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23rd June, 1903.

Dear Mr. De Rusett,

Thanks for your diagrams showing the comparative strength of various vessels.

With regard to the same I may say that the S.S. "KOREA" and the S.S. "DEUTSCHLAND" are unclassified vessels, the strength of which I think ought not to be taken as a standard. We have no knowledge of the behaviour of the first vessel as she has only lately been built. She is, however, not up to our standard and is intended for the Pacific, and there is no proof of the sufficiency of her scantlings for North Atlantic work. The second vessel on the other hand is known to have given a considerable amount of trouble at various ~~places~~ ^{parts} of the structure.

In the case of the S.S. "OCEANIC" I think you have considerably overestimated the bending moment. I understand the ordinary load draft of this vessel is 29'. 6", which would give a smaller displacement and reduce your stress to about 8 tons per square inch.

The S.S. "MILWAUKEE" is not a very good vessel to take as a standard. The material at the top ~~is~~ ^{is} poor (partly owing to the vessel being commenced with a poor bridge

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and forecastle) not distributed in so efficient a way as is the practice now in the case of shelter deck vessels. The calculated stress would therefore be greater than usual. The bending moment you estimate for this vessel appears very high compared with other vessels of this type, and as I have not the detailed drawings and particulars of your calculations I am unable to see the cause of this.

In the case of the S.S. "IVERNIA" I also think you overestimate the bending moment. The draft of this vessel I understand is usually only 25 feet going out and 30 feet coming home. This alone would reduce your estimated stress to about $8\frac{1}{2}$ tons at the bridge deck. The factor you use for obtaining the bending moment, viz:- 29.25, is lower than I would have expected from the results of calculations for other vessels of this type.

We also make the bending moment in the S.S. "CAMPANIA" somewhat less than estimated by you and the stress correspondingly less.

You make the factor for the bending moment in the 760 feet design the same as in the case of the S.S. "MILWAUKEE" and the S.S. "IVERNIA". I would certainly not have expected this seeing that there is a very great deal of difference in the types of these vessels. We usually find that the increase in the stress due to the burning of the coal is greater in the vessels with the greater consumption of coal, and I take it that the relative bunker capacity in the 760 feet vessel



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is larger than that of the two other vessels.

I do not think it would be desirable in dealing
special. with an important vessel of this kind to be guided by a few
~~odd~~ vessels, the stress of which is in some instances beyond
the proper limit. I think $8\frac{1}{2}$ tons per square inch of solid
plate is a fair average stress for large vessels known to have
done their work satisfactorily. This is about what it would
be on your basis in the case of the S.S. "IVERNIA" allowing
for a somewhat smaller displacement, and it is about half a
ton more than the stress on the S.S. "OCEANIC".

Signed
H. J. Cornish
23/6/03.



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