

Sunshine Type A Tractor

Museum Victoria's Type 'A' Sunshine Tractor built probably between 1917 and 1919 to a design originally patented in 1916, as part of an early form of self-propelled harvester.



In September 1918, H.V. McKay's Sunshine Harvester Works submitted two tractors of their own design to the first official Australian tractor trials, held for the Royal Agricultural Society of Victoria at the State Research Farm, Werribee. Both tractors performed well, although fuel consumption and ploughing rates were not as good as some of the other four Australian and two imported designs tested. Over the next few years a small number of both Sunshine tractor designs were sold, but production ended around 1920.

The Sunshine Harvester Works

The McKay enterprise began at Ballarat in the late 1880s to market 'combined stripper harvesters' built to a design patented by Hugh Victor McKay in 1885. A decade later McKay introduced an improved harvester under the 'Sunshine' brandname and by 1900 was producing 500 harvesters a year.

In 1904, McKay acquired the defunct Braybrook Implement Works, situated on the western outskirts of Melbourne and began relocating his manufacturing works from Ballarat to the new site where production diversified into cultivating implements, and eventually a complete range of farm equipment.

By 1911, the Sunshine Harvester Works was employing 1,500 people and the business was so successful that the suburb had changed its name to Sunshine.

Self-Propelled Harvesters

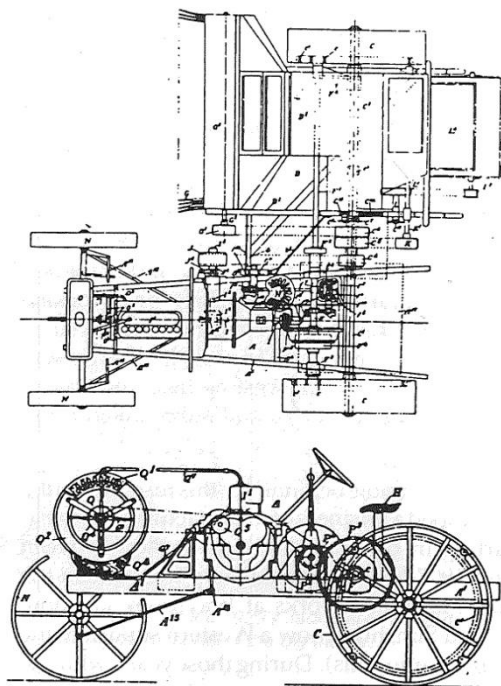
The Sunshine tractor originated through H.V. McKay's early efforts to develop a self-propelled harvester that could be operated without a horse team. In 1901, he submitted a patent specification for "*An improved motor driven Stripper Harvester*". A further patent for "*Improved grain harvesting attachments to road tractors or traction engines*" followed in 1907.

Below: The Sunshine Type 'A' Tractor under demonstration at the Werribee Tractor Trials, 1918





In 1908-9 several prototype self-propelled harvesters were built and tested, but never went into production. McKay's fourth attempt, patented in 1916, was conceived around the concept of a self-contained tractor that could be used for general farm duties, like ploughing or belt-work, then come harvest time could be attached directly to a harvester by removing one of the rear wheels on each machine and coupling the two main axles.



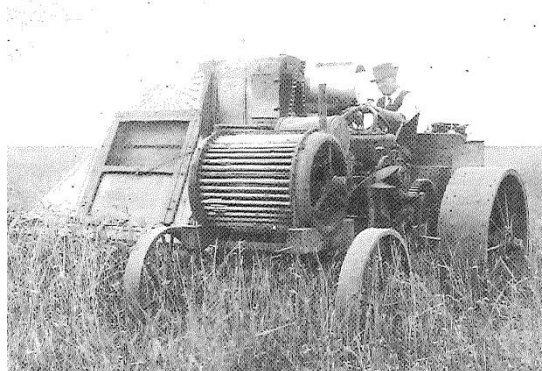
Drawings from the original 1916 patent specification showing (at top): the Type 'O' tractor design with longitudinal engine coupled to a harvester, (and below): a side elevation of the Type 'A' tractor showing its unique radiator design.

Sunshine Type 'A' Tractor Design

When originally conceived in 1916, the Sunshine tractor was a relatively sophisticated design compared to its immediate contemporaries, such as the McDonald Imperial and International Mogul tractors. The imported 4-cylinder Continental motor was a good choice being very reliable and easy to start, while also economical to run on cheaper kerosene fuel, once started and warmed on petrol. The 3-speed transmission featured a fully-enclosed oil-bath gearbox and differential with final drive to the 4-ft diameter rear wheels by 'lantern' type pinion and ring gear similar to that on McKay's ground-drive harvesters.

Other unusual features for its time were the Ackermann type steering, sprung front axle and the unique cylindrical radiator with internal axial fan, possibly designed for use with poor quality farm water.

Considerable emphasis was placed in keeping the weight as low as possible. The price of a Sunshine Type 'A' tractor was £500. In 1919, the imported Fordson tractor was introduced at around £385 and within five years its price had more than halved, spelling the end to any limited demand for a tractor like the Sunshine.



A Sunshine Type 'A' tractor operating as originally conceived direct-coupled to a Sunshine harvester

Technical Specifications

Engine: Continental Motors Co., Detroit & Muskegon, Michigan, U.S.A.
4-cyl vertical-in-line, 4-stroke

Engine No.: 28619 C (6-31-16)

Bore x Stroke: 4 $\frac{1}{8}$ x 5 $\frac{1}{2}$ in (105 x 140 mm)

Capacity: 294 cu in (4.82 litres)

Ignition: high tension magneto

Fuel: Petrol (originally 'Benzine') or Kerosene

Fuel Consumption: 1.15 gallons/hr (5.2 L/hr)

Maximum Belt Power: 27 BHP (20 kW)

Drawbar Power: 10 BHP (7.35 kW)

Transmission: 3-forward & 1-reverse gears

Speeds: 1 $\frac{1}{2}$, 2 $\frac{1}{2}$, 4 m.p.h. (2.4, 4 & 6.4 km/hr)

Power Take-Off: 10 in dia. flat-belt pulley

Overall Dimensions: 3655 x 1753 x 2667 mm
12 ft L x 5 ft 9 in W x 8 ft 9 in H (with canopy)

Overall Weight: 2 tons 1 cwt (2,083 kg)

See the Sunshine Type A Tractor at:

Scienceworks Museum

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Spotswood, Victoria
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Telephone: (03) 9392 4800
Open Daily: 10 am - 4:30 pm