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# DIESEL LOCOMOTIVE A60



A60 in Shed at Seymour Railway Heritage Centre



A60 Donnybrook 2007

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## Location

VICTORIA STREET SEYMOUR, MITCHELL SHIRE

## Municipality

MITCHELL SHIRE

## Level of significance

Registered

## Victorian Heritage Register (VHR) Number

H2408

## VHR Registration

April 15, 2021

## Heritage Listing

Victorian Heritage Register

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## Statement of Significance

Last updated on - June 2, 2021

# What is significant?

Diesel Locomotive A60 is a diesel-electric railway locomotive measuring ca.18.70 metres long and weighing ca.113.2 tonnes. The locomotive, which entered service as B60 in 1952 and was named Harold W Clapp, underwent conversion to A60 in 1984 and is now known as Sir Harold Clapp. The locomotive generally retains its original body and external shape and appearance.

## How is it significant?

Diesel Locomotive A60 is of historical significance to the State of Victoria. It satisfies the following criterion for inclusion in the Victorian Heritage Register:

Criterion A: Importance to the course, or pattern, of Victoria's cultural history.

Criterion H: Special association with the life or works of a person, or group of persons, of importance in Victoria's history.

## Why is it significant?

Diesel Locomotive A60 is historically significant for its association with the modernisation and dieselisation of the Victorian Railways. The diesel locomotives purchased following World War II rapidly replaced steam powered locomotives and revolutionised rail transport in Victoria by substantially increasing the efficiency and economics of passenger and freight transport throughout the whole state. Diesel Locomotive A60 in its B60 format was the first mainline diesel locomotive to operate in Victoria and its rebuild as A60 ensured its continued operation. [Criterion A]

Diesel Locomotive A60 is historically significant because of its association with the Victorian Railways' Operation Phoenix and New Deal for Country Passengers programs. In the 1950s, as part of Victoria's post war recovery, the extensive Operation Phoenix program revived the badly neglected Victorian Railways system and provided much needed improvements to passenger and freight services. The 1980s New Deal for Country Passengers revolutionised the provision of country passenger railway services in Victoria and increased patronage at a time when there were proposals to cease country passenger services. Powerful diesel locomotives were an important aspect of both these programs. [Criterion A]

Diesel Locomotive A60 is historically significant because in its original B60 format it was the flagship of the Victorian Railways for thirty years from the 1950s. It was used in advertising and events to promote the modernisation of the railway system, for example a model of the locomotive appeared in the Moomba parade in 1955. It initially hauled new long-distance trains such as The Overland express and the Spirit of Progress as well as the Royal Train when Queen Elizabeth II visited Australia in 1954. [Criterion A]

Diesel Locomotive A60 is historically significant for its association with former Victorian Railways Commissioner Harold Clapp. In its B60 format the locomotive was named Harold W. Clapp in recognition of his substantial contribution to the development and enhancement of the Victorian Railways and improved conditions for passengers, staff and rail freight users. His work ensured that railways remain important to Victoria today. Diesel Locomotive A60 was one of the important outcomes of Clapp's work to improve and modernise Victorian locomotives. [Criterion H]

## Permit Exemptions

## General Exemptions:

General exemptions apply to all places and objects included in the Victorian Heritage Register (VHR). General exemptions have been designed to allow everyday activities, maintenance and changes to your property, which don't harm its cultural heritage significance, to proceed without the need to obtain approvals under the Heritage Act 2017.

**Places of worship:** In some circumstances, you can alter a place of worship to accommodate religious practices without a permit, but you must **notify** the Executive Director of Heritage Victoria before you start the works or activities at least 20 business days before the works or activities are to commence.

**Subdivision/consolidation:** Permit exemptions exist for some subdivisions and consolidations. If the subdivision or consolidation is in accordance with a planning permit granted under Part 4 of the *Planning and Environment Act 1987* and the application for the planning permit was referred to the Executive Director of Heritage Victoria as a determining referral authority, a permit is not required.

Specific exemptions may also apply to your registered place or object. If applicable, these are listed below. Specific exemptions are tailored to the conservation and management needs of an individual registered place or object and set out works and activities that are exempt from the requirements of a permit. Specific exemptions prevail if they conflict with general exemptions.

Find out more about heritage permit exemptions [here](#).

## Specific Exemptions:

The following categories of works or activities (permit exemptions) do not require a permit from Heritage Victoria. They are considered not to cause harm to the cultural heritage significance of Diesel Locomotive A60.

### General

- Minor repairs and maintenance which replaces like with like. Repairs and maintenance must maximise protection and retention of significant fabric and include the conservation of existing details or elements. Any repairs and maintenance must not exacerbate the decay of fabric due to chemical incompatibility of new materials, obscure fabric or limit access to such fabric for future maintenance.
- Works or activities, including emergency stabilisation, necessary to secure safety in an emergency where a structure or part of a structure has been irreparably damaged or destabilised and poses a safety risk to its users or the public. The Executive Director, Heritage Victoria, must be notified within seven days of the commencement of these works or activities.
- Cleaning including the removal of surface deposits by the use of low-pressure water (to maximum of 300 psi at the surface being cleaned) and neutral detergents and mild brushing and scrubbing with plastic (not wire) brushes.

### Maintenance, Overhaul and Repair

- Replacement of all mechanical, electrical and other equipment with equivalent GM EMD (General Motors Electro-Motive Division) new, original or reconditioned equipment in order to maintain Diesel Locomotive A60 in operating condition and continue the Victorian Railways tradition of repair. Any equipment original to the 1984 era or earlier removed under this permit exemption must be stored and the location recorded so that it could be reinstated in the future.
- Repairs and replacement of lubrication or brake systems provided that any visual impacts are minimised. Any equipment original to the 1984 era or earlier removed under this permit exemption must be stored and the location recorded so that it could be reinstated in the future.

### Gauge Conversion & Bogies

- Conversion between Standard Gauge (1435mm) and Broad Gauge (1600mm) as required by use of Pattern 1 or Pattern 2 flexi-coil bogies as used under B, S, X and A class locomotives of the Victorian Railways / V/Line.

## Locomotive Cabs

- Installation of fridge, microwave and toilet within the nose void space forward of the locomotive cab.
- Installation of new radio equipment on top of the driver's console to replace existing radio equipment in the same location.

## Appearance

- External repainting of A60 in its current colour scheme, or a previous colour scheme in which it had appeared in its working lifetime as a B-class or A-class locomotive, provided that preparation or painting does not remove all evidence of earlier paint finishes or schemes. Where possible, original finishes should be retained, and new finishes applied over them.
- Repainting of previously painted internal surfaces in the same colour, finish and product type provided that preparation or painting does not remove all evidence of earlier paint finishes or schemes. Where possible, original finishes should be retained, and new finishes applied over them.
- Temporary cosmetic changes to the external appearance of the locomotive provided that these are fully reversible without change to the original fabric of the locomotive.

## Operational Use

- The locomotive is a Victorian asset owned by VicTrack and currently (2020) leased to Seymour Railway Heritage Centre (SRHC) who may sub-lease it to other operators. If it is operated outside Victoria any loan agreement must include a requirement to abide by the conditions of this registration.
- The locomotive can be used throughout the Victorian network. It may leave Victoria for up to two weeks at any one time providing that it then returns to Victoria.

## Theme

### 3. Connecting Victorians by transport and communications

Construction dates	1950,
Heritage Act Categories	Registered object,
Other Names	A60 LOCOMOTIVE, LOCOMOTIVE,
Hermes Number	201914
Property Number	

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## History

## Background

The Victorian Railways (VR) was the state-owned operator of most rail transport in Victoria from 1859 to 1983. Throughout its existence the VR sought to increase the efficiency and speed of its locomotives as well as to find cheaper sources of power. Initially the VR used coal fired steam locomotives to pull passenger and freight trains. Following WWII, the rising cost and shortages of coal, the poor condition of many of VR's steam locomotives and the need for trains to travel long distances, made it imperative that new locomotives be purchased. The VR had planned to buy diesel-electric locomotives in 1937 and 1948 but these purchases did not proceed.

## Harold Clapp

Harold W. Clapp (1875-1952) was Chairman of Commissioners of the VR from 1920 to 1939 and was an efficient, energetic and visionary administrator who engaged in a wide range of activities aimed at increasing usage of the railways<sup>[1]</sup>. Clapp introduced many technical and other reforms including the completion of the electrification of the suburban lines, expansion of the network, track improvements which made trains run more

smoothly, redesign of locomotives and upgrading timetables. He also ensured that VR stayed up to date with the latest locomotive technologies being developed overseas by sending VR engineers to the USA and Europe. His successors continued this tradition. Clapp instigated the upgrade of the Sydney Limited service into the steam powered, all-steel, all-air-conditioned, non-stop, high-speed express Streamliner, *Spirit of Progress*.

Clapp also improved both customer amenities and the welfare of railway workers. Under his tenure VR had its own butchery, bakery, laundry, creche and poultry farm, and ran kiosks selling books and tobacco at city stations. He completely revised railway storekeeping methods and improved dining car facilities. Clapp energetically promoted rail tourism within Victoria with advertising campaigns and special trains going to the zoo, Royal Show, regional towns and to the VR owned Mt Buffalo Chalet. Clapp left the VR in 1939. In 1952, a few months before his death, he rode in the cabin of Diesel Locomotive B60, Victoria's first diesel-electric locomotive, which was named after him.

## Operation Phoenix

In 1949 the Victorian Transport Minister, Wilfred Hughes commissioned a report on the condition of the VR. The report commended VR management and staff, but found that the locomotives, rolling stock and track were all in very poor condition due to lack of maintenance and high traffic during World War II. The report predicted a *final breakdown of rail transport* after ten years. At the same time the VR commissioners had prepared a plan known as *Operation Phoenix* to revive the railways and purchase new rolling stock, partially in response to public complaints about overcrowding and poor reliability.

In 1950 VR ordered twenty-six USA General Motors' (GM) Electro-Motive Division (EMD) diesel locomotives made under licence by Sydney based manufacturer Clyde Engineering (CE). The VR designated them as 'B-class'. In 1953 B-class diesels began hauling the *Spirit of Progress* (Melbourne to Albury) replacing the 1937 streamlined steam locomotives. Eighteen, more powerful EMD diesel-electric locomotives were purchased between 1957 and 1961. These single cab locomotives were built by CE and known as S-class. These replaced the B-class locomotives on the *Spirit of Progress*. The B-class continued to cover most other long distance runs in Victoria.

CE in NSW made the B-class locomotive underframes and bodies under licence from EMD. CE and Bradford Kendall manufactured the bogies. General maintenance of the locomotives was done by VR staff at its Depot at Dynon Road, North Melbourne.

## Body design of B-class locomotives

The body shape of the A60 locomotive is known as a *Streamliner* because it has a smooth and aerodynamic shape. Many streamlined vehicles including aircraft, cars, railroad locomotives and ships were created during the emergence of the *Streamlined Moderne* style in the 1930s. Streamliner locomotives were competing for patronage with planes and motor cars and were designed to give the public the impression that the new trains were modern and fast and would provide a luxurious and glamorous travelling experience. The streamlined effect was created by covering as many of the working parts as possible. The first Streamliners on Victorian Railways and in Australia were the four steam locomotives modified as directed by Harold Clapp in 1937 for the *Spirit of Progress*. All these were scrapped by 1954 but are remembered for their distinctive and elegant design.

In the USA, General Motors (GM) Electro-Motive Division (EMD) who were to become world leaders in diesel locomotive technology, introduced the streamlined E and F-series of diesel locomotives which proved to be extremely successful<sup>[2]</sup>. The E-series were made from 1937 to 1964 and the F-series ('F' for 'Freight') were made from 1939 to 1960<sup>[3]</sup>. These locomotives were characterised by a rounded *bulldog nose* and internal covered walkways. The design used less metal than earlier streamlined trains, making them cheaper to manufacture and ensuring that maintenance such as cleaning windscreens was easier. However, the bulldog nose was still bulky enough to protect drivers in the event of an accident. The view from the front was good but it was difficult for the driver to look back over the train.

The body of VR's B-class and later S-class locomotives was based on the EMD F7 version of the F-series locomotive and made in Australia at Clyde Engineering under licence from EMD. In comparison to American

locomotives, Australian locomotives had a smaller loading gauge (maximum height and width to allow them to pass through tunnels and under bridges). This meant that the American F7 body had to be stretched and lowered; the radiators were moved from the roof to the side of the loco and all of the ancillary equipment was relocated within the engine room. VR also wanted the locomotive to be double ended (a driver's cabin at each end) to allow quick turnarounds at destinations. The EMD F7 bulldog nose, covered components and overall design was retained. The B-class and A-class locomotive body is the result of all these modifications.

## Mechanical design of B-class diesel-electric locomotives

VR engineers Andrew Ahlston and later George Brown as well as CE staff Fred Shea and George Lee (both formerly of VR) worked closely with EMD on the development of the locomotives[4]. They demanded major changes to EMD's F7 design to suit Victorian management, climate and track conditions. Unlike American locomotives, Australian locomotives had a smaller axle load (total weight bearing on the track for all the wheels connected to a given axle) because Australian track was lighter than that in the USA.

A bogie is the structure underneath the locomotive to which wheel axles are attached. The original EMD locomotives had two axles (four wheels) per bogie which led to axle loads which were too heavy for Victorian track. VR and CE engineers eventually convinced a reluctant EMD to change their bogie design to a three-axle bogie (six wheels) with all axles powered. The extra length of the Victorian body and the use of three-axle bogies instead of two-axle bogies made it possible to lower the axle load to suit Victorian track[5]. EMD named the new bogie the *Flexicoil Bogie* and, after realising its advantages, went on to use it for locomotives sold to many other countries as well as in the USA. Flexicoil bogies were later used for VR S-class and X-class locomotives and were retained when B-class locomotives were re-built to A-class.

Another requirement of the VR engineers was interchangeability so that faulty components could be quickly exchanged when repairs were needed so that the trains could continue to run. The faulty equipment was repaired and installed in the next train as needed. VR also held spares of all items including body components. The innovative B-class locomotive design revolutionised rail transport in Victoria by creating locomotives that were more reliable, faster, cheaper and more efficient to run than steam locomotives.

## B60 diesel locomotive

A60 Diesel Locomotive was originally a B-class locomotive. It was the first B-class diesel locomotive made and was numbered B60. It was delivered on 14 July 1952 painted in the VR blue and gold livery. When B60 arrived at Spencer Street Station it was greeted by a large crowd eager to see the new engine. On 15 July 1952, B60 was formally dedicated by the Premier of Victoria and Minister of Transport. It was named *Harold W. Clapp* and was the last locomotive Clapp climbed into before his death two months later. B60 went on public display at Spencer Street Station attracting a crowd of up to 23,000 people.

B60 (coupled to B63) was the first diesel locomotive to haul the *The Overland* express (Melbourne to Adelaide) in October 1952. B60 became the flagship of VR and was used to advertise the modernisation of the railway system and to celebrate anniversaries, for example 100 years of the Victorian Railways in 1954 and 10 years of dieselisation in 1962. In 1954 B60 (coupled to B85), hauled a Royal Tour Train carrying HRH Queen Elizabeth II and the Duke of Edinburgh. By 1962 B60 had travelled one and a half million miles. In 1975 B60 was temporarily transferred from Victorian broad-gauge bogies to NSW Standard Gauge bogies so that it could haul the *Spirit of Progress* from Albury to Melbourne on 7 May to celebrate 100 years since the birth of Harold Clapp. It was then returned to broad gauge.

## The New Deal for Country Passengers

By the late 1970s VR were suffering serious financial losses and there were safety concerns relating to years of poor maintenance. The 1980 Victorian Transport Study also known as the *Lonie Report* had recommended the abolition of almost all country rail services. This led to public protests. After much debate, the government decided to fund the *New Deal for Country Passengers* which was intended to fully reconfigure country timetables, services, locomotives and rolling stock. The improvements to locomotives as part of the *New Deal* included the



conversion of the 1950s B-class and T-class locomotives to A-class and P-class respectively and the purchase of new G-class and N-class diesel locomotives. The *New Deal* cost ca.\$100 million and led to an increase in passenger traffic of 20% and a considerable reduction in operating costs.

## Conversion of B-class to A-class locomotives

The *New Deal for Country Passengers* included funding to pay CE to substantially upgrade all 26 B-class locomotives because this was thought to be cheaper than buying new locomotives. This work began in 1981. The equipment used to upgrade the locomotives from B-class to A-class was made by EMD in the USA and installed by CE. The A-class conversions proved to be of limited success due to fatigue cracking in the frames and the unanticipated complexity and high cost of the conversions. In addition, there was not enough space in the B-class locomotive body to add an additional diesel generator power plant for air conditioning and lighting in the passenger carriages. Because of all these problems, VR cancelled the contract with CE in 1985 after it had converted 11 of the 26 B-class to A-class; and instead purchased 25 new non-streamlined N-class passenger diesel locomotives from CE. The N-class locomotives were more powerful and included generators to power the air-conditioning and lighting in the carriages. Parts intended for the A-class conversion were used for the N-class locomotives.

## A60 diesel locomotive

Diesel Locomotive B60 was rebuilt at Clyde Engineering's Rosewater, South Australia plant from February 1983 to September 1984. By the time of its conversion it had travelled ca. five and a half million km. Most of the rebuilding of B-class locomotives to A-class took ca. 12 months but B60 took longer to be rebuilt than the average because of major structural issues caused by past accidents. A60 re-entered service in 1984 and was renamed *Sir Harold Clapp* in a ceremony at Spencer St station in May 1985 attended by Harold Clapp Junior. It stayed in service hauling freight and passengers until 2013. During this time, it was owned by VLine then VicTrack and was transferred to the Seymour Railway Heritage Centre in 2020.

[1] (Adam-Smith, 1981)[2] (Wilson, 2009)[3] (Walters, 2011)[4] (Birmingham, 1982)[5] (Train Hobby Publications Australia, 2001)

## Extent of Registration

Heritage Act 2017 NOTICE OF REGISTRATION As Executive Director for the purpose of the Heritage Act 2017, I give notice under section 53 that the Victorian Heritage Register is amended by adding a place in the Heritage Register: Number: H2408 Category: Registered Object Place: Diesel Locomotive A60 Location: Footscray Road, West Melbourne Municipality: Melbourne City All of the object known as Diesel Locomotive A60, currently located at the Seymour Railway Heritage Centre at Victoria St, Seymour VIC 3660 15 April 2021 STEVEN AVERY Executive Director

*This place/object may be included in the Victorian Heritage Register pursuant to the Heritage Act 2017. Check the Victorian Heritage Database, selecting 'Heritage Victoria' as the place source.*

For further details about Heritage Overlay places, contact the relevant local council or go to Planning Schemes Online <http://planningschemes.dpcd.vic.gov.au/>