



The prototype light tractor produced for Chamberlain Industries in 1959, based on the Holden car engine. This unique Australian-designed tractor now forms part of Museum Victoria's technology collections.

In December 1959, A.H. Chamberlain wrote to Gilbert Vasey, founder of the Agricultural Engineering School at Melbourne University, seeking assistance with the independent testing of a new small tractor “with several distinctive features” based on a modified Holden car engine. Despite the clever design concept and encouraging test results, the all-Australian tractor designed to compete with Massey Ferguson’s ubiquitous MF 35 “Red Fergie” tractor, was never to see full production.

## Chamberlain Industries

Chamberlain tractors were produced by Chamberlain Industries Pty Ltd, of Welshpool, Western Australia, between 1949 and 1986. The company was founded by Bert Chamberlain, brother-in-law of the famous aviator Harry Hawker, and three sons A.H. (Bob), H.F. (Bill) and A.W. (Bert), all brilliant engineers.

By the late 1930s, the Chamberlain family held interests in several Melbourne-based automotive component firms, which provided the basis of their diversification into tractor manufacture.

The model 40K was the company's first tractor. It used a 30.5 kW (45.8 HP) horizontally opposed, two-cylinder, four-stroke kerosene engine designed and manufactured by the company and was first produced in 1949.

Within a few years, Chamberlain tractors established an enviable Australia-wide reputation, capturing a major share of the local market in large kerosene and diesel powered tractors for broad acre farming and industrial applications. The Champion and 80 Series models were their most successful and best known later designs.

## The Chamberlain Light Tractor

Engineering and design work on all of the firm's earlier tractors was led by A.H. (Bob) Chamberlain. In the late 1950s, Bob Chamberlain became interested in developing a new light-weight Australian tractor design to compete with the imported MF 35 Massey Ferguson model.

To reduce planned production costs as much as possible the tractor was designed around a modified GMH “Holden” engine. It was a clever idea as



# scienceworks

the engine was already being mass-produced in Australia and was available at a cost of just £125, while the existing network of Holden dealers could provide ready access for farmers to servicing and spare parts.

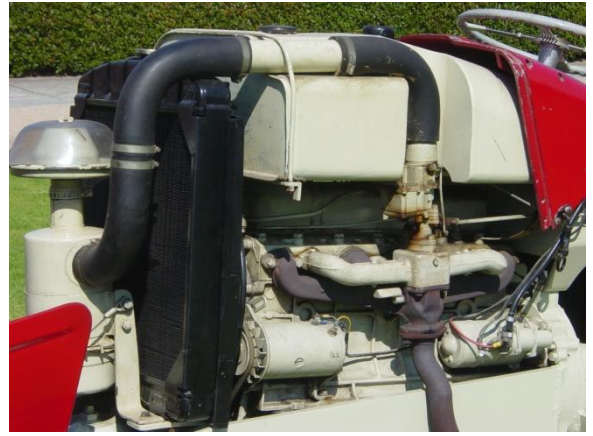
The first of two prototypes was completed in 1959 by the Rolloy Piston Company of Port Melbourne (an associated company owned by the Chamberlain family).

Subsequent testing by the University of Melbourne's Agricultural Engineering Department in February 1960, proved that the "tractor with a car engine" was an effective concept with excellent performance characteristics and fuel consumption. As an alternative to the petrol engine, a diesel engine was also developed based on a design by the MAN Company of Germany to be fitted to a second prototype.

Despite the encouraging test results, full production was later abandoned when the Commonwealth Government rejected a Tariff Board recommendation to support the manufacture of small tractors in Australia. Although one prototype was later broken up, fortunately the other survived and is now preserved with Museum of Victoria.



The prototype Chamberlain light tractor design incorporated several standard 'off-the-shelf' components such as this MF flat-belt pulley PTO drive. At the time many Australian farmers were still using belt-driven machinery.



Under the Hood. Detail of the Holden 'grey motor' fitted to the Chamberlain prototype light tractor.

## Technical Specifications

**Engine:** GMH 'Holden' 6-cylinder vertical-in-line, 4-stroke, petrol engine

**Bore:** 3 in (76.20 mm)

**Stroke:** 3¼ in (82.55 mm)

**Capacity:** 138 cu in (2.26 litres)

**Governed Speed:** 2,700 r.p.m.

**Fuel:** Super grade petrol

**Fuel Consumption:** 0.75 lb/BHP hour

**Maximum Belt Power:** 39.6 BHP (29.54 kW) @ 2700 rpm

**Maximum Torque:** 77 lb ft (104 N m)

**Drawbar Pull:** 4,300 lbf (19.1 kN) with 2410 lb (1099 kg) ballast

**Transmission:** 3-forward & 1-reverse gear with high & low ratios

**Power Take-Off:** Independent flat-belt pulley PTO capable of being coupled to either engine or ground speed.

**Implement Attachment:** Ferguson standard 3-point linkage (no longer fitted)

**Wheelbase:** 84 in (2134 mm)

**Overall Weight:** 3430 lb (1,557 kg)

## Acknowledgement

The Chamberlain light tractor was generously donated to Museum Victoria by Mr A.H. (Bob) Chamberlain.

See the Chamberlain Light Tractor at:

## Scienceworks Museum

2 Booker Street,

Spotswood, Victoria

Melways Map 56 B1

Telephone: (03) 9392 4800

Open Daily: 10 am – 4:30 pm