

**Object(s):** Model Steam Engines (Burrell Prince & Princess) and model Double Ended Plough

**Object Number(s):** STMEA:2010-76, STMEA:2010-77 and STMEA:2010-78

**Researcher details:** Richard Hall, Volunteer

### **Model Steam Engines (Burrell Prince & Princess) and model Double Ended Plough**

These items in our collection have a unique association with the Museum. The model steam ploughing engines and model double ended plough; all have full sized equivalents which can be seen on a visit to the Museum.

The steam ploughing engines are a pair and have been named 'Prince' and 'Princess'. They are replica working models made in one tenth scale and based on their equivalents in the Museum collection. The models were made up using 'Markie'<sup>1</sup> kits assembled by the Donor, who won 'Highly Commended' with them at the 1988 'Model Engineer' exhibition.

Both ploughing steam engines are replicas of steam ploughs manufactured by C Burrell and Sons of Thetford, Norfolk. The full-sized engines in the Museum Collection are named 'Countess' and 'The Earl'. Plates on the models, bear the model numbers 776, which was the model number associated with 'Countess' by Burrell's when it was manufactured in 1879. 'The Earl' was numbered 777, however both models 'Prince' and 'Princess' bear the number 776.

The model double ended plough, also part of the set, is one tenth scale and of standard configuration, with four furrows - producing four ridges of soil with each pass of the plough.

### **Steam Ploughing**

Steam Ploughing requires two Steam Engines at either side of a field, which between them drag a plough backwards and forwards as they work their way along the field. It is claimed that the original inventor for this type of ploughing process was the Agricultural Engineer, John Fowler. Fowler was a prolific inventor who, after witnessing the Irish Potato famine in 1849, made it his mission to develop more productive farming methods.<sup>2</sup>

After experimenting with drainage ploughs, Fowler saw the possibility of fitting a steam driven winch to the underside of a steam engines boiler, thereby creating a mechanism with which to drag agricultural implements across a field.

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<sup>1</sup> Markie Precision Working Models [Internet]. Markie Precision Working Models. 2020 [cited 22 June 2020]. Available from: <https://markie-engines.webs.com/our-engines>

<sup>2</sup> John Fowler (agricultural engineer) [Internet]. En.wikipedia.org. 2020 [cited 23 June 2020]. Available from: [https://en.wikipedia.org/wiki/John\\_Fowler\\_\(agricultural\\_engineer\)#Steam-driven\\_plough](https://en.wikipedia.org/wiki/John_Fowler_(agricultural_engineer)#Steam-driven_plough)



Image: Varga A. <sup>3</sup>Winch and steering detail of Fowler ploughing engine.

Fowler commissioned the first modified engine from Ransomes of Ipswich. It was tested in 1856, ploughing one acre (0.4 Hectares) of land in an hour. However, this version, using a single engine proved too time consuming and Fowler hit upon the idea – which he patented in 1856 – of using two steam engines to drag the plough backwards and forwards across the field. The first double engine system was demonstrated in 1863.

It soon became clear that a double engine system, although making inroads into ploughing productivity, was too expensive for most farmers to buy, for such limited use. Therefore, most double engine steam ploughing was undertaken ‘by contract’, that is to say, by contractors who specialised in use of the system and hired out their equipment and labour from farm to farm.

### **C Burrell and Sons**

Joseph Burrell was a Master Blacksmith, who set up a small forge in Thetford in Norfolk in 1770<sup>4</sup>. By the early 19th Century, the firm, which now included other members of his family, were advertising ‘Threshing Machines’ for sale and had moved to the St Nicholas Works in Thetford – now a Grade II Listed Building<sup>5</sup>.

Their first portable steam engine was built in 1848, production on these continued until the early 20<sup>th</sup> Century, by which time, 670 had been sold. Amongst other things, the company moved into the production of ploughing engines, in 1860, under licence from John Fowler and Company. Burrell’s

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<sup>3</sup> Varga A. Winch and Steering Detail of Fowler Ploughing Engine [Internet]. 2020 [cited 23 June 2020]. Available from: By VargaA - Own work, CC BY-SA 4.0, <https://commons.wikimedia.org/w/index.php?curid=34453746>

<sup>4</sup> Charles Burrell \u0026 Sons [Internet]. En.wikipedia.org. 2020 [cited 23 June 2020]. Available from: [https://en.wikipedia.org/wiki/Charles\\_Burrell\\_%26\\_Sons](https://en.wikipedia.org/wiki/Charles_Burrell_%26_Sons)

<sup>5</sup> Former-factory-of-Charles-Burrell-and-Son - Norfolk Heritage Explorer [Internet]. Heritage.norfolk.gov.uk. 2020 [cited 23 June 2020]. Available from: <http://www.heritage.norfolk.gov.uk/record-details?MNF57083-Former-factory-of-Charles-Burrell-and-Son&Index=49661&RecordCount=57338&SessionID=22bf5952-bbeb-49d2-b7ad-3cf3fa2f2193>

went on to manufacture nearly 150 of these engines, including 'Countess' and 'The Earl' in the Museum collection, up until 1914.

Burrell's are perhaps better known for their steam tractors and road rollers, many of which survive today. After many years of trading, and the demise of steam power in favour of diesel driven tractors, which were far lighter on the soil, Burrell's finally closed in 1928 and their last few engines were built at the works of Richard Garrett and Sons of Leiston, which today houses the 'Long-Shop Museum'<sup>6</sup>.

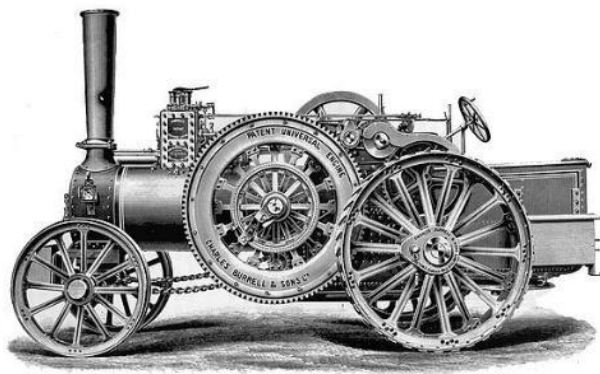


Image: Charles Burrell & Co. Burrell Universal type Ploughing Engine line drawing as used in Burrell advertising material.<sup>7</sup>

## The 'Countess' (776) and 'The Earl' (777)

As you might imagine, our Steam Ploughs have led interesting lives. Made as a pair of steam ploughing engines in June 1879, their first owner was a Mr Reginald Wilberforce JP who lived in West Sussex. In 1893, they were purchased by Mr Charles W Dorlin of Colchester, who operated them until 1904.

They were sold at auction in 1904 and bought by Mr Arthur Borley of Colchester, who used them on his farm. They were rebuilt just before the First World War by Stanford and Company of Colchester, by which time, they were listed on the books of George Thurlow and Son of Stowmarket. They were sold on again to their last commercial owner, Mr Morley of Brize Norton in 1917.

Mr Morley used them for contract work on farms until 1925. After a period of being laid up, they were eventually sold for scrap in 1935. Someone however, was smiling on our two engines because

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<sup>6</sup> Richard Garrett and Sons [Internet]. Longshopmuseum.co.uk. 2020 [cited 23 June 2020]. Available from: <https://longshopmuseum.co.uk/richard-garrett-and-sons/>

<sup>7</sup> Charles Burrell and Company. Burrell Universal type Ploughing Engine line drawing as used in Burrell advertising material. [Internet]. 1890 [cited 23 June 2020]. Available from: By Charles Burrell & Sons Ltd - Line Drawing used in Burrell Advertising Material, Public Domain, <https://commons.wikimedia.org/w/index.php?curid=6991226>

they were never broken up and, having survived the Second World War, they were rescued in 1966 for preservation by Mr Paisley of Cambridgeshire.

By 1980, the engines – half built – were auctioned off and bought by Mr Varley from North Yorkshire. Mr Varley gave the engines their current names and, after some restoration work, put them up for auction again. The Museum stepped in buying both engines for the collection, using funds from grants and donations.

With help from the Long Shop Museum, both were restored to working order and by 1985 were used for ploughing again on the Museum site.



Image: Richard Hall. 'The Earl' at the Museum of East Anglian Life.<sup>8</sup>



Image: Richard Hall. 'The Countess' at the Museum of East Anglian Life.<sup>9</sup>

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<sup>8</sup> Hall R. 'The Earl' at the Museum of East Anglian Life. 2020.

<sup>9</sup> Hall R 'The Countess' at the Museum of East Anglian Life. 2020.



Stowmarket, Suffolk IP14 1DL

Tel: 01449 612229

[www.eastanglianlife.org.uk](http://www.eastanglianlife.org.uk)

### **The 'Prince' and 'Princess' (776)**

The hobby making of model steam engines, is very popular. A quick search brings up 100,000 results from all over the world with several makers and collectors exhibitions held every year.

The Prince and Princess were made using parts from a model kit and taking as a guide, the Countess and The Earl in our collection. Originally, they would have been working models, that is to say that they could be operated via a steam boiler. I don't know whether they are still working but as the pair of engines won a 'Highly Commended' at the Model Engineer in 1988, they would certainly have been operating at that time.

Model Engineer exhibitions are still popular today, with events held in different regions of the country. The first exhibition was held in the Olympia Exhibition Hall in London at the end of the 19<sup>th</sup> Century. The same exhibition, stills runs today, the latest being held at Alexandra Palace in January 2020.

Winning a 'Highly Commended' award at such a prestigious event suggests that our models are really well made and worthy of the best model makers. A fitting tribute to the Countess and The Earl that they represent.