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(For London Office only.)

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker					Port of Survey <u>Bombay</u>
having <u>FORECASTLE, BRIDGE AND POOP</u>					Date of Survey <u>WHILE BEING CLASSIFIED</u>
(Type of Superstructures.)					Name of Surveyor <u>T.H. Noel</u>
Ship's Name <u>"KILWA" (EX KUNGLINGHON)</u>	Nationality and Port of Registry <u>BRITISH LONDON</u>	Official Number <u>146136</u>	Gross Tonnage <u>2653</u>	Date of Build <u>1921</u>	Particulars of Classification
Moulded Dimensions: Length <u>310'-0"</u> Breadth <u>44'-0"</u> Depth <u>23'-0"</u>					
Moulded displacement at moulded draught = 85 per cent. of moulded depth _____ tons					
Coefficient of fineness for use with Tables <u>say .72</u>					

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth <u>23'-0"</u>	(a) Where D is greater than Table depth (D - Table depth) R = <u>(23.10 - 20.67) 2.43</u> <u>+ 5.79"</u>	Moulded Breadth (B) <u>44'-0"</u>
Stringer plate <u>1/2" .04</u>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = <u>2.43</u>	Standard Round of Beam = $\frac{B \times 12}{50} = \frac{44 \times 12}{50} = 10.56"$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) = \frac{3}{12} \times \frac{25.77}{310} = .06$	If restricted by superstructures <input checked="" type="checkbox"/>	Ship's Round of Beam = <u>11"</u>
Depth for Freeboard (D) = <u>23.10'</u>		Difference = <u>.44"</u>
		Restricted to
		Correction = $\frac{\text{Diff}^{\circ}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.44}{4} \times .5870 = .06"$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed	<u>23'-0"</u>	<u>23.00</u>	<u>7'-3"</u>	<input checked="" type="checkbox"/>	<u>23.00</u>
„ overhang	<u>✓</u>				
R.Q.D. enclosed	<u>✓</u>				
„ overhang	<u>✓</u>				
Bridge enclosed <u>Open at After End</u>	<u>84'-0"</u>	<u>63.00</u>	<u>7'-3"</u>	<input checked="" type="checkbox"/>	<u>63.00</u>
„ overhang aft	<u>5'-0"</u>				
„ overhang forward	<u>2'-6"</u>				
F'cle enclosed <u>equiv...</u>	<u>44'-0"</u>	<u>41.07</u>	<u>7'-3"</u>	<input checked="" type="checkbox"/>	<u>41.07</u>
„ overhang	<u>1'-93</u>	<u>.96</u>			<u>.96</u>
Trunk aft	<u>✓</u>				
„ forward	<u>✓</u>				
Tonnage opening aft	<u>✓</u>				
„ „ forward	<u>150.00</u>				
Total	<u>157'-0"</u>	<u>128.03</u>			<u>128.03</u>

Standard Height of Superstructure <u>6'-60"</u>	
„ „ R.Q.D. <u>✓</u>	
Deduction for complete superstructure <u>36.00"</u>	
Percentage covered $\frac{S}{L} = \frac{48.38}{100}$	
„ „ $\frac{S_1}{L} = \frac{41.30}{100}$	
„ „ $\frac{E}{L} = \frac{41.30}{100}$	
Percentage from Table, Line A. (corrected for absence of forecastle (if required)) <u>✓</u>	
Percentage from Table, Line B. (corrected for absence of forecastle (if required)) <u>28.60</u>	
Interpolation for bridge less than 2L (if required) <u>✓</u>	
Deduction = <u>36.00 × .2860 = -10.30"</u>	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	<u>41.00</u>	1		<u>41.00</u>	<u>30'-0"</u>	<u>30.00</u>	1		<u>30.00</u>
1/8 L from A.P.	<u>18.25</u>	4		<u>73.00</u>	<u>16'-5"</u>	<u>16.50</u>	4		<u>66.00</u>
3/8 L „	<u>4.51</u>	2		<u>9.02</u>	<u>3'-5"</u>	<u>3.50</u>	2		<u>7.00</u>
Amidships	<u>-</u>	4		<u>-</u>	<u>0"</u>	<u>-</u>	4		<u>-</u>
5/8 L from F.P.	<u>9.02</u>	2		<u>18.04</u>	<u>8"</u>	<u>8.00</u>	2		<u>16.00</u>
3/4 L „	<u>36.49</u>	4		<u>145.96</u>	<u>33'-5"</u>	<u>33.50</u>	4		<u>134.00</u>
F.P.	<u>82.00</u>	1		<u>82.00</u>	<u>81'-0"</u>	<u>81.00</u>	1		<u>81.00</u>
Total				<u>369.02</u>					<u>334.00</u>

Correction = $\frac{\text{Difference between sums of products}}{18} \left(75 - \frac{S}{2L} \right) = \frac{35.02}{18} \left(75 - \frac{.2419}{.5081} \right) = +.99"$

If limited on account of midship superstructure. ☒

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

Mean actual sheer aft = DEFICIENT

Mean standard sheer aft

Mean actual sheer forward = DEFICIENT = 94.03%

Mean standard sheer forward

Length of enclosed superstructure forward of amidships = OPEN BRIDGE

„ „ aft of „ = OPEN BRIDGE

SHEER FORWARD				ACTUAL			
STANDARD	S	M	Product	STANDARD	S	M	Product
<u>9.02</u>	<u>3</u>		<u>27.06</u>	<u>8.00</u>	<u>3</u>		<u>24.00</u>
<u>36.49</u>	<u>3</u>		<u>109.47</u>	<u>33.50</u>	<u>3</u>		<u>100.50</u>
<u>82.00</u>	<u>1</u>		<u>82.00</u>	<u>81.00</u>	<u>1</u>		<u>81.00</u>
			<u>218.53</u>				<u>205.50</u>
							$\frac{205.50}{218.53} = 94.03\%$

Deduction for Tropical Freeboard. Addition for Winter and Winter North Atlantic Freeboard. Depth to Freeboard Deck = <u>23.04</u> Summer freeboard = <u>5.04</u> Moulded draught (d) = <u>18.00</u> Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <u>4'-50" 4 1/2"</u> Addition for Winter North Atlantic Freeboard (if required) = <u>6 1/2"</u>	Deduction for Fresh Water. Displacement in salt water at summer load water line $\Delta =$ Tons per inch immersion at summer load water line $T =$ Deduction = $\frac{\Delta}{40T}$ inches $\frac{d}{4} = 4 1/2"$	TABULAR FREEBOARD corrected for Flush Deck (if required) Correction for coefficient $\frac{72 + .67}{1.36} \cdot \frac{1.40}{1.36}$ <table style="width: 100%;"> <tr> <th></th> <th>+</th> <th>-</th> </tr> <tr> <td>Depth Correction</td> <td><u>5.79</u></td> <td><u>-</u></td> </tr> <tr> <td>Deduction for superstructures</td> <td><u>-</u></td> <td><u>10.30</u></td> </tr> <tr> <td>Sheer correction</td> <td><u>.97</u></td> <td><u>-</u></td> </tr> <tr> <td>Round of Beam correction</td> <td><u>-</u></td> <td><u>.06</u></td> </tr> <tr> <td>Correction for Thickness of Deck amidships</td> <td><u>-</u></td> <td><u>.72</u></td> </tr> <tr> <td>Other corrections, scantlings, etc.</td> <td><u>17.57</u></td> <td><u>-</u></td> </tr> <tr> <td><u>corresponding to a summer mid draught of 18'-0"</u></td> <td><u>24.33</u></td> <td><u>11.08</u></td> </tr> <tr> <td>Summer Freeboard =</td> <td><u>60.50"</u></td> <td><u>+13.25"</u></td> </tr> </table>		+	-	Depth Correction	<u>5.79</u>	<u>-</u>	Deduction for superstructures	<u>-</u>	<u>10.30</u>	Sheer correction	<u>.97</u>	<u>-</u>	Round of Beam correction	<u>-</u>	<u>.06</u>	Correction for Thickness of Deck amidships	<u>-</u>	<u>.72</u>	Other corrections, scantlings, etc.	<u>17.57</u>	<u>-</u>	<u>corresponding to a summer mid draught of 18'-0"</u>	<u>24.33</u>	<u>11.08</u>	Summer Freeboard =	<u>60.50"</u>	<u>+13.25"</u>
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SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck:

Tropical Fresh Water Line above Centre of Disc ... <u>9"</u> Fresh Water Line " " ... <u>4 1/2"</u> Tropical Line " " ... <u>4 1/2"</u> Winter Line below " " ... <u>4 1/2"</u> Winter North Atlantic Line " " ... <u>6 1/2"</u>	Tropical Fresh Water Freeboard ... <u>4'-3 1/2"</u> Fresh Water " " ... <u>4'-8"</u> Tropical " " ... <u>4'-8"</u> Winter " " ... <u>5'-5"</u> Winter North Atlantic " " ... <u>5'-7"</u>
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PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS										
Description of Hatchway										
Dimensions of Hatchway										
COAMINGS	{	Height above Deck ...								
		Thickness ...								
		Sides ...								
		Ends ...								
		Stiffeners ...								
		Brackets, Stays ...								
HATCH BEAMS	{	Number								
		Spacing								
		Scantling and Sketch ...								
		Bearing Surface ...								
FORE AND AFTERS	{	Number								
		Spacing								
		Unsupported Lengths ...								
		Scantling* and Sketch ...								
		Bearing Surface ...								
HATCH COVERS	{	Material								
		Thickness								
		How fitted								
		Bearing Surface ...								
Spacing of Cleats										
Number of Tarpaulins										
<p>*Are wood fore and afters steel shod at all bearing surfaces ? Are battens and wedges efficient and in good condition ? Are tarpaulins in good condition and in accordance with rule requirements ? Are lashings provided in accordance with rule requirements ?</p>										

Particulars of fiddley, funnel and ventilator coamings :—

Particulars of Flush Bunker Scuttles :—

2' cleat - $\frac{22.5 \times 3}{35} = 1.93'$ equiv O.H.

Reqd end. f'cle = 41.07'.

Particulars of Companionways :—

Particulars of Ventilators in exposed positions on freeboard and superstructure decks :—

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks :—

Particulars of Gangway Cargo and Coaling Ports :—

