

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for ~~Steamer, Sailing Ship, Tanker~~
having Poop and Forecastle.

(Type of Superstructures.)

Ship's Name "OTTERHOUND" Nationality and Port of Registry British London. Official Number 149849 Gross Tonnage 860. Date of Build 1927-8

Moulded Dimensions: Length 190.0 ✓ Breadth 32.25 ✓ Depth 15.0 ✓
Moulded displacement at moulded draught = 85 per cent. of moulded depth 1674 ✓ tons
Coefficient of fineness for use with Tables .750 ✓

Port of Survey Queenboro'
Date of Survey 8.6.32.
Name of Surveyor Thomas E. Sowden
Particulars of Classification +100A.1.
Carrying Petroleum in Bulk

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth 15.00	(a) Where D is greater than Table depth (D - Table depth) R = <u>(15.03 - 12.67) 1.461 = + 3.45"</u> ✓	Moulded Breadth (B) <u>32.25</u>
Stringer plate <u>.36"</u>03	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = ✓	Standard Round of Beam = $\frac{B \times 12}{50} = 7.74$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ ✓	If restricted by superstructures ✓	Ship's Round of Beam = <u>7.50</u>
Depth for Freeboard (D) = <u>15.03</u> ✓		Difference <u>.24</u>
		Restricted to
		Correction = $\frac{\text{Diff}^*}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.24}{4} \times 2842 =$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed	<u>78.6</u> ✓	<u>70.74</u> ✓	<u>7'-6"</u> ✓	✓	<u>70.74</u> ✓	Standard Height of Superstructure <u>6.0</u> ✓
" overhang	-					" " R.Q.D. ✓
R.Q.D. enclosed						Deduction for complete superstructure <u>25.00</u> ✓
" overhang						Percentage covered $\frac{S}{L} = 54.61\%$ ✓
Bridge enclosed						" " $\frac{S_1}{L} = 71.58\%$ ✓
" overhang aft						" " $\frac{E}{L} = 63.13\%$ ✓
" overhang forward						Percentage from Table, Line A. ✓
Fore enclosed	<u>25.15</u> ✓	<u>25.15</u>	<u>7'-6"</u> ✓	✓	<u>25.15</u>	(corrected for absence of forecastle (if required)) ✓
" overhang	-					Percentage from Table, Line B. <u>TANKER.</u> <u>55.44%</u> ✓
Trunk aft <u>86.25 x 15</u> ✓	<u>86.25</u> ✓	<u>40.12</u> ✓	<u>4'-0"</u> ✓	<u>$\frac{90}{100} \times \frac{4}{6}$</u> ✓	<u>24.07</u> ✓	(corrected for absence of forecastle (if required))
" forward <u>32.25</u> ✓						Interpolation for bridge less than .2L (if required)
Tonnage opening aft						Deduction = <u>25.00</u> x .5544 = <u>- 13.86</u> "
" " forward						
Total	<u>103.75</u>	<u>136.01</u>			<u>119.96</u>	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P.	<u>29.00</u>	1		<u>29.00</u>	<u>27.27</u> ✓	<u>27.00</u>	1		<u>27.00</u>	Mean actual sheer aft = <u>Deficient</u> ✓
$\frac{1}{4}$ L from A.P.	<u>12.90</u>	4		<u>51.60</u>	<u>12.12</u> ✓	<u>12.05</u>	4		<u>48.20</u>	Mean actual sheer forward = <u>Deficient</u> ✓
$\frac{3}{4}$ L "	<u>3.19</u>	2		<u>6.38</u>	<u>3.36</u> ✓	<u>3.01</u>	2		<u>6.02</u>	Mean standard sheer forward
Amidships	✓	4		-	✓	✓	4		✓	Length of enclosed superstructure forward of amidships = } <u>Tanker</u>
$\frac{3}{4}$ L from F.P.	<u>6.39</u>	2		<u>12.78</u>	<u>6.59</u> ✓	<u>5.97</u>	2		<u>11.94</u>	" " aft of " = }
$\frac{1}{4}$ L "	<u>25.81</u>	4		<u>103.24</u>	<u>24.23</u> ✓	<u>23.90</u>	4		<u>95.60</u>	
F.P.	<u>58.00</u>	1		<u>58.00</u>	<u>54.54</u> ✓	<u>54.00</u>	1		<u>54.00</u>	
Total				<u>261.00</u>					<u>242.76</u>	

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{18.24}{18} \times (.75 - .273) = + .48$ "

If limited on account of midship superstructure. ✓

If limited to maximum allowance of $1\frac{1}{2}$ ins. per 100 ft. ✓

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = 15.03 ✓
Summer freeboard = 1.06 ✓
Moulded draught (d) = 13.97 ✓

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = 3.49 = 3 $\frac{1}{2}$ "

Addition for Winter North Atlantic Freeboard (if required) = 1.9 = 2"

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta = 1864$ ✓

Tons per inch immersion at summer load water line

$T = 11.98$ ✓

Deduction = $\frac{\Delta}{40T}$ inches

= 3.89 ✓

= 4" ✓

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{.75 + .68}{1.36} = \frac{1.43}{1.36}$

$\frac{1.43}{1.36} = 1.0515$

Depth Correction 3.45 ✓

Deduction for superstructures 13.86 ✓

Sheer correction48 ✓

Round of Beam correction02 ✓

Correction for Thickness of Deck amidships ✓

Other corrections, scantlings, etc. ✓

21.50 -

22.61 -

3.95 13.86 - 9.91

Summer Freeboard = 12.70

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck:—

Tropical Fresh Water Line above Centre of Disc	
Fresh Water Line " "	
Tropical Line " "	
Winter Line below " "	<u>3$\frac{1}{2}$"</u>
Winter North Atlantic Line " "	

Tropical Fresh Water Freeboard	
Fresh Water " "	
Tropical " "	
Winter " "	<u>1' 0$\frac{3}{4}$"</u>
Winter North Atlantic " "	

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS										
Description of Hatchway			No. 1. F&D*	No. 1 UD	Y in No. 1 UD	Loop Cross Bunkers	Loop 2 Side Bunkers			
Dimensions of Hatchway			7'0" x 4'6"	10' x 4'6"	3' x 2'6"	10' x 5'	7'3" x 3'0"			
COAMINGS	{	Height above Deck	30" ✓	9" BA ✓	6" angle ✓	33" ✓	30" ✓			
		Thickness {	Sides	44 ✓	44 ✓	44 ✓	44 ✓	44 ✓		
			Ends	44 ✓	44 ✓	44 ✓	44 ✓	44 ✓		
		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	Pine ✓	Do.	Hinged Steel (50) ✓	Pine ✓	Do. ✓			
		Thickness	3 ✓		W.T. ✓	3" ✓				
		How fitted	F&A ✓		Covers. ✓	4" ✓				
		Bearing Surface	3" ✓			3" ✓				
Spacing of Cleats			24 ✓			24 ✓				
Number of Tarpaulins			2. ✓			2. ✓				
<p>*Are wood fore and afters steel shod at all bearing surfaces ?</p> <p>Are battens and wedges efficient and in good condition ?</p> <p>Are tarpaulins in good condition and in accordance with rule requirements ?</p> <p>Are lashings provided in accordance with rule requirements ?</p>										

Particulars of fiddle, funnel and ventilator coamings:—

Fiddle Gratings fitted with hinged plate covers ✓
E.R. Skylight Steel Strongly constructed ✓
Vent & Funnel Coamings in good condition ✓

Particulars of Flush Bunker Scuttles:—

None ✓

Particulars of Companionways:—

2 Companionways P & S on Poop Deck in casing leading to Accom. ✓
with 1 1/4" Hinged Wood doors 5' x 2', with 15" sills, & operated from both sides ✓

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

Forecastle:— 2 w 10" x 36" high to Hold ✓
1 w 9" x 36" " " 4.P. ✓
Trunk Deck: 6" diam vents in hatch covers with screw plugs. ✓
Poop:— 6 w 6" x 21" high to turn B. ✓
1 w 6" x 17" (S.N.) " " " ✓
3 w 5" MV x 9" " " " ✓
3 w 6" x 18" " " " or A.P. ✓
All vents have wood plugs & canvas covers. ✓

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

Forecastle:— 1 w 2 1/2" x 19" high to 4.P. ✓
Fore Deck:— 1 w 2 1/2" x 19" " " Cofferdam. 4.P. ✓
Poop:— 3 w 2 1/2" x 19" " " aft. B. ✓
1 w 4 1/2" x 19" " " Settling tanks ✓
2 w 2" x 19" " " B.S. ✓
1 w A.P. 2 1/2" x 18" high. ✓
Canvas Covers to air pipes being fitted. or wood plugs provided for all

Particulars of Gangway Cargo and Coaling Ports:—

None ✓



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Particulars of Scuppers and Sanitary Discharge Pipes :—

Discharges from acc^m spaces in Poop & B^o led through shell below freeboard deck fitted with storm valves at side & flap valves at inner end. ✓

Particulars of Side Scuttles :—

All fitted with fixed hinged deadlights. ✓

Particulars of Guard Rails :—

Forecastle Decks :-	3'-6" high	3 rods	Stanchions	4'-4" apart.	✓
Fore Deck	3'-10"	2 "	"	4'-3"	✓
Trunk	3'-10"	3 "	"	4'-9"	✓
	3'-9"	3 "	"	4'-3"	✓

Particulars of Gangways, Lifelines, etc. :—

None fitted: Crew in Poop.

Access to Pump Room on Trunk top protected by rails & stanchions

Particulars of Freeing Arrangements.

	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
After Well ...			Open rails fore & aft.			
Forward Well ...						

State position of each freeing port ... } After Well :—
(F. and A. position and height above deck edge) } Forward Well :—
State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such :—
Additional area where sheer is less than standard.

Particulars of Superstructures, Trunks, Casings, Deckhouses.

	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead ...	44	26 3/8	7 1/2 x 3 x 40 B.A.	25"	Lugs T & B.	2 x 5'-6" x 3'	15"	7'-6"
Raised Quarter Deck Bulkhead ...								
Bridge, After Bulkhead ...								
Bridge, Forward Bulkhead ...								
Forecastle Bulkhead ...	15 x 44 ✓	44 ✓	3 x 3 x 30	30" ✓	none	2 x 5'-6" x 3' ✓	15" ✓	7'-6" ✓
Trunk, Aft ...								
Trunk, Forward ...	36 ✓	36 ✓	6 x 3 x 32 B.A.	40" ✓	—	—	—	4'-0" ✓
Exposed Machinery Casings on Freeboard or Raised Quarter Decks ...			3 x 3 x 34	23"				
Exposed Machinery Casings on Superstructure Decks ...	18" x 34 ✓	30 ✓	3 x 3 x 30"	30" ✓	Brackets T & B.	2 x 5' x 25" ✓	18" ✓	8'-0" ✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ...	34	26	3 1/2 x 3 x 34 1/2	28" B.R.		No openings		
Deckhouses on Flush Deck Ships ...								

Particulars of Closing Appliances (state if capable of being manipulated from both sides).

Poop Bulkhead ...	2 with 3" shifting boards full h ^t in riveted channels & steel plate covers secured by bolts (not operated from both sides) ✓
Raised Quarter Deck Bulkhead ...	
Bridge, After Bulkhead ...	
Bridge, Forward Bulkhead ...	
Forecastle Bulkhead ...	1 with 3" shifting boards full h ^t in riveted channels & steel plate cover (not operated from both sides) ✓
Exposed Machinery Casings on Freeboard or Raised Quarter Decks ...	
Exposed Machinery Casings on Superstructure Decks ...	2 hinged steel doors operated from both sides. ✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ...	No openings
Deckhouses on Flush Deck Ships ...	

Hand-drawn plan view of a ship's hull, showing the Superstructure Deck and Freeboard Deck. The ship's overall length is 100 ft.

Superstructure Deck Plan:

- Dimensions: 78.6 ft (aft section), 86.25 (midsection), 25.15 (fore section).
- Labels: Steel, Wood, Com., E.R., B.R., Coal, Rm.

Freeboard Deck Plan:

- Dimensions: 15' (width).
- Labels: OT, CT.

Draught:		Y.P. S.
11		11.77
12	omit	11.86
13		11.93
14		11.98

Small Hatches:-

Small Hatches:-

2 manholes at F.E. of trunk, to Cofferdam, 18"x14"x11" high with hinged plate w.t. covers.

3 @ 2'x18"x9" high, to Ch L, F. Peak & Hold, on Y-ile with covers clips battens & tarpaulins as req^s.

1 @ 2'4"x22"x24" " " Aft Store on Paop D^a " " " " " "

2 @ 3' x 3' x 12" high with hinged OT Steel Covers on U.S. in Poop.
2 @ 3'-10" x 2'-8" x 12" " " " " " " " " " "

$\text{Fuel } \Delta @ \text{ ca } 14' - 0'' = 1840 + \text{TP} = 11.98$
 $85\% \text{ med} = 12.75''$
 $\text{Keel} = 12' - 9''$
 $\text{Keel} = 12' - 10\frac{3}{4}''$
 $12\frac{1}{4}'' \times 11.95 = 158$

$$\Delta_{free} = 1682$$
$$\therefore \text{med} = 1682 \times .995 = 1674$$

Om 17

Builder's name and yard number.

Furness Shipbuilding Co Ltd. 170121

Names of sister ships

Owners

Coaster Yankers Ltd

Fee £.

6. 16. 0

Received by me

Exps.

2 : 4

2/c 13/6/32