

# Lloyd's Register of Shipping,

Lloyd's Bank Chambers,

Middlesbrough, 18th January, 1939.

LLOYD'S REGISTER  
 Received  
 19 JAN 1939  
 Ansd. 19/1/39  
 LONDON

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.

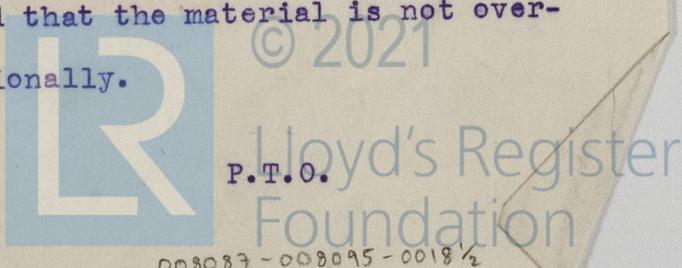
These consisted of seven rivet points - four of them completely fractured and three with portions of the shanks attached. It was noted that three of the fractured points had a heavy (apparently alkaline) incrustation on their under surfaces.

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.



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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,

*Louis Ripley*

The Secretary,  
LONDON.

Enclosure.



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Lloyd's Register  
Foundation

Referred to the Chief Engineer's Office

19 JAN 1939

*[Handwritten signature]*

Enclosure

LONDON

The Secretary

*[Handwritten signature]*

MEMORANDUM

I am, please,

refers

to the fact that the above mentioned subject has been referred to the Chief Engineer's Office for his consideration.

CONCLUSIONS

The above mentioned subject is not recommended for approval by the Chief Engineer's Office and the same should be referred to the Chief Engineer's Office for his consideration.

SECRET

