

THE WATT CLUB SUMMER EXCURSION
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NOTES ON

**THE ISLE OF MAY
AND ITS LIGHTHOUSES**

prepared by Professor Roland Paxton
Department of Civil and Offshore Engineering
Heriot-Watt University

Light Established:	1816
Engineer:	Robert Stevenson (1772-1850)
Position:	Latitude 56° 11.2' N Longitude 02° 33.3' W Situated at the mouth of the Firth of Forth 5 miles from Fife and 11 miles from East Lothian
Character:	Flashing White every 20 seconds
Elevation:	73 metres
Candlepower:	1,250,000
Nominal Range:	26 miles
Structure:	Square tower on stone dwelling, 24 metres high

The lighthouse building is listed as a building of Architectural/Historic interest - category B.

These notes are largely based on information kindly supplied by the Northern Lighthouse Board, to whose Director of Engineering, Mr Bill Paterson, and his staff appreciative thanks are extended.

The Isle of May is a wild life sanctuary owned by Scottish Natural Heritage, to whose staff also The Watt Club is indebted.

THE ISLE OF MAY lies at the mouth of the Firth of Forth, 5 miles from the Fife mainland and 11 miles from East Lothian. The island's coastline is rocky; its surface covers 140 acres and slopes gradually from vertical 150 ft cliffs on the west side to sea level on the east. Its history dates back to the early custom of founding Monastic settlements on small islands and was manifest in the choice of St Adrian, when, in the ninth century, he and his brother monks established their retreat on the Isle of May. Later, in the twelfth century, King David I founded a monastery on the island which he granted to the Benedictine Abbey of Reading in Berkshire on condition that nine priests be placed there to celebrate divine service for the souls of the founder, his predecessors, and successors, the Kings of Scotland.

The Benedictine monks continued in peaceful occupation until the fifteenth century when the Monastery was possessed by the see of St Andrew. This act saw the disbanding of the settlement and with the ravages of marauding invaders and the passage of time the buildings gradually fell into disrepair.

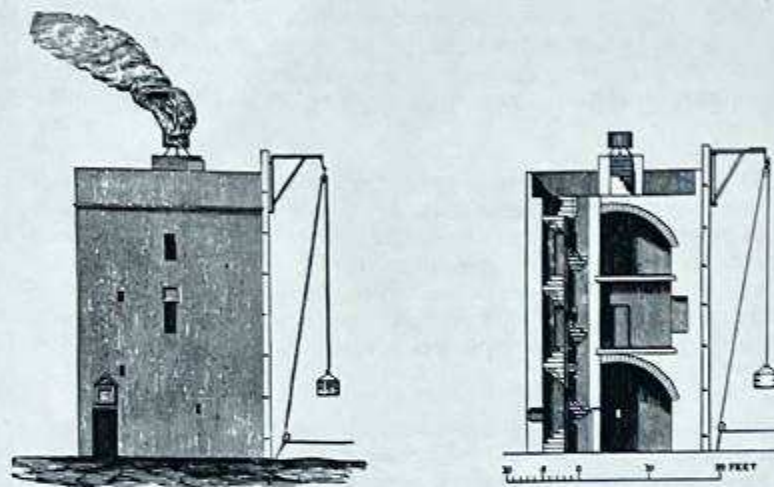
Today the only remaining evidence of the island's religious past is the fragmented remains of the chapel built in the twelfth century and dedicated to St Adrian.

The island is perhaps best known among naturalists for its bird observatory which was launched in 1934 under the auspices of the then newly formed British Trust for Ornithology. It was on similar lines to the famous German observatory at Heligoland and was the first in Scotland and the second in the British Isles, the other being on Stockholm Island off South Wales. The studies of bird migration, varied seabird breeding populations, the island's own breed of mice and the island plant communities are all added attractions for visitors, likewise the geology, the history and the lighthouses.

The ledges of the west and south cliffs carry a large breeding population of guillemots, shags, kittiwakes, razorbills and a few fulmars. Hundreds of puffins nest in burrows on the east and north parts of the island; the flatter areas of the island's surface are almost entirely occupied by herring and lesser black-backed gulls. The island was declared a National Nature Reserve in 1956.



A lighthouse has been operating on the Isle of May since 1653 in which year King Charles I granted a patent to James Maxwell of Innerwick and John Cunningham of Barnes to erect a beacon on that island and to collect dues from shipping for its maintenance. This light, however, was a crude affair and consisted of a stone structure, surmounted by an iron chauffer in which there burned a coal fire to serve as the illuminant. The coals were hoisted to the fire by means of a box and pulley and three men were employed the whole year round attending to the fire which consumed about 400 tons of coal a year. In 1790 a light-keepers' entire family was suffocated by fumes, except for an infant daughter, who was found alive 3 days later. Some years after the present lighting became operational, the old lighthouse was subsequently conserved in its present shortened form by Robert Stevenson at the instigation of Sir Walter Scott. It was originally as shown in the illustrations.



Despite the fact that the light was regarded in its time as one of the finest in existence, its value as an aid to navigation, judged by today's standards, must have been decidedly limited. The character of the light would naturally vary considerably with almost every change in weather conditions; one minute it might be belching forth great volumes of smoke and the next blazing up in clear high flames, while changes in wind directions would tend to alter its appearance. An easterly wind for instance would have the effect of blowing the flames away from the sea so that the light could scarcely be seen where it was most wanted.

An instance of this occurred on the night of 19 December 1810 when two of HM ships NYMPHE and PALLAS were wrecked near Dunbar because the light of a lime kiln on the coast there had been mistaken for the navigation light on the Isle of May. In 1814 the Commissioners purchased from the Duke and Duchess of Portland the Isle of May, together with the old coal lighthouse and all interests in light dues for the sum of £60,000. The present lighthouse was built in 1816 and was converted to a Rock Station on 9 August 1972 and looks a bit like a small castle with its protective battlements. The old lighthouse was subsequently conserved in its present form by Robert Stevenson at the instigation of Sir Walter Scott.

About a quarter of a mile from the lighthouse and on the east side of the island stands the tower and domestic buildings of the "Low Light". A light was first exhibited from this small lighthouse in April 1844 to act, in conjunction with the main lighthouse, as a leading light so that the mariner could avoid the treacherous North Carr Rock some seven miles north of the Island. However, when the NORTH CARR LIGHTSHIP was established in position in 1887, there was no longer a need for the Low Light and it was, therefore, permanently discontinued. The buildings are now occupied by members of the ornithological fraternity.

There have been many improvements to the light since 1816. On 22 September 1836 the light was changed to the first British dioptric fixed light, with an improved form of refractors made by Messrs Cookson of Newcastle.

Work began in June 1885 on the station on an elaborate scale. The ornate tower built in 1816 with its extra rooms for visiting officials, had accommodation for only three lightkeepers and their families. Dwellings were needed for three more, and an engine house, boiler house, chimney stalk, work-shop and coal store. These were built in a small valley containing a fresh-water loch, 270 yards from the light and 175 feet below it, and the current led up to the tower by conductors. The two generators, each weighing about 4.5 tons, the largest so far made, had a capacity of 8,800 watts, which could be controlled so that the whole or only part of the current was used.

The single automatically-fed arc lamp, with two spares in reserve, used carbons 1.5 inches in diameter. A core of soft pure graphite made these burn with great steadiness, and an average of 440 feet per annum was used. The tremendous current bridging the arc startled a stranger entering the lightroom by a sound like a circular saw passing through exceedingly knotty timber, according to one visiting lightkeeper. A three-wick paraffin oil lamp, kept trimmed and ready for use in case the electric current failed, could be lighted and put in focus in about three minutes.

The new light, which was shown from 1 December 1886, gave four flashes in quick succession every half minute. It had an elaborate dioptric apparatus which enabled Thomas Stevenson's dipping plan to be adopted so that the strongest beam of light could be directed much nearer the shore in hazy or foggy weather. The light was about three million candlepower when one machine was in use, and double that with two, or about 300 and 600 times more powerful than the old fixed oil light. The geographical range was 22 miles, but the light was picked up and recognised by sailors at 40 and 50 miles off by the flashes lighting up the clouds overhead.

To ensure efficient working, the whole establishment required the services of a Principal Lightkeeper with technical experience as Engineer-in-Charge, four Assistants with no special training - two for lightroom duty and two to attend the engines and boilers - and an auxiliary whose main responsibility was looking after the station horse and the carting of supplies, which was no light task, with a special supply of 150 tons of steam coal for the engines in 1888-1889. The total cost of the installation was about £22,000 including the lighthouse buildings already in use. Maintenance at not more than £1,050 per annum was about three times that for an oil light, but it was reckoned that the cost per candlepower produced was relatively small. Electricity indeed proved to be the most penetrating form of light, although its superiority was much reduced in hazy weather, and in really dense fog even the powerful light on the Isle of May could not be seen from the foot of the tower owing to the heavy cost of maintaining the generating plant and the greatly increased power of oil lights made possible by the incandescent mantle, the electric light was discontinued at the Isle of May in 1924. The station then cost about £2,884 per annum to maintain compared with £1,031 for an oil light. Some of the original equipment has become unsafe, and then the question of renewal was raised, D A Stevenson proposed reverting to an oil light, for which the Commissioners obtained Board of Trade sanction. The oil light was in turn replaced by the present electric light consisting of sealed beam lamp arrays.

In 1972 the station became a Rock and the resident families were moved to a Shore Station in Edinburgh. Reliefs were initially carried out by MV PHAROS but these are now effected by helicopter.

March 1986 saw the permanent discontinuance of the foghorns at the North and South ends of the island and the reduction in the number of duty keepers on the Rock being reduced from four to three.

There are now no keepers at the lighthouse, which became automatically operated from the Northern Lighthouse headquarters at 84 George Street, Edinburgh, in March 1989.