

g.b. Addl  
Steel Twin Screw Steamer "ABHONA".

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Dimensions ; 390' x 49'-11 $\frac{1}{2}$ " x 24'-6" Moulded Upper Deck

32'-6 $\frac{1}{2}$ " Moulded Shade Deck

Scantling Numerals ; 74.46 & 29040

Proportions ; Length - 11.98 Depths to Shade Deck

9.6 Depths to Bridge Deck

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Copy of midship section finally approved on the 30th December last.

The following structural plans and sketches were submitted for examination and approved, viz;-

Midship section.

Profile and deck plans.

Strengthening in way of openings in topsides.

Propeller brackets and stern frame.

Rudder plan.

Plan of after framing.

Plate doors on bulkhead No. 132..

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GENERAL.

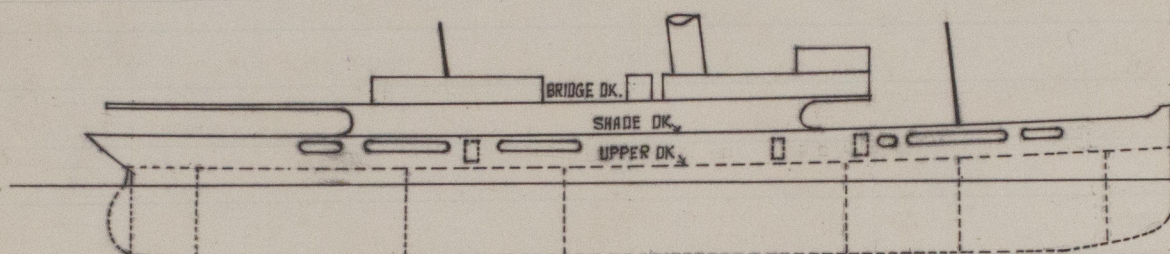
The "ABHONA" (No. 37 in Supplement) is a steel twin screw steamer built in 1910 - 10 mo. by Messrs. A. Stephen & Sons, Ltd., Glasgow, for the British India Steam Navigation Co., Ltd., and classed 100A1, Shade Deck, and intended for that Company's Eastern Service.

The vessel is of ordinary steamer rig, having two pole masts, and one funnel. Immediately above the upper deck is a strong structural erection - the shade deck - extending fore and aft, and having openings in the sides in the forward and after bodies for ventilation purposes, and having in addition gangway and coaling doors fitted. Above the shade deck is fitted a bridge deck, which is an enclosed structural erection for about 53 ft. forward and 106 ft. aft of midships

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and is continued to the after end of the vessel as an ordinary promenade deck supported by stanchions at the sides. Above the bridge deck are fitted deck houses and machinery casings.

A diagrammatic profile sketch of the vessel is given below.



The sheers of the vessel are as follows:-

Sheer at stem 7'-4"

Sheer at  $\frac{1}{8}$  length from stem 4'-5 $\frac{1}{2}$ "

Sheer at post 3'-4"

Sheer at  $\frac{1}{8}$  length from post 1'-3"

The displacement block co-efficient at load draught is .62 and the draught of the vessel as permitted by the Freeboard Tables and Regulations is 20'-6 $\frac{3}{4}$ " for summer and 20'-2 $\frac{1}{4}$ " for winter measured from the bottom of keel in each case.

STRUCTURAL STRENGTH. The vessel has six watertight bulkheads extending to the upper deck - the number prescribed by the Rules for a vessel of her length. There are therefore, in addition to the two peak bulkheads, one bulkhead separating Nos. 1 & 2 holds, one dividing the engines from boilers, and one at after end of engine space and at fore end of boiler space respectively. The watertight sub-division is not abnormal as regards lengths of holds, etc. A cellular double bottom (656 tons) is fitted between the peak bulkheads of the Rule construction. The forward and after peaks are also utilised for water ballast, the capacity of the former being 50 tons, and that of the latter 45 tons. Two complete steel decks are fitted - the upper deck and shade deck - and both covered with teak sheathing. A steel deck is also fitted on the bridge deck for the length for which it is structural, and

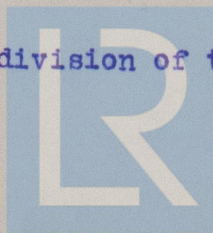
this also is sheathed with teak. The second deck is plated, but is covered with 3" pitch pine, and the third deck which extends from the after engine room bulkhead to the after peak bulkhead is a complete steel watertight flat covering the shafts. The arrangement of the topside materials follows closely that provided for in the Rules of the Society. The strength deck is the shade deck except in way of the enclosed bridge where the latter is the strength deck. This is strictly in accordance with modern practice, and is generally considered to be the best method of arrangement. The frames and beams throughout are in accordance with the requirements of the Rules, or equivalent thereto.

The structural arrangements in this vessel are satisfactory; indeed in some respects - for example, in respect of the number of decks and of the relatively moderate sheer - they are such as to contribute materially to her structural efficiency.

LOCAL STRENGTH. Several sketches dealing with proposals regarding local strength and compensation were submitted to this Office (see page 1). Of these the most important are the proposals showing the arrangements in way of the termination of the bridge, and in way of the various openings in the shade tween decks, and also that showing the framing at the after end. The vessel is strengthened in the usual manner in way of all breaks and openings in the vicinity of the strength decks so as to provide against the increased stresses which these discontinuities involve. The strengthening takes the form of doubling plates on the deck and sides, plating of increased thickness, etc. The after framing is in accordance with the recent practice of the Committee for the construction of this part.

Design.

The watertight sub-division of the vessel has already



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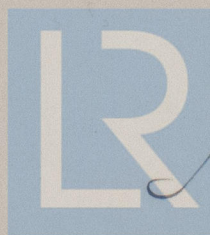
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been alluded to, and it was stated that that was not abnormal. The other most important consideration affecting the design of the vessel is that defined by the general term "stability". It may be pointed out that nothing which is of much value can be said relating to the stability of any particular vessel unless it is based upon full information relating to form, disposition of weights of hull, cargo, water ballast (if any), coals, stores, etc. Nothing definite is known of these elements in the present case, and therefore it is impossible to express any definite opinion upon the stability of this vessel while on the voyage from Plymouth to Rangoon. It has been stated that the vessel carried no cargo, but that 2,000 tons of coal were on board, but nothing can be based upon that information since it is not stated in what part of the vessel the coal was carried, or how it was stowed.

As will be seen from the profile sketch of the vessel, attached hereto, she had a considerable extent of superstructure above the upper deck, the sides of which were open in places to facilitate ventilation of the spaces where coolie passengers were to be carried. These high superstructures necessarily tend to raise the centre of gravity of a vessel, and when the sides are open in places as in this instance the vessel has not so large a range of stability as is the case with high sided vessels in which the side plating is intact.

While calling attention to these points it is yet considered that in the absence of detailed particulars of the manner of loading there does not appear to be any prima facie reason for supposing there was any deficiency of stability in the vessel.

C.F.



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30.11.10.

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General Committee

Thursday, 1<sup>st</sup> December, 1910.

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