

*Copy sent to*  
I.H. *Mr Cornish at Newcastle*

3rd September, 1904.  
Saturday.

THE SECRETARY,

LLOYDS REGISTRY,

71 Fenchurch Street,

LONDON. E.C.

Dear Sir,

CUNARD EXPRESS STEAMER No. 735.

Following the visit of Mr. Cornish yesterday we have the pleasure to hand you herewith a copy of our notes on the interview which our representatives recently had with your staff in London and which will you be good enough to examine and correct if found to be inaccurate or not sufficiently inclusive.

We hope to submit revised Midship Section and plans which we have made in accordance with the agreement made during the interview referred to. We will also quote the bending moment which has been revised to the present lines and disposition of weights.

We are, dear Sir,

Yours faithfully,

For  
SWAN, HUNTER, & WIGHAM RICHARDSON, LIMITED.

*(Sgd) E. W. de Russell,*  
*Manager.*

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NOTES OF INTERVIEW WITH THE REPRESENTATIVES OF LLOYDS AND  
JOHN BROWN & COMPANY IN LONDON.

Present on the 25th August, Mr. Peskett, Mr. Cornish & Staff, Messrs.  
McGee, Luke, DeRusett and Meuwissen.

On the 26th Mr. Bain, Mr. Cornish & Staff, Messrs. McGee, Luke,  
DeRusett and Meuwissen.

On Saturday 27th, present Mr. Cornish & Staff, Mr. DeRusett and Mr.  
Meuwissen.

On Thursday general principals were discussed relating  
to the structural features of the designs and especially the  
bending moment and the use of high tensile steel with its tests.  
On the 2nd day details in connection with high tensile steel  
tests and general structural design were discussed, also the size  
of anchors and chains, and on the 3rd day the time was entirely  
devoted to the settlement of the size of the beams, pillars and  
beam girders. All the main structural parts being then settled  
with the exception of the thickness of deck plating and topside  
shell doublings which will be subject to the calculation of the  
bending moment.

HIGH TENSILE STEEL.-

Mr. Cornish said that his Society would be prepared to  
adopt high tensile steel provided that it conformed with the  
tests which had been made by Messrs. Colville for John Brown &  
Co., the requirements being as follows:-

GENERAL CONDITIONS.-

The test pieces to stand a tensile stress of 34 to 36  
tons per square inch.

Elastic limit 20 tons.

Elongation 20% on 8".

The Tests to be as follows:-



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For 10/20ths thickness and under, the tests as a minimum to be as for ordinary steel. Further tests at Surveyor's discretion. For steel above 10/20ths thick the tests to consist of tensile, temper and cold bend.

Every plate to be subject to these tests to begin with, but on it being proved that the material is quite satisfactory and regular, then either the temper or cold bend tests will be dispensed with at Surveyor's discretion, but every plate is to be subject to the tensile test together with either the temper or cold bend test.

The Bulkhead plating may be joggled and punched if found to be satisfactory after being tested.

The Rolling Mills to make tests from the bulkhead plates after punching same and also after drilling, but it is understood that all plates thicker than 10/20ths are to be drilled. In the test pieces of the bulkhead plates the punched and drilled holes are to take the same sized rivets in each instance, say three holes in each rivetted piece.

The plates to be drilled at all boundary bars.

It is understood that the bulkhead stiffening bars will be of ordinary ~~size~~ steel.

Where high tensile steel is passed in lieu of ordinary steel, the diameter of the rivets, if of ingot steel to correspond to the rule size for plates of ordinary steel thickness.

#### ANCHORS & CHAINS.-

Two bower anchors each of 200 cwt. and one of 155 cwt. to be supplied. The chains to be 3 $\frac{1}{2}$  diameter by 330 fathoms long. Size of stream chains to be submitted. The Makers names of the Anchors and Chains to be submitted to the Cunard Co.

WATERTIGHT BULKHEADS.- Plating to lower deck of high tensile steel 10/20 to 9/20 equally divided, stiffening bars of mild steel Bulkheads above lower deck as previously agreed. The longitudinal bulkheads to be continuous, cutting ~~a~~ <sup>the</sup> athwartship bulkheads to be plated fore and aft, seams double rivetted, butts shifted.

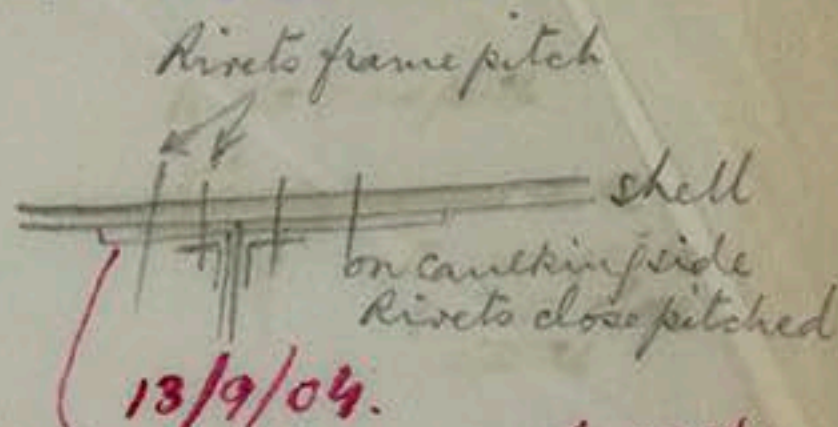


The ground bar of the longitudinal bulkheads may be 5 x 5 x 12/20th or two double bars 4 x 4 x 12/20th (since reduced to 10/20) Top bar to be 5 x 5 x 10/20th. 4 bars connecting the longitudinal and athwartship bulkheads  $3\frac{1}{2}$  x  $3\frac{1}{2}$  x 10/20th. All  $\frac{1}{8}$ " Rivets to Lower deck. The ground bar of the athwartship bulkheads to be double, each 4 x 4 x 12/20th or If joggled  $4\frac{1}{2}$  x 4 by 12/20th (Since reduced to 10/20th).

#### BULKHEAD SHELL LINERS.-

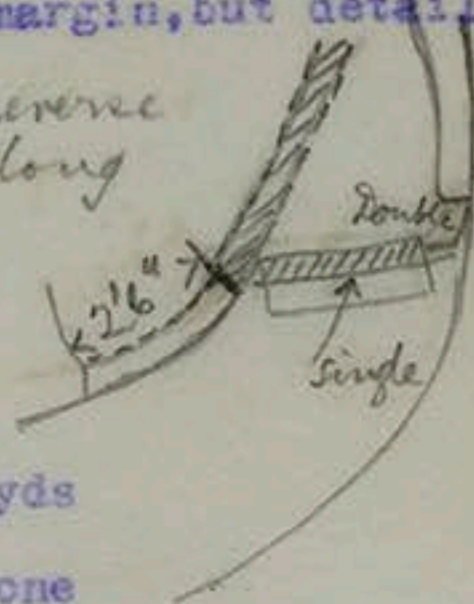
To be as per marginal sketch:-

Web to be connected to shell between double *diamond shaped* *where close space was* *at the Hunter's suggestion*  
~~xxx~~ joggled bars of  $4\frac{1}{2}$  x 4 x 10/20th and toe of knee connected to tank top by channel 9 x 4 x 4 x 12/20 .  $\frac{10}{20}$



#### FRAME FEET.-

To be connected to tank top as per margin, but detail sketch to be submitted to Lloyds:- *either the reverse bar carried down 2-6 or a back bar 5 ft long 2-6 of which is to be carried down*  
 The SHELL within the double bottom to be painted.



PLANS.- Revised plans to be submitted to Lloyds in duplicate, black and white photographs, and one copy of Midship Section to be mounted. To be accompanied by the pro forma plans which were discussed on the 25th, 26th and 27th August.

BENDING MOMENT to be calculated and sent to Lloyds with the revised plan; the Vessel being under the worst condition and on a wave of her own length, the height being 1/20th of the length.

The tensile stress on the upper member of girder not to exceed 10 tons per inch with ordinary steel under the conditions arranged with Lloyds, viz: after deducting rivet holes and disregarding wood sheathing, the plating of decks to be taken from ship's side to coaming of openings, including the coaming bars.



Builders to submit proposals shewing the extent of high tensile steel, and where hydraulic rivetting will be employed. Also a proposal for deck sheathing, as already settled with the Cunard Company.

Agreed to take  $1/20''$  off the thickness of tank top for the full width in wake of longitudinal bulkheads except the centre strake and  $1/20''$  off each of the five bilge strakes, reducing them to  $21/20''$ .

For  
Siran Hunter Wigham Richardson (Ltd)  
(Initialed) E. W. de R.