

PRELIMINARY

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

GRV. REPORT N° 23178.

Ship's Name <i>Messrs. Geo. Brown & Co. (Marine) Ltd., Greenock. Yard N° 241</i>	Official Number	Nationality and Port of Registry <i>Danish</i>	Gross Tonnage <i>800 approx.</i>	Date of Build	Port of Survey <i>Greenock</i>
Moulded Dimensions: Length <i>190'-4 1/2"</i> Breadth <i>32'-6"</i> Depth <i>13'-0"</i>					Date of Survey <i>30th Nov. 1945</i>
Moulded displacement at moulded draught = 85 per cent. of moulded depth <i>1300</i> tons					Surveyor's Signature <i>R.A. Welch</i>
Coefficient of fineness for use with Tables <i>.68</i> ✓ (<i>.665 actual</i>)					Particulars of Classification <i>100 A1 Contaminated</i>

Depth for Freeboard (D). Moulded depth ... <i>13'-0"</i> ✓ Stringer plate ... <i>38"</i> ✓ Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ <i>.03</i> ✓ Depth for Freeboard (D) = <i>13.03'</i> ✓	Depth correction. (a) Where D is greater than Table depth (D - Table depth) R = $(13.03 - 12.69) 1.465 = +.50"$ ✓ (b) Where D is less than Table depth (if allowed) (Table depth - D) R = ✓ If restricted by superstructures ✓	Round of Beam correction. Moulded Breadth (B) <i>32'-6"</i> ✓ Standard Round of Beam = $\frac{B \times 12}{50} =$ <i>7.80"</i> ✓ Ship's Round of Beam = <i>9"</i> ✓ Difference <i>excess</i> = <i>1.20"</i> ✓ Restricted to Correction = $\frac{\text{Diff}^e}{4} \times \left(1 - \frac{S_1}{L} \right) =$ $\frac{1.20}{4} \times .2495 = -.07"$ ✓
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DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed ...	<i>50'-0"</i>	<i>50.42</i>	<i>7'-3"</i>	✓	<i>50.42</i>	Standard Height of Superstructure <i>6'-00"</i> ✓
" overhang ...	<i>62.33</i>					" " R.Q.D. <i>3'-603'</i> ✓
R.Q.D. enclosed ...	<i>62'-0"</i>	<i>62.33</i>	<i>3'-8"</i>	✓	<i>62.33</i>	Deduction for complete superstructure <i>25.04"</i> ✓
" overhang ...						Percentage covered $\frac{S}{L} =$ <i>75.84</i> ✓
Bridge enclosed ...						" " $\frac{S_1}{L} =$ <i>75.05</i> ✓
" overhang aft ...						" " $\frac{E}{L} =$ <i>75.05</i> ✓
" overhang forward ...	<i>28.67</i>					Percentage from Table, Line A. <i>69.21</i> ✓
Fore enclosed ...	<i>28'-0"</i>	<i>28.67</i>	<i>6'-6"</i>	✓	<i>28.67</i>	(corrected for absence of forecastle (if required)) ✓
" overhang ...	<i>3.00</i>	<i>1.50</i>	"	✓	<i>1.50</i>	Percentage from Table, Line B. ✓
Trunk aft ...						(corrected for absence of forecastle (if required)) ✓
" forward ...						Interpolation for bridge less than .2L (if required) ✓
Tonnage opening aft ...						Deduction = $25.04 \times .6921 = 17.33"$ ✓
" " forward ...						
Total ...	<i>144.42</i>	<i>142.92</i>			<i>142.92</i>	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P. ...	<i>29.04</i>	1		<i>29.04</i>	<i>2'-1 1/2"</i>	<i>25.50</i>	1		<i>25.50</i>	Mean actual sheer aft = <i>Deficient 73.68%</i> ✓
1/4 L from A.P. ...	<i>12.92</i>	4		<i>51.68</i>	<i>4 1/2"</i>	<i>9.50</i>	4		<i>38.00</i>	Mean actual sheer forward = <i>Excess</i> ✓
1/2 L " ...	<i>3.19</i>	2		<i>6.38</i>	<i>1"</i>	<i>1.00</i>	2		<i>2.00</i>	Mean standard sheer forward = <i>Excess</i> ✓
Amidships ...	-	4		-	-	-	4		-	Length of enclosed superstructure forward of amidships =
3/4 L from F.P. ...	<i>6.39</i>	2		<i>12.78</i>	<i>6"</i>	<i>6.91</i>	2		<i>13.82</i>	" " aft of " = } <i>Deficient Sheer</i> ✓
1/4 L " ...	<i>25.84</i>	4		<i>103.36</i>	<i>2'-6"</i>	<i>24.93</i>	4		<i>111.72</i>	
F.P. ...	<i>58.08</i>	1		<i>58.08</i>	<i>5'-0"</i>	<i>62.78</i>	1		<i>62.78</i>	
Total ...				<i>261.32</i>					<i>253.82</i>	

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{7.50}{18} (.75 - .3492) = +.15"$$

If limited on account of midship superstructure.

If limited to maximum allowance of 1 1/2 ins. per 100 ft.

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

RAISED QUARTER
 Depth to Freeboard Deck = *16.70* Ft.
 Summer freeboard = *4.06*
 Moulded draught (d) = *12.64*

Deduction for Tropical freeboard and addition for
 Winter freeboard = $\frac{d}{4}$ inches = $3.16 = 80 \text{ } \frac{1}{16} \text{ m}$

Addition for Winter North Atlantic Freeboard (if required) = $80 + 51 = 131 \text{ } \frac{1}{16} \text{ m}$ ✓

Deduction for Fresh Water.

Displacement in salt water at summer load water line
 $\Delta = 12'-9"$ *1515 tons*
 $\Delta = 8'-0"$ *905 tons*
 Tons per inch immersion at summer load water line
 $T = 12'-9"$ *11.3 T.P.I.*
 $T = 8'-0"$ *11.2 "*
 Deduction = $\frac{\Delta}{40 T}$ inches
 $= \frac{1510}{40 \times 11.3} = 3.34$
 $40 \times 11.3 = 85 \text{ } \frac{1}{16} \text{ m}$ ✓

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient ✓

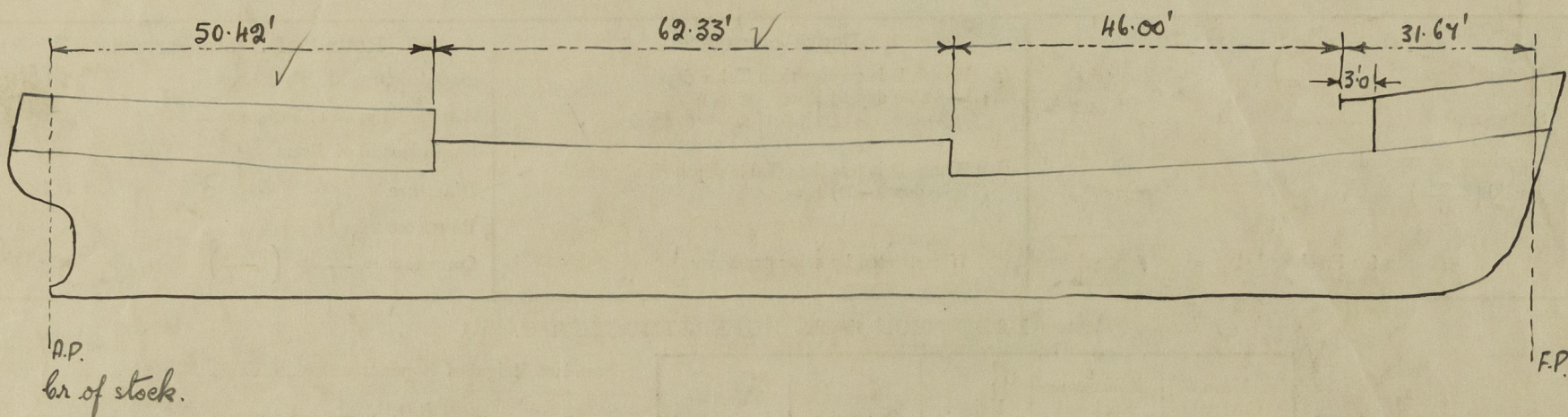
	+	-
Depth Correction ...	<i>.50</i>	-
Deduction for superstructures ...	-	<i>17.33</i>
Sheer correction ...	<i>.15</i>	-
Round of Beam correction ...	-	<i>.07</i>
Correction for Thickness of Deck amidships ...	-	-
Other corrections, scantlings, etc. HEIGHT OF RAISED QUARTER DECK	<i>44.00</i>	-
	<i>44.65</i>	<i>17.40</i>
Summer Freeboard =	<i>48.72"</i>	<i>+ 27.25"</i>

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, RAISED QUARTER, Steel Deck:

Tropical Fresh Water Line above Centre of Disc (LIMITED)	<i>120</i> m	Tropical Fresh Water Freeboard ...	<i>1117</i> " (LIMITED)
Fresh Water Line " " "	<i>85</i> " ✓	Fresh Water " " "	<i>1152</i> " (LIMITED)
Tropical Line " " (LIMITED)	<i>69</i> " ✓	Tropical " " "	<i>1168</i> " (LIMITED)
Winter Line below " " "	<i>80</i> " ✓	Winter " " "	<i>1317</i> " ✓
Winter North Atlantic Line " " "	<i>131</i> " ✓	Winter North Atlantic " " "	<i>1368</i> " ✓

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A new form should be prepared if any alterations that affect the freeboard have been made. If no such alterations have been made, the Surveyor should endorse the form on this side with his signature and the date.



Sheer Aft.

STANDARD			ACTUAL		
29.04	1	29.04	25.50	1	25.50
12.92	3	38.46	9.50	3	28.50
3.19	3	9.54	1.00	3	3.00
-	1	-	-	1	-
✓ 44.34			✓ 57.00		

$$\frac{\text{Actual}}{\text{Standard}} = \frac{57.00}{77.37} = 73.68\%$$

Sheer Forward.

STANDARD			ACTUAL		
-	1	-	-	1	-
6.39	3	19.17	6.00	3	18.00
25.84	3	44.52	30.00	3	90.00
58.08	1	58.08	60.00	1	60.00
✓ 154.77			168.00		
			154.77		
			13.23		

Effective Sheer Ordinates Forward.

-	x 167.30	=	-
6.39	" 154.77	=	6.91
25.84	"	=	24.93
58.08	"	=	62.78

$$154.77 + (13.23 \times \frac{23.68}{25.00}) = 154.77 + 12.53 = 167.30$$

Trade of ship _____

Names of sister ships _____

Builder's name and yard number _____

Owners _____

Fee £ _____

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Foundation