

Smith, Thomas (*bap.* 1752, *d.* 1815), lighting engineer, was baptized on 6 December 1752 in Ferryport-on-Craig, Fife, a small village opposite Dundee, the son of Thomas Smith, mariner, and his wife, Mary Kay. In 1764 Smith was apprenticed at Dundee to a metalworker named Cairns, after which he went to Edinburgh, probably in 1770 when building of the 'new town' was in progress, as a journeyman metalworker. By 1781 he was trading as a tinsmith from Bristo Street, where he manufactured oil lamps, brass fittings, fenders, and other household metal articles. His business prospered and by 1790 he had moved to premises in Blair Street, where he employed a larger workforce. He was elected to the Edinburgh Guild of Hammermen in 1789, and became its master and a city magistrate in 1802.

On 19 February 1778 Smith married Elizabeth Couper (1758–1786), daughter of a Liberton farmer. After her death, on 20 October 1787 he married Mary Jack (1762–1791). In the year following her death, on 14 November 1792 Smith married Jean Hogg, *née* Lillie (1751–1820). Jean Lillie had first been married in 1771, to Alan Stevenson (1752–1774), and then in 1777 to James Hogg, an Edinburgh gunsmith, whom she divorced in 1792.

Smith took an interest in improving the illumination of lighthouses in 1786, before the board of commissioners of northern lighthouses was formed in the same year to improve the almost non-existent lighting of Scotland's coast. He had proposed to the chamber of commerce at Edinburgh that a lamp with metallic reflectors be substituted for the coal light at the old private lighthouse on the Isle of May, but they declined their support. On 16 June 1786 Smith wrote 'A comparative view of the superior advantages of lamps above coal light when applyd to light houses', in which he confirmed that he had 'constructed 2 small reflectors & lamp with a view to demonstrate by experiment what has been only laid down in theory' (NL Scot., MS Acc. 10706, 88). He then petitioned the board of manufactures in Edinburgh on the utility of such lamps and they resolved to allow £20 towards the expense of making a model of a reflector lamp and trying an experiment on Inchkeith, a trial that is believed to have been successful. The Northern Lighthouse Board appointed Smith as their first engineer on 22 January 1787.

After receiving instruction in lighthouse construction and illumination in Norfolk from Ezekiel Walker of King's Lynn, Smith enthusiastically set to work in 1787, without payment, on the provision of new lighthouses for the Northern Lighthouse Board, until 1793 when he was awarded a salary of £60 per annum and his expenses. The board did not regard his lack of building and architectural experience as an impediment, as such skills could be and were brought in under his general direction.

During the next two decades, commencing in 1787 with the conversion of Kinnaird Castle into a lighthouse—followed by the Mull of Kintyre (1788), North Ronaldsay (1789), Eilean Glas (1789), and Pladda (1790) lighthouses—Smith was responsible for providing or improving thirteen lighthouses. Independently of the board he was responsible for harbour lights at Leith and Portpatrick, and on the rivers Clyde and Tay. His last major lighthouses were Start Point, Orkney (1802–6) and Inchkeith (1804), both for the board, and Little Cumbrae (1793), for the Clyde Lighthouses Trust.

From 1797 Smith delegated most lighthouse matters to his apprentice and stepson Robert Stevenson, who married his daughter Jane, and established the Stevenson dynasty of engineers which practised until 1952. Stevenson formally succeeded him as engineer to the Northern Lighthouse Board on 12 July 1808. This enabled Smith to concentrate on lamp manufacture and the expansion of his shipping and other interests, particularly his general and street lighting business. By 1800 his lamps were lighting much of eastern Scotland and the central belt as far west as Glasgow. In 1804 he was the public lighting contractor for both the Old and New towns of Edinburgh and, by 1807, for lighting the streets of Perth, Stirling, Ayr, Haddington, Aberdeen, and, in 1810, Leith. In 1808 Smith retired from the business, which was then carried on by his son James.

Smith developed and made arrays of parabolic reflector oil lamps. Each lamp had a light source at its focus and a curved reflector formed of small pieces of mirror glass set in plaster that produced a beam of light. His first light, at Kinnaird Head, had an intensity of about 1000 candlepower, which, although feeble compared with its modern counterpart of 690,000 candlepower, nevertheless represented a worthwhile improvement on coal lights. He retained glass-faceted reflectors for new lights until 1801, after which, because of Robert Stevenson's influence, he started to manufacture Argand lamps with silvered copper reflectors. This improvement which produced a significantly brighter light is believed to have been first installed in Scotland at Inchkeith lighthouse in 1804.

Details of Smith's reflectors became more generally known from an article 'Reflector for a light-house' in the supplement to the third edition of *Encyclopaedia Britannica* (1801). In it Smith is described as 'an ingenious and modest man [who] has carried [his inventions] to a high degree of perfection without knowing that something of the same kind had been long used in France'. This tribute was omitted from later editions, including the last carrying the article (1823), after the editor had learned of Ezekiel Walker's prior development of the glass facet reflector lamp concept. Nevertheless, Smith was the first to introduce brighter lights into Scottish lighthouses, and has a good claim to be regarded as Scotland's first lighting engineer. He died on 21 June 1815 at 1 Baxter's Place, Edinburgh, and was buried in the old Calton cemetery.

Roland Paxton

Sources

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Archives

Edinburgh City Archives, chamber of commerce at Edinburgh MSS · [NA Scot.](#), board of manufactures and Carron Co. MSS · [NA Scot.](#), northern lighthouse board minute books · [NL Scot.](#), business records of Robert Stevenson & Sons, Civil Engineers, MS Acc. 10706

Wealth at death

approx. £26,000: private information

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UNIVERSITY PRESS

Roland Paxton, 'Smith, Thomas (*bap.* 1752, *d.* 1815)', *Oxford Dictionary of National Biography*, Oxford University Press, 2004
[accessed 4 Oct 2004: <http://www.oxforddnb.com/view/article/40767>]

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