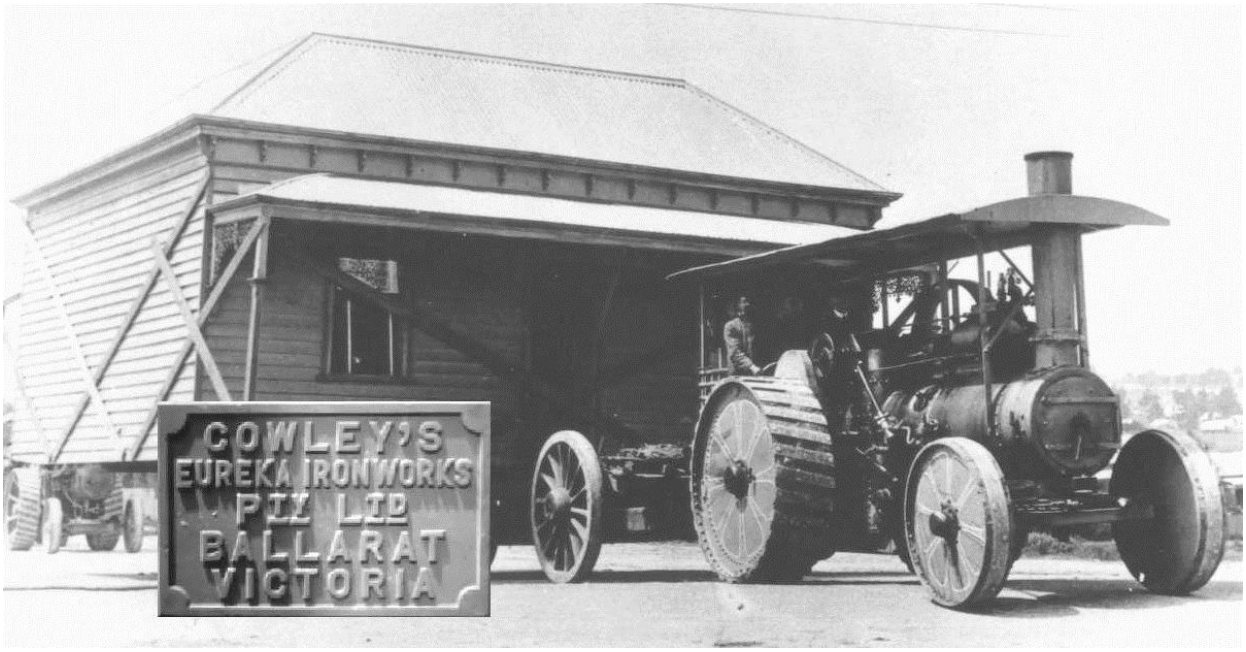
MUSEUMVICTORIA

Cowley steam traction



Cowley's Eureka Ironworks steam traction engine moving a house for J. Barlow & Sons, of Ballarat, about 1918.
Insert: Detail of manufacturer's name plate on steam chest.

The Cowley Steam Traction Engine is one of the most significant surviving artefacts of Australia's steam age, providing an important link to Victoria's early engineering heritage. Built at Ballarat in 1916, it was the last steam traction engine made in Australia and incorporates several significant local design innovations. Today the engine is one of only two surviving Australian-built traction engines and the only one restored to working order.

Cowley's Eureka Ironworks

The firm that became Cowley's Eureka Ironworks was founded by Joseph Edward Cowley and Nicholas Robinson, as a small boiler yard in Yuille Street, Ballarat West, in 1882. Initially concentrating on the repair and manufacture of steam boilers for local goldmines, they later diversified into related products like riveted iron bridge girders, water tanks and locomotive turntables for the Victorian Railways.

By 1891, Joseph Cowley was sole proprietor and had moved the business to Rodier Street, Ballarat East, opposite the site of the Eureka Stockade where the infamous miners' uprising took place in 1854. It was at this site that the name 'Eureka Iron Works' was first adopted.

By 1901, Cowley products were being shipped to customers throughout Australia and the firm had produced its 500th boiler. In June 1909, the firm took another step forward winning a contract to build an 8 horsepower double cylinder traction engine for the Victorian Government to a unique four-wheel-drive design patented by the Victorian farmer and inventor, Thomas Quinlivan. Although the Quinlivan engine was completed by a Melbourne firm after Joseph Cowley died in January 1910, the business continued, being acquired by Morgan Bevan John, proprietor of the Ballarat Brass Foundry, who operated it under the title Cowley's Eureka Ironworks Pty Ltd.

In 1916 Cowley's built one further traction engine, this time to a more conventional design, though it incorporated two distinctive features from the earlier engine - the enclosed road wheels (originally intended to be used as auxiliary water tanks) and a flat-topped Belpaire-style firebox with rivetless forge-welded vertical seams, representing a superb example of the boilermaker's art. Later Cowley's went on to build a dozen steam rollers

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(including one now held by Museum Victoria) and a range of other products from steel pipes to tar vats, small petrol engines, petrol bowsers and garage hoists. The business closed in 1969, but their former factory is still used today by another engineering firm.

Working History

The working life of the second Cowley traction engine began with the well-known Ballarat cartage contractors, John Barlow & Son, who employed several traction engines for hauling mining machinery and moving timber houses.

In 1919 the engine was purchased by Thomas Murtagh, of Coleraine, and driven all the way from Ballarat to the western district of Victoria, to be used for contract chaff-cutting and threshing. Later in the 1920s it spent time carting logs to a sawmill at Balmoral, just west of the Grampian Ranges. By the late 1930s, the engine had found its way to Mount Gambier in South Australia where it drove a pine box-making mill during the Second World War. Donald Gregory of Yahl was the last owner to work the engine commercially using it during the 1950s for driving a chaff-cutter and pulling out pine trees and boxthorn hedges with the powerful winch.

After over a decade lying neglected in a paddock, the engine was sold to a collector and later returned to Victoria, before being acquired for preservation by the Museum of Victoria in 1985.

Restoration

Because of the poor state of the engine, restoration proved to be a complex and challenging project extending over 14 years, involving 16 staff and 21 volunteers in some 10,000 hours of paid work and 6,000 hours of voluntary time.

Restoration commenced in 1988 with complete dismantling of the engine, followed by the fabrication of a new steel boiler by Lake Goldsmith Steam & General Engineering.

In 1993, work moved back to the Museum's own engineering workshop at Scienceworks. Later major tasks included riveting a new tender; recasting and machining new bearings and several gears; forging and machining a new crankshaft; and reconstruction of the canopy based on old photographs and a few fragments of the original roof timbers.

Museum Victoria technical officer, Jeremy Johnstone and volunteers fitting balance weights to the new Cowley traction engine crankshaft, 1997.

Technical Specifications

Manufacturer: Cowley's Eureka Ironworks Pty Ltd, Ballarat East, Victoria

Engine Type: single-cylinder overtype two-speed steam traction engine

Date Built: 1916 (re-boilered 1989)

Bore: 8 inches (203 mm)

Stroke: 12 inches (305 mm)

Flywheel: 4 ft 6 in diameter (1393 mm)

Nominal Horsepower: 6 NHP

Actual Horsepower: 35 BHP (26 kW)

Steam Pressure: 120 psi (827 kPa)

Fuel: black coal, coke or wood

Overall Weight: 12.6 tonnes

Road Speeds: 4.0 km/hour (high gear) & 3.0 km/hour (low gear)

Acknowledgement

Museum Victorian acknowledges the generous support of the Sunshine Foundation towards the acquisition and restoration of the Cowley traction engine.

See the Cowley Traction Engine at:
Scienceworks Museum
2 Booker Street,
Spotswood, Victoria
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Open Daily: 10 am – 4:30 pm