

# MOMENT OF INERTIA CALCULATION.

4/10/04

Modulus of Elasticity increased 20%

Name of Vessel

Builder's Name and Yard No.

R.H. 735

~~Full~~ DIMENSIONS 71.0 x 87.5 x 60.5 CLASS

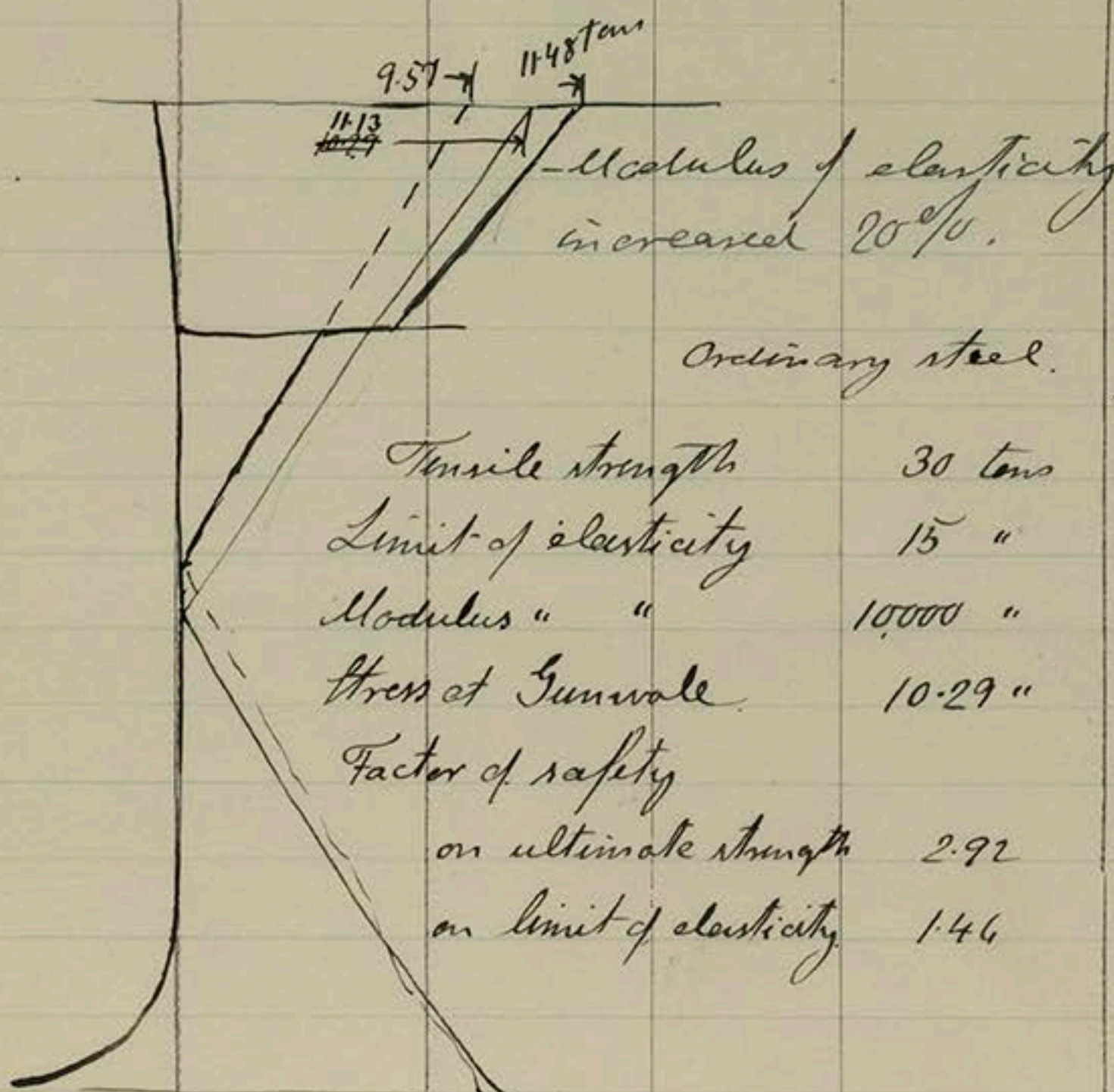
Distance of Assumed Neutral Axis above Base

30.0  
31.3  
61.3

Depth of Girder

60.5 in  
.8  
61.3

ITEMS.	DIMENSIONS.	AREA.	C. G. FROM NEUTRAL AXIS.	MOMENT.	MOMENT OF INERTIA.	CORRECTION $\frac{1}{12} A H^3$ .
Below		1888		43337	1,116,630	
Above + 10% = 20% H.T.S.		1824		36197	895,370	
<u>in top flanges</u>		3712		17140	2012,000	
				1.92	13,700	
				33.22	1998,300	$= \frac{1}{2} I$
					60160	$= \frac{1}{2} I$
$\frac{960,000}{120320} \times \frac{4}{5} = 9.57 \text{ tons.} \quad +20\% = 11.48$						
$\frac{960,000}{142360} = 6.74 \text{ tons.}$						
$33.22 \text{ at Gunwale}$						
$28.08 \text{ at Keel.}$						
$120,320 = \frac{1}{2} I$						
$142,360 = \frac{1}{2} I$						



Ordinary steel.

High tensile steel  
scantlings reduced 10%.

Tensile strength	30 tons	35 tons
Limit of elasticity	15 "	20 "
Modulus " "	10,000 "	10,000 tons. 12,000 tons
Stress at Gunwale	10.29 "	11.13 " 11.48 "
Factor of safety		
on ultimate strength	2.92	3.14 3.05
on limit of elasticity	1.46	1.80 1.74.



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