

## Supplement to HISTELEC NEWS No.11 April 1999

### William Murdock:- Cornwall's Gas Pioneer

by Peter Lamb

*In 1992 the people of Redruth celebrated the invention of gas lighting by William Murdock in their town in 1792. Some kind person sent me a press cutting of the event and recently the Archive has acquired a booklet from the SWEB Head Office Library, (due to it being disbanded) about the same topic published by British Gas. David Gledhill ex-member of the Society, retired gas man and co-author with me of "Electricity in Taunton", provided me with much additional information. You've had Richard Trevithick by John Haynes. so here's the story of William Murdock, a one time citizen of Cornwall.*

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William Murdock was a Scotsman from Ayrshire born in 1754, In his youth he was acquainted with James Watt, who had set up an engineering firm in Birmingham with Boulton a few years earlier, i.e. Boulton & Watt. At the age of 23 he set off for Birmingham and was taken into their employment.

Watt had spent much time in Cornwall persuading the Mine owners to buy his steam pumping engines, which he had designed. Due to ill health, Watt withdrew from Cornwall and in 1779 despatched Murdock as Manager for the firm in Cornwall to look after their mine interests there. Murdock lived in Cornwall for 19 years, 16 of which were at Cross Street, Redruth, which today bears a plaque to that effect. He married Ann Paynter, the daughter of a Mine Captain and had two sons, William and John.

Murdock, who was endowed with an inventive genius, carried out many experiments at his home, whilst working for Boulton & Watt in Cornwall. In 1784 at the age of 30, he built and tested the first primitive locomotive, a model 19 inches long by 14 inches high. He ran the engine on a dark night along an unfrequented lane near Redruth Parish Church scaring the "daylights" out of the local rector. However he was never able to pursue his ideas due to the obstinacy of his employers. He tackled them with a view to getting his ideas adopted as a full size B & W production model, but was strongly turned down. Not only did they oppose his idea completely, but extracted a promise from him that he should abandon it entirely. It was therefore left to Richard Trevithick, who was only a mere lad of 13 years at the time, to pursue the idea of a self propelled vehicle. There is evidence that Trevithick was a visitor to the Murdock house, although Trevithick's engine was of a completely different design. Murdock nevertheless kept the engine until his death, when it passed to his son John, who later sold it to Mr. Tangye of Birmingham and it now is owned by Birmingham City Council.

Having been given such a resounding "putdown", Murdock turned his inventive mind to other ideas. He invented the "D" slide valve, which greatly simplified the mechanism of the steam engine. In 1791 he took out a patent for a process for extracting from coal a composition for painting on boats to prevent barnacles from attaching themselves to hulls. The patent included coal tar dyes, which were not used practically for another 50 years.

But his most known invention was the use of coal gas as an illuminant. He realised that gas lighting could be produced from coal. whilst others had experimented with lighting coal gas produced by heating coal, A Frenchman Le Bon had created a light from a gas produced from burning wood. but this had not been very successful. William Murdock understood the practical use of a gas light produced by carbonising coal. If coal was heated in a closed container and a hollow pipe attached, the gas given off by the coal went up the pipe where it provided a steady flame. He remembered from his childhood how housewives in Ayrshire used to burn a special coal that gave a bright light, which boosted the meagre light provided by oil lamps and candles. Tradition has it that he experimented with burning coal in his Mother's old kettle and lighting the gas that came out of the spout. In 1794 he heated coal in a closed iron vessel (a retort) in his garden at Cross Street, Redruth and piped it into the house, where he lit a series of burners attached to the other end of the pipe. This was the first practical system of gas lighting in the world.



**WILLIAM  
MURDOCK**

Again Boulton & Watt consistently opposed Murdock getting any patents for his inventions and eventually Murdock lost patience with his employers and in 1797 obtained another job in Scotland. B & W then realised their loss and after a year offered him another post in his old firm, this time as Manager of their Birmingham Engineering Works.

After his return B & W were encouraged to install gas lighting in their Birmingham Soho Works in 1799. A few years later a Manchester Mill Owner, Mr. George Lee of Phillips & Lee, ordered Murdock's lights in 1805 and then the invention took off. Although not being encouraged to patent the invention he was awarded the Gold Medal by the Royal Society in recognition of his achievements.

A German national, Frederick Winsor came to London at this time claiming to have a gas system of lighting, but his ideas were believed to have been obtained whilst working for Le Bon. He tried to float a company in 1808 called the Great National Light and Heat Company accompanied by a Parliamentary Bill in 1809. His solicitor wrote to Mr. Lee, since his Mill was one of the largest in the country, at the time, asking for his views on his gas lighting system. Mr. Lee being very supportive of Murdock extolled his gas lighting system stating that he had been the first in the field. Lee's views were made public with the effect that Winsor was rumbled and eventually the Parliamentary Bill was thrown out. However Winsor did form another company later "The Gas Light & Coke Company", which lighted London in 1813. Within 10 years most of the major cities in the UK had been lit by gas lighting.

William Murdock remained with Boulton & Watt until 1830 becoming a partner. By 1815 with Murdock's help, B & W had developed into a gigantic concern. Murdock himself purchased a retirement home in Cornwall at Sycamore Hill, Penzance and died at the age of 86 in 1839. He never made a fortune out of gas lighting due to a lack of patent rights!

HOME OF WILLIAM MURDOCK CROSS STREET, REDRUTH  
With brass plaque by Tangye Bros of Birmingham



WILLIAM MURDOCK

LIVED IN THIS HOUSE

1762 - 1798

MADE THE FIRST LOCOMOTIVE

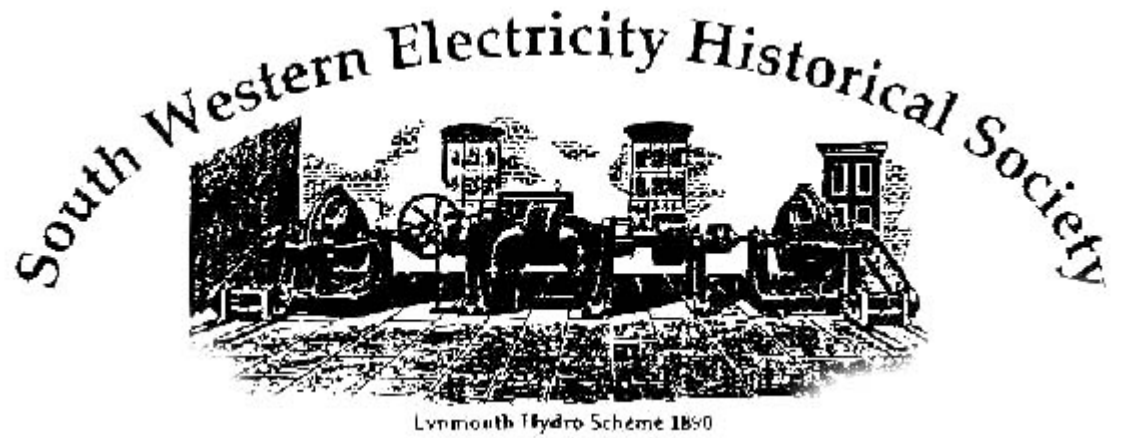
HERE AND TESTED IT IN 1784

INVENTED GAS LIGHTING AND

RECEIVED THE HONORARY JAMES

WATT PATENT

ERECTED BY TANGYE BROS BIRMINGHAM



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