

Dr. Guillet said - 21st June, 1923.

"These plates are bad all over, even in those parts still intact, and it is to be feared that any plates rolled from this smelting, or similar smeltings, will be subject to corrosion..... The results obtained point to the insufficiency of Lloyd's tests".

Dr. Milton remarked on Dr. Guillet's report:-

"There is nothing in the analysis to indicate that the steel was inferior in any way From the descriptions the structure does not appear to be unusual. There is nothing in this report to give the least indication that the quality of the steel was at fault".

"The Nantes Surveyor suggests that five of the patches of corrosion are in positions where shores and launching ways might have prevented the application of paint. It would appear from the documents that the vessel had not been in drydock for painting since she was launched until the corrosion was discovered at Antwerp; it is therefore very probable that absence of protective paint from the corroded surfaces and rivet points is the real cause of the trouble experienced. If this supposition is correct, and if due attention is paid to the places in future, no further deterioration is likely to occur".

Dr. Guillet made the following observations on Dr. Milton's remarks:-

"It is truly surprising to read the expression 'there is nothing in the report which leads one to suppose that the quality of the steel is bad' presuming he (Dr. Milton) has examined, even in an entirely superficial manner, the micrographic figures 3 and 11".

"The absence of paint on certain areas after the launching of the ship is insufficient to explain the corrosions of such marked depth"

To these criticisms Dr. Milton replied 13th November, 1923 -

"These defects are all such as may be expected if the paint of the vessel had been damaged. The rivet points always protrude somewhat above the plate surfaces and are therefore most susceptible to having the paint rubbed off. The patches of corrosion are what would be expected if the paint is rubbed off in patches. The grooves are most probably the result of the paint being removed by local scratching. It will be noticed that where the directions of the grooves are mentioned they are recorded as being either horizontal or vertical. The long ones are always horizontal. These would be the result of scratching in the direction of the vessel's length, whilst vertical scratches would be caused by the vessel rising or falling with the tide when moored alongside a wharf.

"All steel will corrode if exposed to water or weather if the surface is not protected by paint, and it is usually found that where protective coatings are removed locally leaving large portions effectively covered, the corrosive action on the exposed parts becomes intensified forming 'pitting' and 'grooving' where the exposed portions are small, and 'corroded patches' where they are larger.

"That the chemical composition of the steel is not at fault is shewn by the iron rivets being attacked, by the fact

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"that there is no difference in the chemical composition
"of the plates where they are unattacked, and where the
"corrosion has been most intense, and by the position of
"most of the defects being on the strakes most likely to
"be affected by outside influences".

Mr. Trevisa Clark wrote on 22nd November, 1923 to the Owners

"It is a most significant fact that corrosion or pitting
"or slight surface defects in the plating, are practically
"confined entirely to the starboard side, and between
"the light and load lines. The position in which the ship
"was built at Londonderry has no bearing on this, and,
"after the launch, she lay in a deep water berth under our
"heavy crane.

"The cause of the corrosion or pitting on the starboard
"side is still obscure, and while no defects of any kind
"were observed by Lloyds, or by your Surveyors, or by
"ourselves during construction, it is possible that the
"ship has been grinding against piles and rough projections
"in some port where acid has been present in the water or
"oil cargo, thus setting up active attack.

"We are most anxious to discover the cause of the trouble,
"the more so, as a tank steamer which we built at the same
"time for the Anglo-Saxon Petroleum Co. from steel supplied
"by the same Rolling Mills, has been found to be entirely
"free from this trouble".

Mr. Nicholas reported 28th May, 1924 -

"A careful survey was held, special attention being given
"to each of the portions of the shell plating which had
"previously been reported to be corroded.

"At each of these parts, which were reported to have been
"carefully scraped clean and coated at the previous
"drydocking with three coats of anticorrosive paint as well
"as with the usual anti-fouling composition, the paint was
"well adhering to the plates and no appreciable further
"corrosion had taken place.

"In the worst places the paint was now chipped off to the
"bare steel in order to verify this.

"At other parts the paint was in many places blistered, and
"when scraped off, the plates beneath were black with oxide
"but no measurable corrosion had occurred.

"In my opinion, in which all the experts and other present,
"concurred, the active corrosion which had previously been
"observed had been stopped by the paint which had been
"applied. It was agreed by all that what the vessel
"required was to have the loose paint scraped off, and to
"be carefully painted with the same anti-corrosive paint
"which had proved to be effective.

Mr. Law reported on the 29th May, 1924 -

"It seems probable that the original corrosion has been
"due to the vessel coming in contact with some obstruction
"which has scraped off the paint and laid bare the steel
"to the action of corrosion. Whatever the original cause,
"however, I am satisfied (and I believe this view is shared
"by Dr. Milton and Mr. Nicholas) that the corrosion has now
"been stopped and that provided the plates are painted there
"is no cause for any apprehension.

"It would appear that the Owners have been alarmed by the

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"report of M. Guillet which has led them to believe

- "(1) that the steel from which the plates have been rolled was of bad quality and that serious corrosion may start on any part of the ship:
- "(2) that such corrosion will proceed more rapidly as time goes on, the surface of the plates being less liable to corrosion than the interior, and
- "(3) that painting is not effective in stopping the corrosion".

"As regards the quality of the steel there is at present no evidence to show that it is in any way defective, whereas the present condition of the plates is proof that the last painting carried out six months ago has been entirely effective in preventing further corrosion of the parts previously affected".

Mr. Law further reported on 7th August, 1924

"1. That a distinction must be drawn between practical and research methods of testing, and that, in the present state of our knowledge, Lloyd's tests are entirely satisfactory and sufficient".

"2. That the plates exhibit no feature which would justify an Inspector, working under any existing specification that I am aware of, in rejecting or even taking exception to them.

"3. That the opinions expressed in my report of the 29th May are confirmed - viz. that the corrosion has been caused by the removal of paint, but that it has now been stopped, and provided the plates are painted there should be no further trouble due to corrosion.

On the 29th December, 1924, the Builders transmitted two further reports on the "NAUSICAA" plates (presumably by Mr. Guillet) which had been forwarded to them by the owners.

The Builders enquired whether anything in the reports threw fresh light on the situation and in any way affected the conclusions arrived at by Mr. Law.

In reply the Builders were informed on the 16th January, 1925

"I am directed to state that the Committee of this Society having adopted the unusual course of appointing a leading steel expert to investigate this matter, together with the Society's own leading experts, are perfectly satisfied with the result of such investigation, and do not consider that the present reports contain anything to lead the Committee to doubt the soundness of the conclusions then arrived at.

"In these circumstances the Committee do not see that any useful purpose would be served by carrying the matter any further".



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