

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker

Having POOP BRIDGE AND FORECASTLE

Port of Survey LONDON

Date of Survey 8th JUNE 1932

Name of Surveyor G. Scantlebury

Particulars of Classification 100A1

Ship's Name HARMODIUS

Nationality and Port of Registry BRITISH LIVERPOOL

Official Number 140657

Gross Tonnage 5229

Date of Build 1919

Moulded Dimensions: Length 299.5 Breadth 52.0 Depth 31.0

Moulded displacement at moulded draught = 85 per cent. of moulded depth 768 tons

Coefficient of fineness for use with Tables 768

Depth for Freeboard (D)

Moulded depth ... 31.00

Stringer plate ... 04

Sheathing on exposed deck

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

Depth for Freeboard (D) = 31.04

Depth correction

(a) Where D is greater than Table depth
(D - Table depth) R =
(31.04 - 26.63) 3.00 = + 13.23

(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) 52.00

Standard Round of Beam = $\frac{B \times 12}{50} = 12.48$

Ship's Round of Beam = 13

Difference 52

Restricted to

Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S}{L} \right) = \frac{52}{4} \times .4991 = -06$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...	49.25	49.25	7.11 1/2	/	49.25
" overhang ...					
R.Q.D. enclosed ...					
" overhang ...	108.50	108.50	7.11 1/2	/	108.50
Bridge enclosed ...	112.64	112.64	3.10	/	3.10
" overhang aft ...	4.14	4.14			
" overhang forward ...					
F'c'ls enclosed ...	38.75	38.75	7.11 1/2	/	38.75
" overhang ...	1.0	1.0	50	/	50
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" forward ...					
Total ...	201.64	200.10			200.10

Standard Height of Superstructure 7.495

" " R.Q.D. 1

Deduction for complete superstructure 41.96

Percentage covered $\frac{S}{L} = 50.48\%$

" " $\frac{S_1}{L} = 50.09\%$

" " $\frac{E}{L} = 50.09\%$

Percentage from Table, Line A.
(corrected for absence of forecastle (if required))

Percentage from Table, Line B. 36.09%
(corrected for absence of forecastle (if required))

Interpolation for bridge less than 2L (if required)

Deduction = 41.96 x .3609 = -15.14

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	49.95	1	49.95	60	60.00	60.00	1	60.00	60.00
1/4 L from A.P. ...	22.23	4	88.92	26	26.07	26.07	4	104.28	104.28
1/2 L " ...	5.49	2	10.98	6.5	6.51	6.51	2	13.02	13.02
Amidships ...		4					4		
3/4 L from F.P. ...	11.00	2	22.00	13.39	13.42	13.42	2	26.84	26.84
1/4 L " ...	44.45	4	177.80	53.72	53.71	53.71	4	214.84	214.84
F.P. ...	99.90	1	99.90	120	120.00	120.00	1	120.00	120.00
Total ...			449.55					538.99	538.99

Mean actual sheer aft = Excess

Mean standard sheer aft

Mean actual sheer forward = Excess

Mean standard sheer forward

Length of enclosed superstructure forward of amidships = 15

" " aft of " = 13

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{89.43}{18} \left(.75 - .2524 \right) = -2.47$

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.

Depth to Freeboard Deck = 31.04 Ft.

Summer freeboard = 5.96

Moulded draught (d) = 25.08

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 6.27 = 6 1/4

Addition for Winter North Atlantic Freeboard (if required) =

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta = 11551$

Tons per inch immersion at summer load water line

$T = 41.25$

Deduction = $\frac{\Delta}{40 T}$ inches = 7

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{.68 + .768}{1.36} = \frac{1.448}{1.36}$

	+	-
Depth Correction ...	13.23	-
Deduction for superstructures ...	-	15.14
Sheer correction ...	-	2.47
Round of Beam correction ...	-	.06
Correction for Thickness of Deck amidships ...	-	-
Other corrections, scantlings, etc. ...	-	-
	13.23	17.67
Summer Freeboard =	71.52	

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

Tropical Fresh Water Line above Centre of Disc ...	13 1/4"	Tropical Fresh Water Freeboard ...	5' 11 1/2"
Fresh Water Line " " ...	7"	Fresh Water " " ...	4' 10 1/4"
Tropical Line " " ...	6 1/4"	Tropical " " ...	5' 4 1/2"
Winter Line below " " ...	6 1/4"	Winter " " ...	5' 5 1/4"
Winter North Atlantic Line " " ...	1"	Winter North Atlantic " " ...	6' 5 3/4"

13 JUN 1932

MAKING FORM
19 MAR 1937
RECEIVED

MAKING FORM
RECEIVED 23 JUN 1932

Lloyd's Register
Foundation

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS														
Description of Hatchway				Nº 1	Nº 2	CROSS BUNTING BDGE.	CROSS BUNTING FREEBOARD DECK	Nº 3	Nº 4					
Dimensions of Hatchway				39-6 X 26-0	34-6 X 26-0	10-10 X 18-0	10-10 X 18-0	34-8 X 26-0	28-2 X 26-0					
COAMINGS	{	Height above Deck	...	30"	31"	18"	✓ 9' 0A.	31"	31"					
		Thickness	Sides	...	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"				
			Ends	...	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"				
		Stiffeners	...	10' X 3 1/2" X 1/2" 2GA.	AS Nº 1.	1/4"	1/4"	1/4"	1/4"					
Brackets, Stays			...	21" UP FROM DR.	NONE	NONE.	AS Nº 1	AS Nº 1						
HATCH BEAMS	{	Number	...	6	6	1	2	6	5					
		Spacing	...	4-8	5-0	5-5	2-6	5-0	5-2					
		Scantling and Sketch	...	2 1/2" X 4 1/2" 6 X 2 1/2" X 1/2" 	AS Nº 1.	1 1/2" X 4 1/2" 4 X 1 1/2" X 1/2" 	1 1/2" X 4 1/2" 3 1/2 X 2 1/2" X 1/2" 	AS Nº 1.	AS Nº 1					
			Bearing Surface	...	3"		3"	3"						
FORE AND AFTERS	{	Number	...	/	/	/	/	/	/					
		Spacing	...	/	/	/	/	/	/					
		Unsupported Lengths	...	/	/	/	/	/	/					
		Scantling* and Sketch	...	/	/	/	/	/	/					
Bearing Surface			...	/	/	/	/	/	/					
HATCH COVERS	{	Material	...	PINE										
		Thickness	...	3"										
		How fitted	...	F 9 A	AS Nº 1	AS Nº 1	AS Nº 1	AS Nº 1	AS Nº 1	AS Nº 1				
		Bearing Surface	...	3"										
Spacing of Cleats				...	24"									
Number of Tarpaulins				...	3	AS Nº 1.	AS Nº 1.	AS Nº 1	AS Nº 1.					

*Are wood fore and afters steel shod at all bearing surfaces? NONE

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

Particulars of fiddley, funnel and ventilator coamings :—

Stokehold grainers covered by strong steel hinged covers. Fully linned and vents in efficient condition. Engine Room Drydock of steel strongly constructed. Ladle back hatch 14'0" x 14'0" x 9' high fitted with 2" wood covers, leaf springs and cleats 18" apart.

Particulars of Flush Bunker Scuttles:—

Particulars of Companionways :—

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

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

2 Vents on Fore Deck. 18" dia canopy.	26' X 34' to Hold.	6 Vents on After Well Deck. 18" dia canopy.	36' X 34' to Hold.
1 " " " 7 1/2 " "	33' X 34' " F. Deck.	2 " " " 18" " "	30' X 24' " "
6 " " Fore Well Deck. 18" " "	26' X 34' " Hold.		
2 " " Bridge Deck. 18" " "	33' X 34' " "		
2 " " " 11" " "	24' X 34' " "		

2800 vents in efficient condition closed with wood plugs.

All tents in efficient condition closed with wood flaps and canvas covers.

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

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

2 B.S. air pipes on fore deck.	2½" dia x 12" height	2 B.S. air pipes on after well deck.	2½" dia x 9" height	} Fitted with ball valves
2 " " " fore well.	2½" " x 7" "	2 " " " "	2½" " x 12" "	
2 " " " "	2½" " x 9½" "	2 " " " "	3" " x 12" "	
4 " " " Bridge deck.	2½" " x 9½" "	1 " " " "	3" " x 9½" "	
2 " " " " "	2½" " x 12½" "			

All air pipes are chased with wood plugging and canvas cover.

Particulars of Gangway Cargo and Coaling Ports:—

Harmonia

W406-0142 (2/2)

Particulars of Scuppers and Sanitary Discharge Pipes:—

all sanitary discharge fitted with storm valves.

Particulars of Side Scuttles:—

all side scuttles fitted with hinged deadlights.

Particulars of Guard Rails:—

On Forecastle Deck 46' high with 4 rods and stanchions 54" apart.
" Bridge " 46 " " 4 " " 54 "
" Poop " 46 " " 4 " " 54 "

Particulars of Gangways, Lifelines, etc.:—

bow hosed in poop space.
manilla rope lifelines in after well. efficiently supported.

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	99-6	42 1/2	52 1/2 x 15 1/4	4	22.3529 ft ²	20 29 ft ²
Forward Well	100-0	43 1/2	52 1/2 x 15 1/4	4	22.3529 ft ²	20 29 ft ²
State position of each freeing port { After Well:— @ 14-0 @ 34-6 @ 62-0 and @ 85-0 from forward end. (F. and A. position and height above deck edge) { Forward Well:— @ 8-0 @ 32-0 @ 56-0 " @ 73-0 " after end. 14" above deck						
State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— 2 bars no shutters.						
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	42	42	6 1/2 x 3 1/2 x 48	27	lugs @ top and bottom	2 @ 5-6 x 2-0	19	7-11 1/2
Raised Quarter Deck Bulkhead ...								
Bridge, After Bulkhead	40	40	5 x 3 x 42	26	lugs @ top and bottom	2 @ 5-6 x 4-6	19	7-11 1/2
Bridge, Forward Bulkhead	50	42	9 x 3 1/2 x 50 BA	31	Bracket top & bottom	None		7-11 1/2
Forecastle Bulkhead	32	32	3 x 3 x 32	29	None	2 @ 4-6 x 5-6	18	7-11 1/2
Trunk, Aft								
Trunk, Forward								
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	40	40	3 x 3 x 42	26	Riveted to beam	2 @ 4-10 x 2-1	17	7-11 1/2
Exposed Machinery Casings on Super-structure Decks	40	40	3 x 3 x 42	26	Bracket top & bottom	2 @ 4-9 x 1-11 2 @ 4-9 x 2-2	19 18	7-7
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	40	40	3 x 3 x 42	26	riveted to beam	2 @ 4-8 x 2-0	17	7-11 1/2
Deckhouses on Flush Deck Ships ...								

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

Poop Bulkhead	Steel hinged doors operated from both sides.
Raised Quarter Deck Bulkhead ...	
Bridge, After Bulkhead	Shifting boards in riveted channels full height.
Bridge, Forward Bulkhead	
Forecastle Bulkhead	Shifting boards in riveted channels full height.
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	Wood doors operated from both sides.
Exposed Machinery Casings on Super-structure Decks	Steel hinged doors operated from both sides.
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	Steel hinged doors operated from both sides.
Deckhouses on Flush Deck Ships ...	

(Teak, panelled doors of strong construction, per M^{rs} Scantling 10-6-32)
(Reinforced with steel plates per London Dockyard 25-6-32)



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Superstructure Deck

Freeboard Deck

Bridge enclosed = $112.64 - \frac{(5.0 \times 21.5)}{2} = 108.59$
 Overhang = $4.14'$ allowed $3.10'$

State any special features in the construction of the ship:— No wood sheathing.

Deel & Sh. Hood Trunk marked AS' against fore end of machinery casing on edge with lined flap (sheet) 35" above deck.

Hatch 2-0 x 2-0 x 15" high li Fore Pepl. with 3" wood cover and locking bar but no cleats.

Hatch 2-0 x 2-0 x 15" " " Chain locker fitted with 3" wood cover. Tarpsaulins and cleats 18" apart.

Four Hatches on Bridge Deck (B.H.) 8-0 x 4-0 x 31" high fitted with 3" wood cover. Tarpsaulins and cleats spaced 18" apart.

Two " " (A.H.) 2-0 x 2-0 x 9" " " 3" " " " " 18" "

Two " " Foreboard " (B.H.) in Bridge Space 8-0 x 4-0 x 14" high fitted with 3" wood cover " " " 18" "

Four " " " (T.H.) " " 2-0 x 2-0 x 9" " " 3" " " " and lined locking bar

Hatch on Roof Deck li Roof Space (R.H.) 2-0 x 3-0 x 9" high " " 3" " " Tarpsaulins and cleats spaced 24" apart.

Alleyways P & S. at after end of bridge space. have no closing appliances but have steel sills 24" high which act as breakwaters. Cds marked above. there are doors to Engine Room from these alleyways.

(Survey held afloat, per Mr. Scantlebury 10-6-32.)

S.S. No. 3. now partly held. This proposed to advance if not complete survey at Mukdebongli at this time.

Fee £ 13 : 12 : 0 Received by me

Received by me