MCDONALDS ROAD FORMER RAILWAY BRIDGE

Location

75 MCDONALDS ROAD KAWARREN, COLAC OTWAY SHIRE

Municipality

COLAC OTWAY SHIRE

Level of significance

Heritage Inventory Site

Heritage Inventory (HI) Number

H7621-0029

Heritage Listing

Victorian Heritage Inventory

Interpretation of Site	Fifteen bridges were constructed along the entire length of the Colac-Beech Forest-Crowes line. Houghton notes that earth filled embankments were preferred on economic and maintenance grounds, with timber bridges being only used in wet areas and over the more 'substantial watercourses and very steep gullies' (Houghton 2012:14). The bridges were built to a standard VR narrow gauge design and were constructed from Northern Victorian and Gippsland timber. Although originally built from local timber, this was eventually found to be too soft and other timber was employed. The use of timber bridges was confined to the wettest areas, the steepest gullies and more substantial watercourses where earth fill was a liability. With the closure of the railway, the formation and land was opened up to be purchased by adjoining landowners.
Historical Significance	The timber bridge is of historic importance through its association with the Colac-Beech Forest- Crowes railway line that contributed to the settlement of the Otway region.

Archaeological Significance	Medium potential to contain archaeological deposits.
Hermes Number	194686
Property Number	

History

Promoting settlement in the Otway Ranges

A series ofland acrs were passed in the 1860s in an attempt to create small farm holdings, whilsr ar the same time recognising the pioneering efforts of rhe squatters. Under the first land act, the 1860 Land Sales Acr, three million acres were surveyed into allotments of between 80 to 640 acres. No person could select more than 640 acres annually, and the land had to be paid for outright, Dr half paid and half leased. Subsequently more land was made available for selecrion under the Land Acr (1862) and the 1865 Amendment Act. Then in 1869, most land - including unsurveyed land - became available for selection under the Land Act. (Sheehan, 2003: 19)

The Otway Ranges, in south wesr Victoria, were firsr opened to agricultural selection in 1884, under rhe *LandAct* 1884, when allotmenrs were selecred from pre survey maps prepared by the Lands Department (Minchinton 2011:2). Wirhin ten years more than 200 allotments had been raken up (Houghton 2005: I).

Yet it wasn'r until the arrival of the railway, during the 1870s, thar Victoria's isolared south wesrern region was considered penetrable. Until this rime, the Otway Ranges were virtually impassable and as such, were oflirrle economic value. The introduction of the railway provided the firsr all weather, fast and reliable transport service into the area, which as Houghton noted was 'characrerised by dense rimber and high rainfall' (Houghron 2003:5).

Narrow gauge railways

The role of the Colonial government in surveying the area in 1884 and 1889 was instrumental in the change from the design of a broad gauge to a narrow gauge railway, with the resulting decrease in *cost.* Although initially againsr the policy of the Victorian Railways, narrow gauge railways were eventually recommended for

sparsely settled disrricts including Beech Forest (1902), Gembrook (1900) and Whitfield (1899) and Walhalla (1910), were eventually builr as narrow gauge lines. The fourth line, initially recommended as narrow gauge was builr as a broad gauge line at Warburton. The Beech Foresr line, is therefore not the earliesr nor the latest, but constructed at the peak of construction in rhe sparsely setrled ateas.

During the 1890s pressure rose ro find the means to construcr cheap railways to the underdeveloped parts of Victoria, as the government realised that the cosr of providing communications ro the ourlying communities by means of railways was excessive for the small popularions served. In 1894 the Parliamentary Sranding Committee on Railways considered rhe use of narrow gauge railways. The idea was opposed by the Victorian Railways (VR) in that ir would introduce a non-srandard operating regime, which would without doubr incur extra costs, especially when stock had to be transferred between the two gauges.

In 1895 the Commirree recommended that narrow gauge lines be only introduced in sparsely setrled areas. The first of the four narrow gauge lines, between Wangararra and Whitfield opened in March 1899. lr was followed by rhe Upper Ferntree Gully to Gembrook line in December 1900, the Colac ro Beech Forest line in March 1902 and rhe Moe to Walhalla in May 1910. The Colac to Beech Forest line was exrended to Crowes inJune 1911 (see Houghton 2003:6 and Thompson 2004:2).

An initial broad gauge line from Colac ro the top of the Otway Ridge had been construcred in 1884 bur ir was abandoned due to the high cost in laying rhe broad gauge, especially in such difficult terrain. The construction of the narrow gauge railway was delayed until 1900 when the initial section between Colac to Beech Forest was developed. It was completed by March 1902, by which time some 44.7km ofline had been laid. The line was extended to Crowes, some 22.5km west of Beech Forest from 1909-1911. Not only did the narrow gauge railways open up of these isolated communities, they too provided a vital service for pioneer settlers, allowing food produce and people to cravel into and out of the region. The ColacBeech Forest-Crowes railway was an immediate success providing access to the forests. With this, timber could be harvested and sent out as 'palings, mining props and laths, charcoal, sleepers, posts, piles, barrel staves, furnirure and carriage timbers and sawn timber for building purposes' (Houghton 2012:21).

Yet despite the use of these lines and the communities they served, the narrow gauge lines generally suffered heavy financial losses throughour their lifetimes and were closed as soon as conveniently possible (see Anchen 2012:3).

Linking the Otway's by rail

The topography of the Otway's required the design of the railway formation to be a complex affuir, with a climb of over 400m, traversing east-west flowing creeks on a north- sourh aspect and several drops into valleys. Designing the engineering solutions was challenging, with th guiding principle of minimizing earthworks in order to save cost. Wherever possible the roure was lid over narural surface with a low earthern mound and an occasional slight cut into the high side. This is typical of the section from Colac to Elliminyt.

Other sections required the construction aflaw embankments to maintain an even bed in undulating terrain or to gain elevation to a hilltop or spur. Steep sided narrow box -cuttings are characteristic of the sections ITom near Elliminyt to Barongarook, Birnam to Gellibrand and southwards from Gellibrand for several kilometres.

The steeper terrain posed futther engineering problems where the embankments and cuttings were higher and there is the use of 'borrow pits' and culverts. The - cuttings and embankments were formed with curves, following the outward face of the slope. Cuttings and embankments were generally of a shorr length apart from at the head of the Ten Mile where the long cuttings stand out. The design of the formation was adapted along its length to suit the nature of the terrain through the height, slope, batter and location of the cuttings and embankments, enabling the line to pass through the challenging countty.

The formation was used as an important transport corridor for the people and industries of the West Otway Ranges at a time when road transport was primitive. The railway served the area economically for sixty years, carrying freight in and out, panicularly as outwards loading of bulk commodities that provided the bulk of the revenue derived from the line. The function of the railway was also to act as a transport conduit for the wider region with railheads connecting with road transport to the coast on the other side of the Otway Ranges.

Construction took place in two periods of activity with the inirial48 kilometres from Colac to Beech Forest between 1900 and 1902, followed by a further 22.5

kilometres to Crowes between 1909-1911. The railway was an immediate stimulus to the development of the region through providing fast, convenient and all weather access to the region. Fifteen bridges were constructed along the entire length of the Colac-Beech Forest-Crowes line. Houghton notes that earth filled embankments were preferred on economic and maintenance grounds, with timber bridges being only used in wet areas and over the more 'substantial watercourses and very steep gullies' (Houghton 2012: 14).

The bridges were built to a standard VR narrow gauge design and were constructed from Northern Victorian and Gippsland timber. Although originally built from local timber, this was eventually found to be toO soft and other timber was employed. The use of timber bridges was confined to the wettest areas, the steepest gullies and more substantial watercourses where earth fill was a liabiliry. Bridges were constructed of timber from northern Victoria, the local hardwood proving to be toO soft in comparison. Bridges were built to a standard Victorian Railways design for narrow gauge lines.

The line has, throughout its life had numerous changes brought about through floods, bushfires, washaways and earth-slips. Natural disasters have taken their toll on the infrastructure. Cuttings and embankments have had to be CUt back or modified in response to damage, and buildings, stations and sidings needed constant maintenance and some replacement. Generally the modifications were carried out with similar materials and methods to the original construction.

Building the formation

The Colac-Beech Forest-Crowes railway was a narrow gauge mountain railway that was designed to secure communication between the broad gauge rail network at Colac and Beech Forest, and was specifically designed for rugged terrain. The earthworks, consisting of cuttings and embankments were designed to create an evenly graded bed that allowed for a gentle progression up and down the steep terrain through which it travelled.

Houghton notes that the Colac-Beech Forest-Crowes line was 'not a simple liner one on a constant rising grade because the intervening topography has several eastwest flowing watercourses whose valleys had to be negotiated on a north-south axis. This entailed a climb from Colac to the divide between Barongarook Creek and Boundary Creek before dropping into the Boundary Creek valley, then another

climb into the Ten Mile Creek valley and a drop into the Loves Creek valley and subsequent continuation to the floor of the Gellibrand River valley at 75 metres above sea level. From Gellibrand the climb to Beech Forest entailed a vertical rise of 457 metres over 19km along the face of a long rising spur to the main Otway Ridge' (Houghton 2005:10).

The variery of topography meant that the railway engineers constructed the rail route with the minimum amount of earthworks and where possible the roure was laid onto the natutal surface, with sleepers resting on sand/gravel/cindet ballast at 150mm deep.

Low embankmenrs were built to maintain an even track bed in undulating terrain or [0 gain elevation, where as more extensive earthworks were created in the 'true mountain sections of the route such as the head of the Ten Mile Creek to Birnanl section' (Houghron 2005: 12). Larger embankments had concrete culverts under them, which allowed water flow.

Extraordinary engineeting feats were undertaken at the mountain sections of the rail line, where roadbeds were built on the 'extremiry of the outer edge of the /acing slope to minimise deep earthworks' (Houghton 2005: 12). This meant that the line had many tight curves, following the contours of the natural environment. Over the length of the line, cutrings and embankments were generally short, with the cutting walls having a sloping batter. Vertical batters were uncommon, as they were prone to slippage.

Standard VR wooden portable or standard corrugated iron passenger shelters were located along the length of the Colac-Beech Forest-Crowes line. The installation of these differed to those of the broad gauge, in that they were placed on the surface, without raised platforms. Houghton notes that goods sheds were 'more solidly built on site and there were platform types of timber or corrugated iron' (see Houghton 2005:13 and Houghton 2012:15).

Operating a train service

Other infrastructure included ramped platforms for the moving of farm machinety (at Weeaproinah and Wyelangta) and cranes for the timber trade (these were rare but were.provided at Beech Forest and Wyelangta).

Stations were built without raised platforms and were of a standard Victorian Railways portable type. Smaller stations were simply corrugated iron shelter sheds

and staff housing was provided also to standard design at Barongarook, Banool, Wimba, Weeaproinah, Lavers Hill, Wyelangta. Gellibrand" Crowes and Beech Forest.

The servicing of the locomotives and the line meant that fixtures and other infrastructure were developed long its length, these included water points, coal storage, signals, distance markers, stopping places and a telephone line. Water points were located at Barongarook, Gellibrand, Wi mba, Oinmont, Beech Forest, Kincaid and Crowes, and these comprised weirs or pumps, concrete reservoirs, piping and elevated banks. Further infrastructure included loco sheds, located at Beech Forest and a coal storage, locatec! at Beech Forest *(see* Houghton 2005: 13 and Houghton 2012:25).

The service needs of the locomotives required substantial fixtures including water points at Barongarook. Gellibtand, Wimba, Oinmont, Beech Forest, Kincaid, and Crowes. Watering points required [he weirs or pumps, reservoirs, piping and elevated tanks. Much of this infrastrucrure is no longer evident. Concrete posts provided distance markers and communication via telephone along the full length of the line. A coal stage was provided at Beech Forest.

Mile posts, or distance markers, were placed along the entire length of the railway. These were constructed from concrete and painted white with black numbering. A telephone line travelled the length of the line, so that there was communication from the Colac Station Master's office all the way to Crowes. The line was carried on wooden or iron poles and was set to the side of the track. Stopping places were only marked by name boards and have no obvious remains.