wagon This class of vehicle appears to have been confined to Departmental use, and was not generally used for revenue traffic. The principle of side-dumping is shown in the Emu Plains gravel wagon (7.14).

10. FURTHER RECOMMENDATIONS

The sub-committee is of the opinion that:

- 10.1 The sub-committee advising on rolling stock acquisition, preservation and restoration should be retained, with membership at the discretion of the present chairman subject to the approval of the Exhibits Committee or its successors, to meet at least twice yearly to review developments pertaining to rolling stock exhibits.
- 10.2 No work should be undertaken on any proposed rolling stock exhibit unless consultation has been effected with the sub-committee specifically regarding the vehicle in question.
- 10.3 No disposal of any rolling stock in the possession of the Museum, be made or offered without the sub-committee being consulted.
- 10.4 No acquisition of rolling stock, or plans for such acquisition, be effected without the sub-committee being consulted.
- 10.5 Full use be made of photographs and models to demonstrate particular features of rolling stock development.

**THE NEW SOUTH WALES
RAIL TRANSPORT MUSEUM**

**ABRIDGED SIGNAL AND
TELEGRAPH EXHIBITS REPORT**

In accordance with a request from the Exhibits Committee, the Signal and Telegraph Exhibits Sub Committee has prepared the following abridgement of the Report tabled and approved at the 26 October, 1978 Meeting of the Museum's Executive Committee.

Introduction

The full acquisitions list was prepared by considering all equipment and practices that have been used in each area of signalling development, and from this selecting those items which represent the major developments in each. It is felt that the list reflects a true and accurate picture of the engineering and operating developments.

As many of these items are very small or individually are unknown to virtually all members at this time, a summary only is provided. The full list is contained in the main report held in the Museum's Burwood office.

General Recommendations

The recommendations provide for:

- a) the Manager, Signal and Telegraph Exhibits to be responsible for the selection of the actual exhibits, as listed, their collection and transport to Thirlmere.
- b) the Museum's Signal and Telegraph Exhibits Sub-Committee is solely responsible for the conservation and restoration of all exhibits in its care, and the design, construction, commissioning, maintenance and operation of all Signal and Telegraph Exhibit Displays in the Museum.
- c) that all equipment will, where possible, be returned to operating condition so that maximum visitor education may be achieved.

Major Exhibits Listed for Acquisition

- 1. Signal Boxes:
 - i) Metford
 - ii) Concrete Unit type
 - iii) Relay Hut Unit type
- 2. Interlocking Machines:
 - i) a selection of interlocking machines that provide a balanced picture of the major developments in this field. The selection is to include cam and soldier, tappet, power/mechanical and relay locking methods.
 - ii) also included is a selection of levers for operating various point functions not controlled from main interlocking machines.
 - iii) selection of equipment used to provide additional protection for points, and point motors for power operated switches.
- 3. Signals: a range of signals to demonstrate the various indications covering lower and upper quadrant and colour light forms and aspects.
- 4. Level Crossing Equipment: this covers a small selection of level crossing gates and warning devices.
- 5. Safeworking Instruments: the major instruments for block telegraph, staff and ticket, electric staff and electric tablet working will be obtained for display.
- 6. Miscellaneous Items: a range of equipment to cover such fields as track circuitry, telephones and telegraphs, train describers and platform indicators, lamps and instruction plates.

R. T. Taaffe

Convener

