

# 19. Clockwork Tractor

*In this response, journalist, writer, and historian Stuart Gibbard introduces us to the fascinating story of Ferguson's tractor and plough demonstration model. Designed to help demonstrate the extraordinary technology behind the three-point linkage, these amazing models served a range of purposes. As we will discover, the red overpaint of The MERL examples indicates that it is not true to the original miniature designs of the 'little grey Fergie' models.*

## Ferguson, Demonstration tractor model, circa 1949–1951



Overpainted example of the demonstration model, as held at The MERL (MERL 2014/16/1-8).

When Harry Ferguson met with Henry Ford in October 1938, he brought a clockwork model of a tractor and plough with him to demonstrate the advantages of the Ferguson System. This crude hand-built replica with Meccano wheels sat on the table between the two great men as they shook hands to seal the famous 'handshake' agreement whereby Ford agreed to manufacture a tractor incorporating Ferguson's hydraulic system.

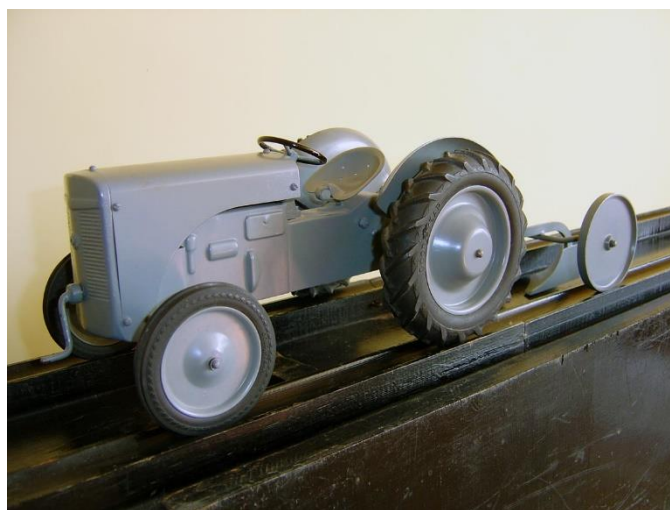
The model surfaced again during the later legal battle between Ford and Ferguson over patent rights and was used in court to demonstrate principles of the linkage and hydraulic system. The clockwork tractor has survived to this day and became the pattern for a series of demonstration models that were issued following the launch of the Ferguson TE-20 tractor – the archetypal 'Grey Fergie' – in Britain.



The original clockwork demonstration model at the historic meeting between Harry Ferguson and Henry Ford at Dearborn in 1938 (Image reproduced courtesy of the Collections of the Henry Ford).

The Ferguson tractor with its converging three-point linkage and hydraulic draft control was a radical departure from traditional farming methods and Harry Ferguson wanted a promotional tool that would show the advantages of the Ferguson System in a simple display. The answer to his needs was the demonstration model, which consisted of a model tractor with two ploughs.

The model was a 1/12<sup>th</sup> scale version of the tractor. It was not a detailed replica but a precision model. Made from pressed steel, it had three-point linkage, which could be latched in the raised position, and was fitted with moulded rubber 'Goodyear' tyres. It was powered by a coiled-spring mechanism (wound by the starting handle) that drove the rear wheels via a crown-wheel and pinion.



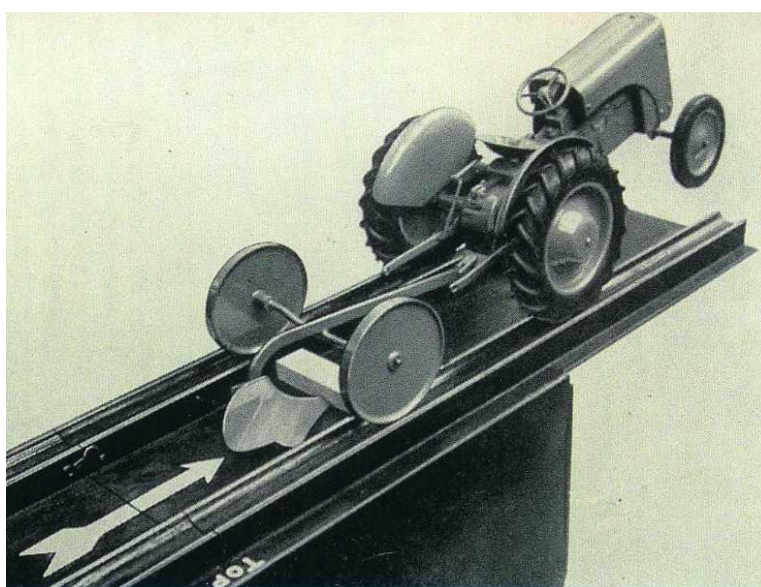
Example of the Ferguson demonstration model with its wooden runway and carrying case (Image © Stuart Gibbard).

Both trailed and mounted single-furrow ploughs were provided with the model. The tractor and implements were housed within a black wooden box, which doubled up as the demonstration unit. The lid and the bottom of the box would slide together on the top of the case to form a runway for the demonstration.



The MERL example of the demonstration model, shown from the rear and with the mounted plough in the latched position (MERL 2014/16/1-8).

The demonstration was simple: the tractor was wound and placed on the runway with the trailed plough first. As it ran along, the plough body struck a wooden block across the runway, arresting the forward motion and causing the tractor to rear up. The exercise was then repeated with the mounted plough, showing that the geometry of the linkage kept the tractor's front wheels on the ground when the tip of the plough struck the wooden block – an effective demonstration of Ferguson stability.

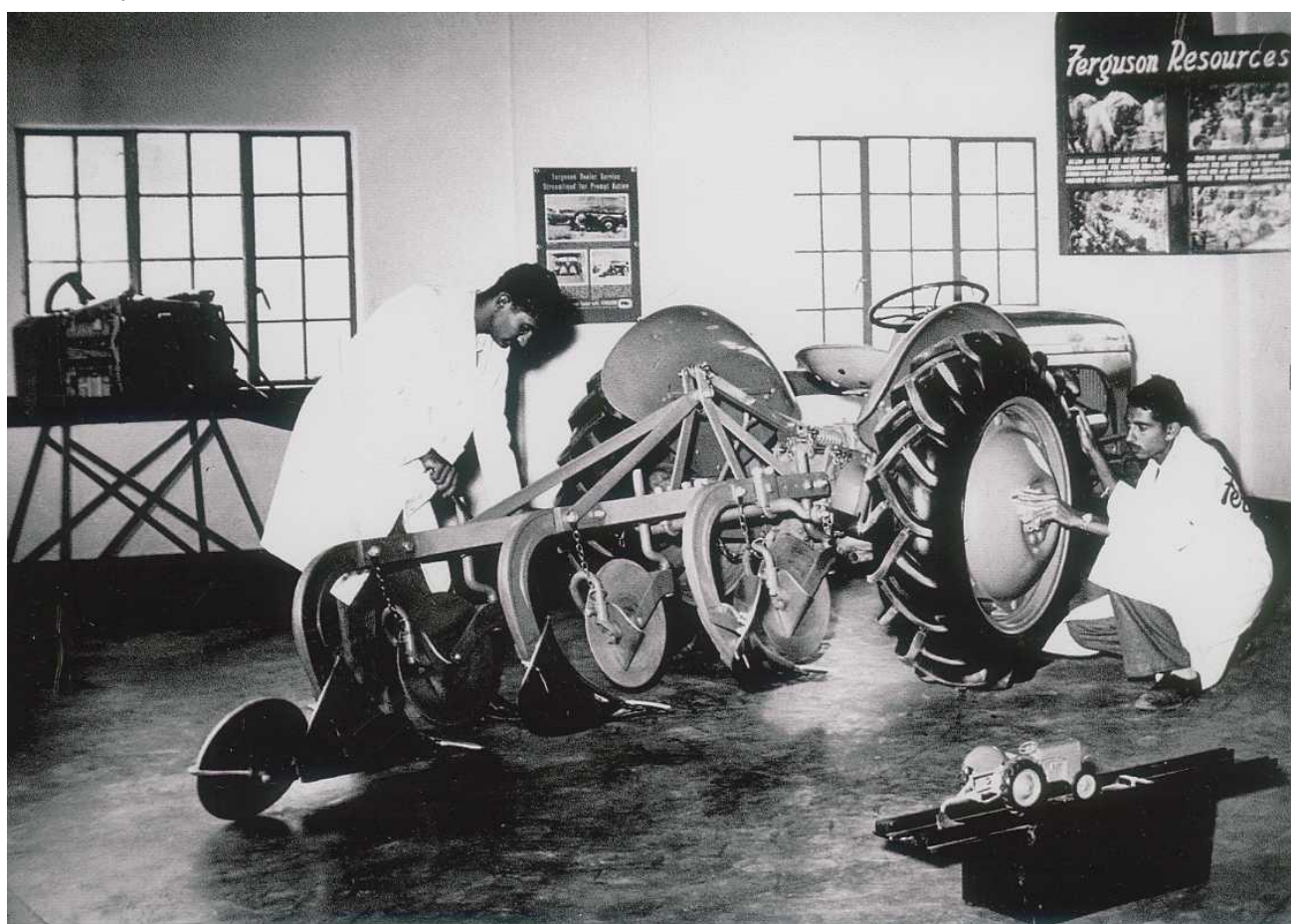


Detail from the instruction book for the demonstration model showing how the tractor rears up when the trailed plough encounters an obstruction (Image © Stuart Gibbard).



Considering the desirability of the demonstration model, very little is known about its history. Its instruction book (Ferguson publication FP51) suggests that it was used as a lecture aid, which undoubtedly helped salesmen extol the virtues of the Ferguson System. How many were made is not known, but its scarcity suggests just a few hundred. A date of 1949 has been suggested for its introduction and it is thought that it was only issued to main agents and not sub-dealers.

The model was also supplied to Ferguson agents worldwide because examples are known to have turned up in India, South Africa and the USA. A reissue of the instruction book in 1951 suggests that there may have been a second batch of models.



A demonstration model at the Ferguson Central Training School in India (Image © Stuart Gibbard).

The demonstration models were made for Ferguson by Mills Brothers of Ellesmere Road, Sheffield. This engineering firm, which was founded in 1919 by the three sons of one of Sheffield's master cutlers, Frank Mills, specialised in wood-working tools and model railways. The railway equipment, mostly 'O' gauge and some '1' gauge, was of a very high quality and was usually built under commission.

The precision engineering that went into the Ferguson demonstration models only reflected the superiority of Mills' clockwork tinplate railway locomotives, which were finished to a very high

standard. The company also produced track, coaches and wagons, which were marketed under the Milbro name. It was expensive equipment for serious modellers.

Mills worked in wood as well as metal and the cases for the Ferguson demonstration models would have presented no problem. Its wooden LNER coaches were real works of art, made from varnished teak with lavish interiors. In the immediate post-war years, engineer, Arnold Hardinge, became a partner in the business and was responsible for the precision components. The company ceased trading in the late 1960s.

The tractor from the demonstration set was also issued on its own as a promotional model, with slight detail differences, to selected Ferguson customers. One example exists of a model bearing the name of the Westmorland Ferguson distributors, Hoggarths Ltd of Kendal and Ulverston, and others are believed to have been issued by dealers in Northamptonshire and Hampshire.



The tractor from the demonstration set issued as a promotional model by the Westmorland Ferguson distributors, Hoggarths Ltd. (Image © Stuart Gibbard).

There are other variants including an earlier demonstration set that was released in the USA during the Ford-Ferguson era of production (1939-47), but this is extremely rare because only about six are thought to have been made. One set exists in the Henry Ford Museum in Dearborn and another in the UK. This American model was slightly different to the British version.



The MERL example was first used by a dealership called Tractors Bath in the late-1940s or early-1950s. It was later overpainted in red on the bonnet and wings. As well as the two ploughs, it also featured a front loader. This piece of equipment was not part of the standard set and may have been added at the local level (MERL 2014/16/1-8).

In Britain, the arrival of the Ferguson FE-35 tractor in 1956 with its more advanced hydraulic system made the demonstration model redundant. However, one or two demonstration sets have appeared with the model tractor featuring red bonnets/wings in the guise of the Massey Ferguson 35 tractor that appeared in 1957. However, these are thought to be later 'repaints' of the original 'grey' demonstration models.

### About the author:

Stuart Gibbard is a journalist, writer, and historian specialising in automotive subjects, tractors, and machinery. He is also a partner in a business sourcing and selling original and early literature for tractors and farm equipment: [www.gibbardtractors.co.uk](http://www.gibbardtractors.co.uk)

## Further Information:

For more about The MERL model see – [MERL 2014/16/1-8](#)

For an overseas example from Australia see – <https://collections.museumsvictoria.com.au/items/724486>

For more information about Ferguson see the Ferguson Family Museum – <https://www.ferguson-museum.co.uk>

For collections linking Ford and Ferguson at the Henry Ford Museum see – <https://www.thehenryford.org/search#perPage=10&pageNum=1&terms=harry%20ferguson&tab=artifact>

For another '51 Voices' item linked to Ferguson see – <https://merl.reading.ac.uk/objects/farm-epic/>