



The Chamberlain Super 90

*one of the world's all time great tractors –
and it was an Aussie!*

By Ian M Johnston

THE EARLY CHAMBERLAIN TRACTORS

The Western Australia based Chamberlain Industries Limited entered the tractor scene in 1949 and, during a somewhat turbulent first decade, produced a range of excellent tractors eminently suited to broadacre grain fields.

The first Chamberlain tractor offered to Australia's farmers was the 40K, powered by the firm's own twin cylinder, transversely mounted, horizontally opposed 40 hp engine designed to operate on low priced power kerosene. Not only was the engine unique in design, but went against the global trend of equipping tractors with inline multicylinder power units. Even John Deere, Lanz and Marshall were about to abandon the concept of their idiosyncratic single and twin cylinder engines.

Two years following the introduction of the 40K, the 40KA became available. The two models were virtually identical, but the 40KA incorporated a closer range of gear speeds in its nine speed gearbox.

The tractors were true heavyweights, tipping the scales at 8500 pounds (3855 kg). They proved popular, particularly in



The photo is of a Chamberlain Champion created by the author as a replica of Tail-End Charlie, the famous recovery vehicle which accompanied the 1955 round Australia Redex Trial. It is powered by a four cylinder Perkins 270D diesel engine. (PHOTO: IMJ)

Western Australia. But by the time the model was superseded in 1955, actual sales amounted to only 2000 in total, well

short of the 1000 units per annum that had been initially envisaged.

The final production run of the twin cylinder Chamberlains occurred in 1955 when a small number of 55D tractors were introduced. They featured the same configuration engine but with a clever but complex designed combustion system, coupled to a variable compression ratio arrangement, enabling them to run on diesel fuel following a cold start on petrol. (It is interesting to note that this starting procedure was successfully used by International Harvester in their first diesel engined tractors).

In 1955 the Welshpool factory surprised the industry with the release of its Champion range of tractors, powered by the indestructible Perkins four cylinder 270D diesel engine. Following an imaginative promotional exercise, which saw a slightly modified Chamberlain Champion farm tractor serving as the recovery vehicle for the 1955 round Australia Redex Trial in which it recorded 17,824 kilometres in 19 days, the Champion became the sales leader in its class and the most profitable tractor in the Chamberlain stable.



Mathew Puls of Dubbo, NSW is seen here demonstrating his immaculately restored Chamberlain 40KA. Note the horizontally opposed twin cylinder engine which was designed to run on power kerosene fuel, following its initial start on petrol. (PHOTO: IMJ)



The 60DA was the first of the GM powered Chamberlains. The unit pictured is actually a prototype model and was photographed at the Perth Show. (PHOTO: IMJ)

Protected by a tariff bounty system, Chamberlain tractors were priced extremely competitively against imported machines. But as the American manufacturers introduced increased sophistication and larger engine capacities into their tractors, Chamberlain was obliged to keep pace.

Accordingly, a prototype 60DA incorporating a three cylinder General Motors two stroke diesel was trialed, but it was found that its 60 hp could not match the drawbar pull of the emerging Oliver, John Deere, Minneapolis Moline and other American heavyweights. Thus the Super 70, a near identical unit to the 60DA but with the GM diesel boosted to 70 hp, was rushed into production and the 60DA relegated to the history books. But even the Super 70 was still lacking in performance when compared to its American competitors.

THE SUPER 90

In 1963 Chamberlain released the Super 90, a restyled unit tipping the scales, when water ballasted, at around seven tonnes and featuring the legendary GM 371 power plant. Originally configured to produce 90 hp, a new updated version of basically the same engine delivered 100 hp at 1800 revs. The 213 cubic inch capacity at first glance seemed inadequate in relation to its performance. But the two stroke engine with its three cylinders was supercharged (as distinct from turbo charged) and the Super 90 was capable of

exerting a massive drawbar pull of 8460 pounds (3837 kg) at 3.1 mph (4.99 kph).

By way of comparison the Oliver 1900D, the most powerful of the American imported tractors in the early 1960s, under test at Nebraska returned a 12,475

pounds (5659 kg) pull but at the much slower speed of 1.83 mph (2.94 kph) and in order to achieve traction it carried an additional 4740 pounds (2150 kg) of ballast in the form of stacked weights clamped to the rear axles. At 4.95 mph (7.97 kph) the pull of the Oliver was reduced to 6282 pounds (2850 kg).

The figures can be confusing, but the important factor here is that the Super 90, which in normal operating trim weighed around 1500 pounds (680 kg) more than the Oliver, did not require extra ballast to efficiently transfer its power to the ground. An interesting element in this comparison is the fact that the Oliver 1900D was powered by a GM four cylinder two stroke super charged engine of 212 cubic inch capacity and the Chamberlain Super 90 had the GM three cylinder two stroke super charged engine of 213 cubic inch capacity.

The bulky broad section 23.1x26 rear tyres of the Chamberlain, mounted on heavy duty steel rims, plus the sheer weight of the tractor, enabled the Super 90 to obtain its phenomenal grip of the ground. In terms of pure grunt, the 100 hp Super 90 was possibly the most powerful two wheel drive farm tractor in its era. Indeed farm implement manufacturers

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The Chamberlain Super 90 (second series) was the ultimate muscle tractor of the 1960s. This particular unit has been completely restored by the author. (PHOTO: IMJ)

<45...CLASSIC TRACTORS

at that time were unable to manufacture ploughs and scarifiers of sufficient size to match the available power of the Super 90. Therefore it was a common sight when driving through Australia's broad-acre country to see a Chamberlain Super

90 working comfortably with two 22 disc ploughs coupled together in tandem.

The Super 90 had nine well spaced gears and a hand operated over centre clutch which was a joy to use. The offset upholstered bucket seat provided a relaxed driving position and was perfectly positioned to enable the operator to obtain a



Pictured is the same tractor, clearly showing the soft riding transverse leaf spring front suspension. The tank alongside the engine is in fact the hydraulic reservoir to which is attached the valve control block. In an endeavour to deflect the roar of the two stroke engine, in this example the exhaust pipe has been extended and angled away from the operator. On a still evening, when night ploughing, the distinctive sound of a Super 90 under power could be heard for miles. (PHOTO: IMJ)

clear relatively unobstructed view ahead. The front axle had a soft leaf spring suspension, which rendered the tractor an uncommonly soft ride and produced less operator fatigue when long days had to be endured.

The high cost of manufacturing the Super 90 proved uneconomical in relation to a realistic retail price and therefore created severe budgetary problems for the company. As a consequence it was phased out in 1966 and eventually replaced by the Countryman 354, powered by a Perkins 6-354 engine. It was more modern in its appearance and in its own way a good solid tractor, but the Countryman was no substitute for the Super 90.

The Super 90 was a classic in its own time. Older generation farmers when discussing their 'pride and joy' tend to get a glazed expression as they nostalgically recount the many incidents which endeared the Super 90 to their hearts for ever, despite the fact that today they may well farm with a state-of-the-art four wheel drive 300 hp air-conditioned computerised powerhouse.



IAN'S MYSTERY TRACTOR QUIZ

Question: This patented distinctive rear wheel was fitted as standard to which tractor?

Clue: The tractor is British and a number were sold into the Australian wheat fields.

Degree of Difficulty: A real stinker! Even Barry Jones would not get this one.

Answer: See page 56.

