

Case of the s.s. "NAUSICAA".

The s.s. "NAUSICAA", of 5,054 tons gross, was built in 1922 by the North of Ireland Shipbuilding Co., having been launched on the 11th March, 1922. She was classed 100A1 "Carrying petroleum in bulk", "Fitted for oil fuel". Her owners are the Compagnie Auxiliaire de Navigation, Paris.

In January, 1923, upon the vessel being examined in dry dock at Antwerp, the Surveyors reported that a number of plates were found pitted and the points of a large number of rivets were found to be corroded. The corrosion on the starboard side was more pronounced than that on the port side, and the E strake was most affected. The vessel was partly painted when the first examination was made, and it was therefore impossible to ascertain with exactitude the full extent of the corrosion. Approximately 35 plates were more or less affected.

The plates used in the construction of the vessel appear from the first entry report to have been made on the Siemens open hearth acid and basic process and to have been supplied by Messrs. Stewarts & Lloyds, Ltd., Consett Iron Co., Ltd., Messrs. David Colville & Sons, Ltd., and the Phoenix Act. Ges., Dusseldorf.

In view of the pitting being confined to a definite line in the ship, it was suggested that the corrosion was probably due to the action of the water in which she had been lying, rather than inherent defects in the material, and inquiries were made as to the ports at which the vessel had been lying.

After launching at Londonderry she lay afloat for a period of 85 days and her subsequent stay at any port was not longer than 14 days at New Orleans and 13 days at Philippeville.

The owners subsequently had test pieces taken from two plates and submitted for chemical analysis by Monsieur Guillet, Director of the Ecole Centrale des Arts et Manufactures, Paris. A translation of Monsieur Guillet's Report (marked 'A') is attached. This Report was forwarded to Dr. Milton, who drew up a reply, dated 31st July, 1923 (marked 'B' attached), giving it as his opinion



that there was nothing in the report to indicate that the quality of the steel was at fault, and that he considered that the absence of protective paint from the corroded surfaces was the real cause of the trouble.

Monsieur Guillet made a further report (marked 'C' attached), to which Dr. Milton replied in report marked 'D' attached. *Missing*

In a letter, dated 24th July, from the Society's Surveyors at Belfast, the following paragraph occurs:-

"In connection with this pitting it would be interesting to learn whether this vessel loads oil at Port Arthur, Texas. I understand the vessels lay on the mud at that port while loading and that considerable corrosion takes place in the bottom of the vessels in consequence, due probably to sulphur in the mud." *Pitting*

In a letter, dated 10th August, the builders raised the question as to whether the corrosion might be attributable to the use of sand when rolling the plates, and a reply was given on the 23rd August (see enclosures marked 'E').

The question of the influence of mill scale on corrosion is raised by the builders in a letter dated 22nd November, 1923 (Enclosure marked 'F'). *Missing*

In a letter dated 1st December the builders raised the question as to the effect of gasoline or petrol as a corrosive agent (enclosure marked 'G'). *Missing*

Enclosed is a photograph of the expansion of the shell showing where the corrosion has taken place (marked 'H'). *Missing*

The vessel was again in drydock at Marseilles in November 1923 when a special examination was made of the outside plating in C, D, E & F strakes on both sides, and in some parts active corrosion was found. The parts were specially cleaned and painted and it was recommended that further examination in dry dock should take place within six months.



Further specimens of the steel were cut out on this occasion for testing purposes; but whether these were tested, and if so, with what result, we do not know.

The vessel is expected to be placed in drydock at Southampton on Monday, the 26th instant, and to be available for inspection on Tuesday, the 27th instant, when a further special examination of the plating is to take place, in which Dr. Milton has agreed to join and the Owners suggested that the Society should endeavour to obtain the benefit of the advice and opinion of a high metallurgical and chemical authority.



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