

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Mch No. 74 99.

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having

Shelter Deck

Port of Survey MANCHESTER

(Type of Superstructures.)

Date of Survey 18th MARCH 1932

Ship's Name

Nationality and Port of Registry

Gross Tonnage

Date of Build

Name of Surveyor H.R. Gibbs

Particulars of Classification

+ 100 A1
SHELTER DECK
WITH FREEBOARD

Moulded Dimensions: Length 400'0" Breadth 52'16" Depth 37'58" 13.4.53
 Moulded displacement at moulded draught = 85 per cent. of moulded depth 14980 tons
 Coefficient of fineness for use with Tables 786

Depth for Freeboard (D)

Depth correction

Round of Beam correction

Moulded depth ... 37'58"

(a) Where D is greater than Table depth
(D-Table depth) R =

$$(37.62 - 26.67) \times 3.0 = +32.85$$

Moulded Breadth (B) 52'16"

$$\text{Standard Round of Beam} = \frac{B \times 12}{50} = 12.52$$

$$\text{Ship's Round of Beam} = 13.00$$

$$\text{Difference} = 48$$

Restricted to

$$\text{Correction} = \frac{\text{Diff}^2}{4} \times (1 - \frac{S_1}{L}) = \frac{48^2}{4} \times (1 - \frac{26.67}{37.62}) = -0.09$$

$$T \left(\frac{L-S}{L} \right) =$$

$$\text{Depth for Freeboard (D)} = 37.62$$

If restricted by superstructures

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...					
overhang ...					
R.Q.D. enclosed ...					
overhang ...					
Bridge enclosed ...	141'0"	105'75"	4'9"	✓	105'75"
overhang aft ...					
overhang forward ...					
Fore enclosed ...					
overhang ...					
Trunk aft ...					
forward ...					
Tonnage opening aft ...					
forward ...					
Total ...	141'00"	105'75"			105'75"

Standard Height of Superstructure 7'6"

R.Q.D. ✓

Deduction for complete superstructure 42"

$$\text{Percentage covered } \frac{S}{L} = 35.25$$

$$\frac{S_1}{L} = 26.44$$

$$\frac{E}{L} = 26.44$$

Percentage from Table, Line A.

(corrected for absence of forecastle (if required))

Percentage from Table, Line B. 16.76-5 FOR NO FORECASTLE = 11.76

(corrected for absence of forecastle (if required))

Interpolation for bridge less than 2L (if required) ✓

$$\text{Deduction} = 42 \times 11.76 = -4.94$$

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	50.00	1		50.00	46.2	46.50	1		46.50
1/4 L from A.P. ...	22.25	4		89.00	16	16.19	4		64.76
1/2 L " ...	5.50	2		11.00	4	4.05	2		8.10
Amidships ...	-	4		-	-	-	4		-
3/4 L from F.P. ...	11.00	2		22.00	9	9.19	2		18.38
3/4 L " ...	44.50	4		178.00	36.2	36.75	4		147.00
F.P. ...	100.00	1		100.00	95.2	95.50	1		95.50
Total ...				450.00					380.24

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left(\frac{75-S}{2L} \right) = \frac{69.76}{18} \left(\frac{75-176.2}{5738} \right) = +2.22$$

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.

$$\text{Depth to Freeboard Deck} = 37.62$$

$$\text{Summer freeboard} = 8.92$$

$$\text{Moulded draught (d)} = 28.70$$

Deduction for Tropical freeboard and addition for

$$\text{Winter freeboard} = \frac{d}{4} \text{ inches} = 7.18 \cdot 74$$

Addition for Winter North Atlantic Freeboard (if required =

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$$\Delta = 13458 \text{ TONS.}$$

Tons per inch immersion at summer load water line

$$T = 43.8 \text{ TONS/INCH}$$

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

$$= 7.74 = 7 \frac{3}{4}$$

TABULAR FREEBOARD corrected for Fresh Deck (if required)

$$\text{Correction for coefficient} = \frac{786 + 68}{1.36}$$

$$\text{Depth Correction} = 32.85$$

$$\text{Deduction for superstructures} = 4.94$$

$$\text{Sheer correction} = 2.22$$

$$\text{Round of Beam correction} = 0.09$$

$$\text{Correction for Thickness of Deck amidships} = -$$

$$\text{Other corrections, scantlings, etc.} = -$$

$$35.07 - 5.03 + 30.04$$

$$\text{Summer Freeboard} = 107.11$$

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 " " " " " "

Winter North Atlantic Line " " " " " "

Tropical Fresh Water Freeboard ...

Fresh Water " " " " " "

Tropical " " " " " "

Winter " " " " " "

Winter North Atlantic " " " " " "

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PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS											
SHELTER DECK					BRIDGE DECK						
Description of Hatchway	No 1	No 2	No 4	No 5	HATCH TO UPPER DECK FORWARD	HATCH TO AFTER PEAK SAME AFT INSIDE HOUSE	No 3 HATCH TRUNKED	COALING HATCHES	FOR BUNKER HATCH	AFTER BUNKER HATCH	
Dimensions of Hatchway	19'-6" x 14'-0"	28'-2" x 16'-0"	26'-0" x 16'-0"	19'-6" x 16'-0"	3'-6" x 2'-3"	4'-0" x 2'-6"	13'-0" x 14'-6"	4'-4 3/8" x 3'-0"	15'-6" x 2'-9"	15'-6" x 2'-9"	
COAMINGS	Height above Deck	30"			15"	3 1/2 x 3 1/2 x 35L	30"	18"	9-3 1/2 x 4 L	9-3 1/2 x 4 L	
	Thickness	44"			50"		44"	40"			
	Stiffeners	4 x 3 x 40L					4 x 3 x 40L				
	Brackets, Stays	2-3 x 5/8 FLATS					2-3 x 5/8 FLATS				
HATCH BEAMS	Number	3	5	5	3		2				
	Spacing	4'-10"	4'-9"	4'-4"	4'-10"		4'-4"				
	Scantling and Sketch	3 1/2 x 3 x 45L 3 1/2 x 3 x 35L 3 1/2 x 3 x 60L	3 1/2 x 3 x 45L 3 1/2 x 3 x 60L	3 1/2 x 3 x 45L 3 1/2 x 3 x 60L	3 1/2 x 3 x 45L 3 1/2 x 3 x 60L	NONE	NONE	3 1/2 x 3 x 45L 3 1/2 x 3 x 60L	NONE	NONE	NONE
	Bearing Surface	3 1/2"	3 1/2"	3 1/2"	3 1/2"		3 1/2"				
FORE AND AFTERS	Number										
	Spacing										
	Unsupported Lengths										
	Scantling* and Sketch										
Bearing Surface											
HATCH COVERS	Material	N.P.				7/8" STEEL	2 1/2"	N.P.	N.P.	N.P.	
	Thickness	3"				HINGED LID	N.P.	3"	3"	3"	
	How fitted	FORE & AFT	SAME AS NO 1			WITH TONGUES	F.E.A.	F.E.A.	F.E.A.	F.E.A.	
	Bearing Surface	3 1/2"				SPACED 12" APART	3"	3 1/2"	3"	3"	
Spacing of Cleats	24"	24"	24"	24"		NONE	24"	8 CLEATS	20"	20"	
Number of Tarpaulins	4	4	4	4			2	2	1	1	
LOCKING BARS	2	3	3	2			NONE	NONE	NONE	NONE	
*Are wood fore and afters steel shod at all bearing surfaces? NONE FITTED											
Are battens and wedges efficient and in good condition? YES											
Are tarpaulins in good condition and in accordance with rule requirements? YES											
Are lashings provided in accordance with rule requirements? YES - SEE ABOVE											

Particulars of fiddley, funnel and ventilator coamings :—

Stakehold Gratings covered by strong steel hinges covers. ✓
Engine Skylight of Steel Strongly Constructed ✓
Funnel and Fuley Ventilators are in efficient condition. ✓

Particulars of Flush Bunker Scuttles:—

NONE ✓

Particulars of Companionways :—

2 Steel Companionways on Bridge Deck 5'-10" x 4'-0" x 3'-0" fitted with Strong 1 3/4 Teak Doors.
Sills - 4" above wood deck. ✓

AIR PIPES.

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

Requirements of Ventilation for Engines in Forward and Aft Compartments			
1	C. I. air pipe To Fore Peak	4" dia.	} On Shelter Deck.
2	" " " No 1 D.B.	2"	
2	" " " No 2 "	2 1/2"	
2	" " " No 3 "	3"	
2	" " " No 5 "	3"	
2	" " " No 6 "	2 1/2"	
2	" " " No 6 "	3"	
2	" " " No 7 "	3"	} On Bridge Deck.
1	" " After Peak	4"	
2	C. I. air pipes To No 2 D.B.	2" dia.	} On Bridge Deck.
2	" " " No 3 D.B.	2 1/2"	
all air pipes 15" high to mouths.			
Air pipes to Forward Tanks no caps			
" " " After Tanks secured c			
No closing arrangements provided and			

VENTS.

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

2 ventilators to hold & Tr. ^{Wing} 18" dia. 30' coaming 33" thick } on door
1 " " Tunnel Escape " " " " " } Bridge
" " " " " " " " " } app.

Particulars of ~~the~~ Pipes in Exposed Positions on Freeboard, raised quarter, or superstructure decks.

1	goose-neck Vents to Upper D ^o	6 dia.	mouth 6" above deck	Shelter Deck. <i>supported</i>
6	vents to Hold & Tr. D ^o	18" dia.	36" coaming .30 thick	
2	" " " " " "	"	9'6" " .35	
8	" " " " " "	"	36" " .30	
15	goose-neck Vents to Accommodation below 6" dia.	mouth 6" above deck	Bridge Deck	
1	Ventilator to E. R.	12" dia x 27" coaming x .25 thick		
2	" " " " " "	Hold & Tr. D ^o 18" dia. 27 1/2" coaming .35 THICK		on Top of Cabot House between nos. 4 & 5 Hatch
2	" " " " " "	Accommodation 12" " 15" " .30		
2	" " " " " "	" " 9" " .30		

All vents closed with wood plugs and canvas covers. ✓

Particulars of Gangway Cargo and Coaling Ports:—

6 coaling ports in Shelter Tween Decks. (3P. & 3S) 2'-6" x 2'-6" closed by Strong Steel bolted plate $\frac{3}{4}$ " thick 1" bolts 6' apart. ✓

4 Ash shoot openings 22" x 22" with strong hinged doors (2 p. 25) opened by 2 strong bolts operated from inside ✓

Norwegian

Particulars of Scuppers and Sanitary Discharge Pipes —

Scuppers from Green Decks led to Bilge ^{as Ship's Side} Scuppers from Shelter Deck led directly overboard ^{3' below deck}
N.C. Sail pipes fitted with M.I. storm valves and discharging overboard 18" above
Upper Deck ^{Scuppers} Lavatory and bath discharges led overboard 3' below Shelter deck (openings)

Particulars of Side Scuttles:

Sidelights of Strong Construction fitted to midship accommodation, to Crew house
between Nos. 4 & 5 Hatches and to Steering Gear House aft — no deadlights
are fitted.

Particulars of Guard Rails:—

Shelter Deck
Tier Rails fitted Fore and Aft (except in rear of Bridge House) 3'-9" above
deck — Stanchions 4'-6" apart ✓
— ditto — on Bridge Deck ✓

Particulars of Gangways, Lifelines, etc.:—

NONE ✓ Efficient lifelines fastenings fitted
in forward casing superstructure decks
which might have been used by the crew
in the regular working of the ship

Particulars of Freeing Arrangements.

	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
Forward Well						
Aft Well						

Position of each freeing port } After Well:—
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.

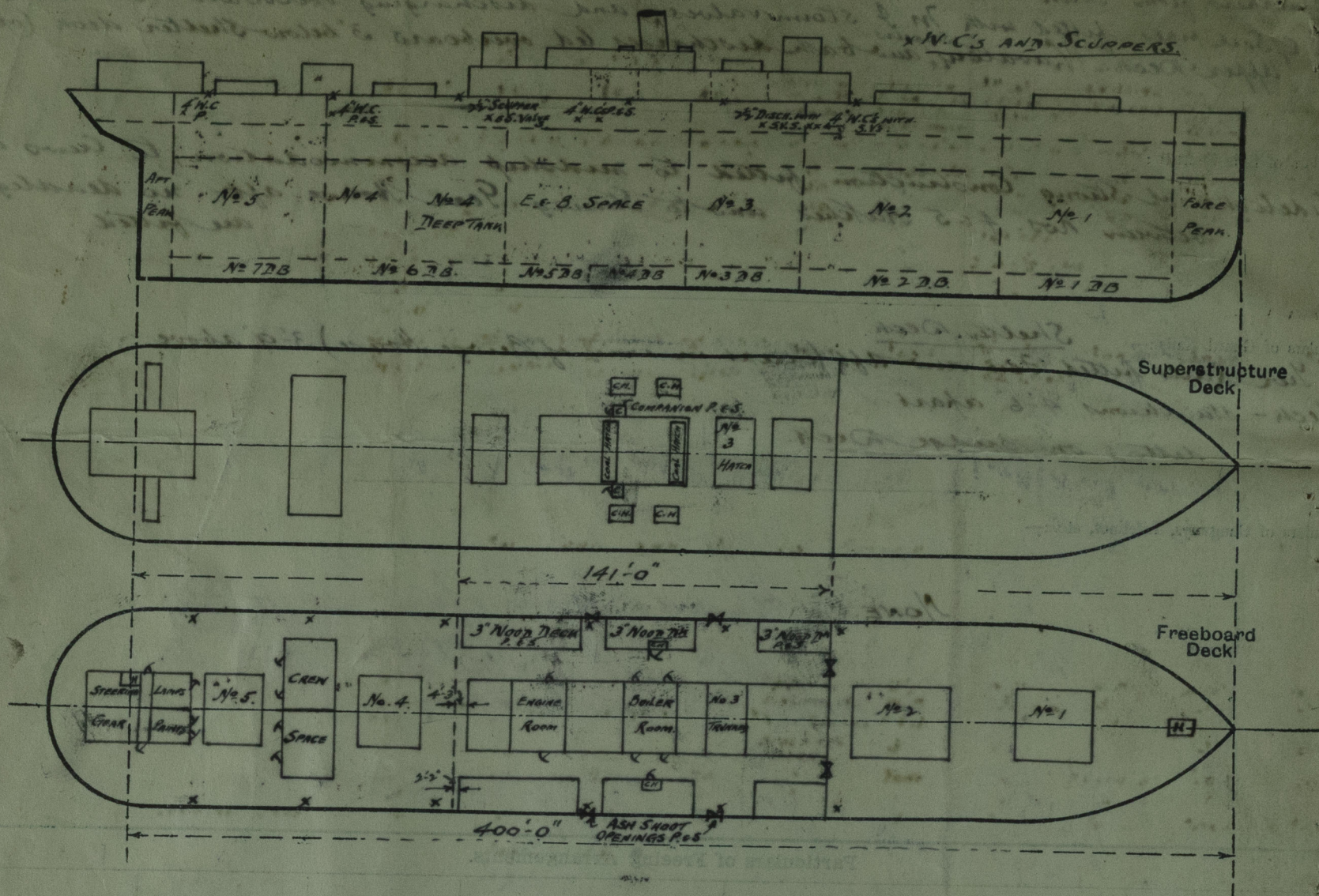
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Forward Bulkhead								
Raised Quarter Deck Bulkhead								
Bridge, After Bulkhead	18" x 40"	28"	3 x 3 x 30"	30"	NONE	NONE	✓	4'-9"
Bridge, Forward Bulkhead	18" x 50"	35"	8½ x 3½ x 50"	30"	BRACKETS	2-4-6 x 2-6"	18"	4'-9"
Forecastle Bulkhead								
Trunk, Aft								
Trunk, Forward								
Exposed Machinery Casings on Free-board or Raised Quarter Decks	18" x 36"	36"	4 x 3 x 36"	30"	BRACKETS	4-6 x 24"	18"	4'-9"
Exposed Machinery Casings on Super-structure Decks		35"	3 x 3 x 35"	30"	"	NONE	✓	4'-3"
Machinery Casings within Superstruc-tures not fitted with Class I Closing Appliances								Above No. 3
Deckhouses on Flush Deck Ships		25"	3 x 3 x 30"	30" AVERAGE	BRACKETS	5'-0" x 2'-0"	12"	4'-9"

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

Poop Bulkhead	14 mpa wood doors see hpl's cut (center)
Raised Quarter Deck Bulkhead	4 mpa steel doors see hpl's cut (center)
Bridge, After Bulkhead	OPEN END
Bridge, Forward Bulkhead	2 DOUBLE STEEL HINGED DOORS SECURED BY TURNBUCKLES SPACED 12" CAPABLE OF BEING OPERATED BOTH SIDES
Forecastle Bulkhead	
Exposed Machinery Casings on Free-board or Raised Quarter Decks	6 STEEL HINGED DOORS (3 PRESS) CAPABLE OF BEING OPERATED BOTH SIDES (E.E.B. CASING)
Exposed Machinery Casings on Super-structure Decks	2 STRONG HINGED TEAK DOORS TO MIDSHIP ACCOMMODATION
Machinery Casings within Superstruc-tures not fitted with Class I Closing Appliances	
Deckhouses on Flush Deck Ships	8 STRONG STEEL HINGED DOORS CAPABLE OF BEING OPERATED BOTH SIDES 18" SILLS TO HOUSES AFT

Harwegian

Superstructure bulkheads, trunks, deckhouses, casings, cargo and coaling hatchways, extent and thickness of sheathing on the freeboard deck, gangway, cargo and coaling ports, and any other openings, etc., which would affect the seaworthiness of the ship are to be shewn on the following sketches:—



State any special features in the construction of the ship:—

No TIMBER ASSIGNMENT REQUIRED

OUT

FROM DISPLACEMENT SCALE:—
 ΔT AT SUMMER LOAD WATER LINE $29'-3\frac{1}{2}" = 13515$ TONS. $T/M = 43.5'$
 ΔT " $28'-0" = 12850$ " " $= 43.23$
 ΔT " $24'-0" = 12325$ " " $= 43.02$
 ΔT " $26'-0" = 11815$ " " $= 42.8$

Builder's name and yard number THE CALETON SHIP & ENGINE COY. LTD. TRINITEE No. 254

Names of sister ships.

Owners F. LEYLAND & CO. LTD.

Fee £ 14 : 9 : 0

Received by me

OUT



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