

JOHN MACKAY MURRAY, M.B.E., B.Sc., M.I.N.A., M.I.E.S.

will say:-

I am Principal Ship Surveyor for Research to Lloyds Register of Shipping.

The plans for the proposed conversion of H.M. L.C.T. 430 were examined under my supervision in the London Office with a view to classification, and the scantlings and arrangements were found suitable for the Class A - "with freeboard" corresponding to a summer moulded draught of 6 ft. 6 ins." "for service in the Eastern Mediterranean and the Red Sea". The plans were amended where necessary to bring them into line with the Committee's practice, based on their experience of ships engaged in the same or similar trades, and returned to the Owners Representative, Mr. C.V. Hughes, bearing the Committee's stamp, and a copy of the plans as amended were sent to Mr. Lloyd Roberts for his guidance. The various plans were submitted over a short period of time.

The distinction between Class 100A - and Class A- is as follows:-

CLASS 100A - is assigned to steel vessels built in accordance with the Society's Rules and Regulations and the scantlings set forth in the Tables given in the Rules. This class may be modified with the addition of such terms as "with Freeboard" or "For Special Service" in which cases the scantlings are equivalent to the general requirements of the Rules.

Class A- without any numeral prefixed, on the other hand, is assigned to vessels intended for services which are less rigorous than the full ocean-going services contemplated for the ship classed 100A- and where some relaxation in the scantlings may be permitted. When the Class A- is assigned the draught is always less than the maximum geometric draught, and a notation "for Special Service" given



The "PAMAGUSTA" which was classed A- "with Freeboard" "For Service in the Eastern Mediterranean and Red Sea", was built of scantlings which were, in general, less than those laid down in the printed Rules of the Society, but the construction of the vessel was such that the main structural strength was not impaired thereby and was of a standard equal to that required for a ship having full class. The local scantlings which were less than the scantlings given in the Rules were considered to be adequate from the strength point of view, but did not have the margin for deterioration in the subsequent life of the ship provided in the scantlings given in the printed Tables.

The maximum geometric draught which could be assigned to the "PAMAGUSTA" is 6'-9", the draught assigned for service in the Eastern Mediterranean was 6'-6"; the draught assigned for the voyage to the Mediterranean was 5'-10 $\frac{1}{2}$ " and the actual draught at departure was about 5'-0".



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After the vessel was lost, as a matter of interest an investigation was made into the stresses on the vessel in the condition of loading at departure to see if that loading was abnormal or in any way calculated to impose unusual stresses on the vessel during the voyage. In point of fact it was found that the loading was not unreasonable. In the calculations certain assumptions were made regarding the filling of double bottom tanks and other loading to make the condition agree with the information available. It has been found:-

1. Section modulus of the ship at the top of trunk is 670 in.<sup>2</sup> ft., *in accordance with para. 44 (b) of the Rules, 1921.* whereas the section modulus ~~required by Load Line Committee for~~ a vessel having a draught of 5 ft. this being the departure draught, is only 455 in.<sup>2</sup> ft.

2. On a wave equal to 1/20th of the ship's length the maximum stress at the trunk deck in the above condition was 5.2 tons per square inch compression in the sagging condition and 5.9 tons per square inch tension in the hogging condition. These stresses are slightly below those contemplated by the Load Line Regulations if the usual formula  $BM = \frac{\Delta L}{35}$  where  $\Delta =$

~~.75L x B x d + 35 is used.~~ and  $L =$  *length of ship.*



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