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INSTITUTE OF MARINE ENGINEERS
INCORPORATED.

SESSION



1903-1904.

President—SIR JOHN GUNN.

Local President (B. C. Centre)—LORD TREDEGAR.

Volume XV.

LECTURE

ON

LIGHTHOUSES & FOG SIGNALS.

BY

MR. J. SPARLING.

DELIVERED AT

58 ROMFORD ROAD, STRATFORD,

ON

THURSDAY, JANUARY 28th, 1904.

CHAIRMAN :

MR. W. C. ROBERTS.

Mr. SPARLING opened his lecture by referring to the general lighthouse authorities of the country—the Trinity House, the Scotch Commissioners of

Northern Lights, and the Commissioners of Irish Lights. The revenue for maintaining the coast-marking system of the British Isles was, he said, derived from the taxation of shipping entering and leaving our ports, and the receipts averaged nearly half a million pounds per annum. For the carrying on of their work the Corporation of Trinity House employed 200 lighthouse-keepers, 600 lightsmen and sailors, and 150 to 200 mechanics, the latter body of men being held ready to go at a moment's notice to any part of the British Isles to carry out repairs, etc., that might be necessary. The annual expenditure of the corporation was approximately £300,000. A noticeable feature of the lighthouses was their wild, isolated, and almost inaccessible situations, and the lighthouses built on rocks out at sea were structures which excited the wonder of all who saw them—they were justly regarded as monuments of the highest engineering skill. The force of inertia produced by the weight of material of which the lighthouse was constructed was a most important element in its stability. A weight of 4,000 tons was not likely to be easily moved by the power of the waves, and the new Eddystone lighthouse contained much more material than the amount he had mentioned. Mr. Sparling, in dealing with the numerous storm-beaten lighthouses that illumine our coasts, gave much interesting data concerning their construction and the enormous difficulties that had to be surmounted before even the foundations could be "well and truly laid." Referring to the case of the famous Eddystone, he said that in 1877 Sir James Douglass reported that Smeaton's tower was doomed. It had stood for over a hundred years, but the rock on which it was built had been seriously undermined, and arrangements were made as early as practicable for the erection of another tower on a firmer part of the rocks. The foundation of the Douglass lighthouse was laid below the level of low water. The shore depôt was established at

Oreston, Plymouth, and a twin-screw steamer, specially built for the purpose, was employed in conveying the material and workmen to and from the rock. The first landing was effected on July 17, 1878, and a brick coffer-dam was constructed, inside of which the workmen could proceed safely with their boring and cutting for the brief three or four hours which constituted a tide's work. Rock-boring drills, driven by compressed air from the barrack steamer, were used. The foundation-stone, weighing $3\frac{1}{2}$ tons, was laid in 1879, and the last stone was placed in position in 1881; both these stones were laid by the Duke of Edinburgh, the then Master of the Trinity House. The base of the Douglass tower was 44 ft., its light 133 ft. above high water; it had nine rooms besides the lantern, and contained 4,668 tons of stone, many of the blocks used weighing over three tons. The lecturer then dealt at length with the question of illumination, tracing the progress made from the time when candles were used right up to the present-day practice. In 1857 an experimental trial was made by the Trinity House of an electric light. So well were they satisfied that a practical trial was made with it at the South Foreland Lighthouse. The electric light was very beautiful as a lighthouse illuminant; there was nothing that could compare with its magnificent effect on a dark night, but opinions at the date of the installing of the Lizard light were divided as to its real value. Its dazzling brilliancy in clear weather was complained of, and they were not fully assured of its efficiency in thick weather and fog. Two months ago an alteration was made to the Lizard lights, and a few nights after the change had been effected a shipmaster reported that he had seen its luminous glare at a distance of sixty-two miles. The lighthouses that were lit by electric light were Souter Point, South Foreland, Lizard, and St. Catherine's. Various other phases of lighthouse equipment and construction were explained by Mr.

Sparling in an interesting manner, the numerous lighthouses named being shown on the screen by the lantern. A number of lantern fittings, lenses, and a fog syren were also exhibited, and their working explained.

Mr. JAMES ADAMSON, the Hon. Secretary of the Institute, proposed a very hearty vote of thanks to Mr. Sparling for his lecture, and the proposition, having been seconded by Mr. J. R. RUTHVEN, was cordially agreed to.

A vote of thanks to the Chairman for presiding brought the meeting to a close.

It was announced that Mr. Sparling would deliver another lecture on Monday, February 8, taking "Lightships" as his subject. Ladies were invited to this meeting, and showed their appreciation by a large attendance, manifesting great interest both in the lecture and demonstrations, as became those having vital concern in the possibilities and dangers of sea navigation.



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The Mariner.	do.
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