

Samuel Grose: a Trevithick Protégé and Unsung Hero

By Peter Gardner*

Samuel Grose, later to become one of Cornwall's best known engineers, was born at Nether Stowey, Somerset in 1791. His parents Samuel Grose and Eleanor Giddy were both from Redruth and Sam was employed for many years as a 'Captain' at the Dodington Copper mines.

The Grose family returned to Cornwall in February 1802 where Sam senior took up a position at the Wheal Alfred mine near Hayle and Sam junior became an apprentice under Richard Trevithick until he left for London. Little is known of Sam's apprenticeship and early years except that his career was often confused with that of his father.

Trevithick returned to Cornwall in 1810 and there began a hectic period of erecting his pumping machinery at various mines, with his youthful overseer Sam Grose. The first of a number of "plunger pole" engines was erected at Wheal Prosper near Gwithian under Grose's supervision. This engine was completed in 1812 and others were erected by Grose at Beeralston (Devon) and Wheal Treasure (Fowey). He is also reported as working at Wheal Treskerby during this period.

In 1816 Trevithick left for Peru and due to a number of deficiencies his 'plunger pole' engines were not successful. With Trevithick's departure the history books are again silent on where Grose was working but is almost certain that he was either employed as an engineer or assistant engineer somewhere in Cornwall.

From early in the 1820s Grose appears to have been associated with the Cornish Copper Co and in 1825 supervised the construction of an engine of his own design at Wheal Hope near St. Agnes. The following year Grose was working on another engine of his own design at nearby Wheal Towan and a second engine was constructed at this mine in 1828. The Grose engines were basically Trevithick's single cylinder Cornish Beam engine with a few minor modifications to high pressure steam and other aspects of design. But his real improvement was using large amounts of insulation known as 'thermal lagging' wherever it could be applied.

Davies Gilbert MP (formerly Giddy) was a strong supporter of Trevithick and possibly a relation of Grose. Grose was advised by him to take out a patent on his improvements which he declined to do. Once the huge improvements in efficiency and massive savings in the cost of coal were obvious the Grose insulation ideas were quickly adopted across Cornwall.

Using a measurement of efficiency known as the Lean Engine index which measured the lifting power of the best engines across Cornwall the Wheal Hope and Wheal Towan engines increased their efficiency compared with their nearest competitors by 2 and 3 times. The Wheal Towan engine headed the Lean index from 1827 to 1831 and in 1829 Wheal Hope was second. In 1832 Wheal Towan was still in the top 8 engines in the county. In 1835 the best engine on the Lean Index was at Fowey Consols. Engineer William West was Grose's former

assistant at Wheal Towan. In the meantime Richard Trevithick had returned to Cornwall in 1827 only to die in poverty and relative obscurity in 1833.

From the construction of the first 'Grose' engine in 1825 Sam's career blossomed as he was the most prominent and popular of a number of Cornish engineers for 30 years. By 1829 he was also employed at "Wheal Harmony, Wheal Montague, Great St George, Crinnis Consolidated and United Hills. "(Harris) The list of mines he worked at is long and some of his more unusual jobs were building a steam engine for the Torpoint ferry in 1834 and building the pump for the Wherry mine at Penzance in 1837 – a mine that went under the sea.

Grose designed and built engines were renowned for their longevity and a number operated for more than 50 years. Perhaps it is fitting that the 80" Grose engine for Wheal Alfred built by Harvey & Co in the early 1850s is a fine monument to him. After doing service in a number of mines it was purchased by South Crofty in 1902 where it did service at Robinsons Shaft for more than 50 years to complete more than 100 years of operation.

This engine has been described as the "fine Samuel Grose engine" and an "engineering masterpiece" and is now preserved by the National Trust as part of the Heartlands project at South Crofty.

In later years Samuel Grose was described as "the oldest and most scientific engineer in Cornwall" and "a man of great ability, sound judgement; very unassuming in his manner..." Grose retired to Goneva farm at Wall, Gwithian about 1856, though still advising a number of companies on engineering matters. He died in 1866.

*The Author's great great grandfather was a first cousin of Samuel Grose and his great grandfather Samuel Grose Angove his namesake. First published in the CAV Newsletter No 114 May 2015.