

COPY.

MIDDLESBROUGH.

18th January, 1939.

Dear Sir,

Referring to your letter of the 14th ultimo on the subject of rivets taken from the forward boiler of the Steamer, "MURITAI", this matter has now been investigated and I think it well to submit my report thereon.

SAMPLES FOR INVESTIGATION AND THEIR DISPOSAL.

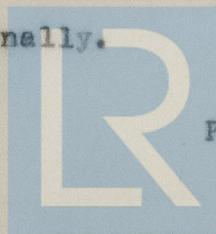
These consisted of seven rivet points - four of them completely fractured and three with portions of the shanks attached. It was noted that three of the fractured points had a heavy (apparently alkaline) incrustation on their under surfaces.

Several of the samples were sectioned and roughly polished and ultimately one of the points which had the heaviest incrustation was selected for finishing and microscopical examination.

This small sample was seen to contain a network of fine cracks all typically intercrystalline in character and containing corrosion products, presumably Iron Oxide.

In illustration I have prepared and am including herewith Micrographs Nos. 567 and 568 X 100 diameters which show the cracked areas both before and after etching.

The fine grain of the etched sample will be noted and it will also be observed that the material is not overheated as does happen occasionally.



© 2021

P.T.O.

Lloyd's Register
Foundation

008087-008095-0019 1/2

COPY.

-2-

18th January, 1939.

There is, as might have been anticipated, some evidence of distortion of the grains due to cold working although this feature is not pronounced.

CONCLUSIONS.

In my opinion the evidence points to the failure of the rivets having been caused by chemical action.

I am, Dear Sir,

Yours faithfully,

Wm. G. Gray

The Secretary,
LONDON.

Enclosure.



© 2021

Lloyd's Register
Foundation

0019 2/2