

Rpt. C.11.

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having 2 DECKS (STEEL) & ORANGE DECK (STEEL) IN HULL AND A WING DECK (STEEL) HANGING SWEATHED BRIDGE AND ROOF ON WING DECK.

(Type of Superstructures.)

Ship's Name **"HARPOOL"** Nationality and Port of Official Number **120759** Gross Tonnage **4391** Date of Build **1909-7**

Port of Survey **SYDNEY N.S.W.**

Date of Survey **27th SEPT. 1935**

Name of Surveyor **Jas. C. Eshmi**

Moulded Dimensions: Length **419.7** Breadth **36.0** Depth **17.44** Moulded draught **14.815** tons

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

Coefficient of fineness for use with Tables **.705**

Particulars of Classification **AWING DECK WITH 4 DECKS 9.34**

Depth for Freeboard (D) **36.83**

Moulded depth

Stringer plate

Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) = 25 \times 42.66 = 1.11$

Depth for Freeboard (D) = **36.98**

Depth correction

(a) Where D is greater than Table depth $R = (36.98 - 27.98) \times 3.00 = + 27.00$

(b) Where D is less than Table depth (if allowed) (Table depth - D) R = \checkmark

If restricted by superstructures \checkmark

Round of Beam correction

Moulded Breadth (B) **56.00**

Standard Round of Beam = $\frac{B \times 12}{50} = 13.44$

Ship's Round of Beam = **12**

Difference **Deficient 1.44**

Restricted to

Correction = $\frac{\text{Diff}}{4} \times (1 - \frac{S_1}{L}) = \frac{1.44}{4} \times .5793 = +.21$

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 open after end ...	159.67	119.75	8'-3"	\checkmark	119.75
" overhang aft ...					
" overhang forward ...					
Fore enclosed open ...	81.00	56.81	8'-0"	\checkmark	56.81
" overhang ...					
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" forward ...					
Total ...	240.67	176.56			176.56

Standard Height of Superstructure **7'-6"**

" " R.Q.D. \checkmark

Deduction for complete superstructure **42.00**

Percentage covered $\frac{S}{L} = 57.34\%$

" " $\frac{S_1}{L} = 42.07\%$

" " $\frac{E}{L} = 42.07\%$

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

Percentage from Table, Line B. (corrected for absence of forecastle (if required)) **29.26%**

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

Deduction = **42.00** \times **.2926** = **-12.29**

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	51.97	1		51.97	26.00	26.00	1		26.00
$\frac{1}{2}$ L from A.P. ...	23.12	4		92.48	13.75	43.00	4		17.20
$\frac{3}{4}$ L " ...	5.715	2		11.43	6.25	12.50	2		-4.20
Amidships ...	\checkmark	4		\checkmark	\checkmark	\checkmark	4		\checkmark
$\frac{3}{4}$ L from F.P. ...	11.43	2		22.86	9.75	13.00	2		26.00
$\frac{1}{2}$ L " ...	46.25	4		185.00	37.5	140.40	4		161.60
F.P. ...	103.94	1		103.94	86.00	86.00	1		86.00
Total ...				467.68					312.60

Mean actual sheer aft = **Deficient**

Mean standard sheer aft

Mean actual sheer forward = **Deficient**

Mean standard sheer forward

Length of enclosed superstructure forward of amidships = **Deficient**

" " aft of " = **sheers**

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
Standard	11.43	3		34.29	13.00	39.00			
46.25	3			138.75	40.40	121.20			
103.94	1			103.94	86.00	86.00			
Total				276.98					246.20 = 88.88%

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{155.08}{18} (.75 - .2867) = +3.99$

If limited on account of midship superstructure. \checkmark

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

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = **37.04**

Summer freeboard = **11.71**

Moulded draught (d) = **25.33**

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = **6.33 = $6\frac{1}{4}$**

Addition for Winter North Atlantic Freeboard (if required) = \checkmark

Deduction for Fresh Water.

Displacement in salt water at summer load water line

Δ =

Tons per inch immersion at summer load water line

T =

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

$\frac{1}{4} = 6\frac{1}{4}$

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

	+	-
Depth Correction ...	27.00	
Deduction for superstructures ...		12.29
Sheer correction ...	3.99	
Round of Beam correction21	
Correction for Thickness of Deck amidships72	
Other corrections, scantlings, etc. ...	41.75	
Summer Freeboard =	73.67	12.29
		+ 61.38
		140.50

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

Tropical Fresh Water Line above Centre of Disc ...	$12\frac{1}{2}$
Fresh Water Line " " ...	$6\frac{1}{4}$
Tropical Line " " ...	$6\frac{1}{4}$
Winter Line below " " ...	$6\frac{1}{4}$
Winter North Atlantic Line " " ...	$6\frac{1}{4}$

Tropical Fresh Water Freeboard ...	$11'-8\frac{1}{2}"$
Fresh Water " " ...	$10'-8"$
Tropical " " ...	$11'-2\frac{1}{4}"$
Winter " " ...	$11'-2\frac{1}{4}"$
Winter North Atlantic " " ...	$12'-2\frac{3}{4}"$

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PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS ON SUPERSTRUCTURE DECKS									
Description of Hatchway	N°1	N°3	N°4	N°1	N°2				
Dimensions of Hatchway	15'0" x 12'0"	15'0" x 12'0"	15'0" x 12'0"	15'0" x 12'0"	15'0" x 12'0"				
COAMINGS	Height above Deck	30"	30"	30"	30"				
	Thickness	1/4"	1/4"	1/4"	1/4"				
	Sides	1/4"	1/4"	1/4"	1/4"				
	Stiffeners	1/4"	1/4"	1/4"	1/4"				
HATCH BEAMS	Number	1	1	1	1				
	Spacing	10'0"	10'0"	10'0"	10'0"				
	Scantling and Sketch	2" x 10"	2" x 10"	2" x 10"	2" x 10"				
	Bearing Surface	2" x 10"	2" x 10"	2" x 10"	2" x 10"				
FORE AND AFTERS	Number	1	1	1	1				
	Spacing	10'0"	10'0"	10'0"	10'0"				
	Scantling and Sketch	2" x 10"	2" x 10"	2" x 10"	2" x 10"				
	Bearing Surface	2" x 10"	2" x 10"	2" x 10"	2" x 10"				
HATCH COVERS	Material	WOOD	WOOD	WOOD	WOOD				
	Thickness	2 1/4"	2 1/4"	2 1/4"	2 1/4"				
	How fitted	2 1/4"	2 1/4"	2 1/4"	2 1/4"				
	Bearing Surface	2 1/4"	2 1/4"	2 1/4"	2 1/4"				
Spacing of Cleats	22 1/2"	23 1/2"	23 1/2"	22 1/2"	23"				
Number of Tarpaulins	2	2	2	2	3				

*Are wood fore and afters steel shod at all bearing surfaces? YES.
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 fiddle, funnel and ventilator coamings:-

Engine casing fitted with efficient steel skylight.
Funnel casing carried full height of funnel.
Machinery space ventilators of strong construction, well supported and passing inside casing.
Fiddle gratings on top of casing 8 feet in height above level deck - no door covers fitted.

Particulars of Flush Bunker Scuttles:-

On Superstructure Deck, 4 each side of heavy cast iron with 18 inch flanges.
These are not now used and are permanently closed.

Particulars of Companionways:-

On Freeboard Deck.
To N°1 Tween Deck:- One provided in and protected by freeboard.
Opening in deck 7'11" by 2'6". Opening in companionway 4'2" by 1'9 1/2". Still 18".
Height of companionway 6'3". Fitted with solid hardwood door 1 1/4" thick which can be manipulated from both sides.

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

On Forewell:- To hold 4-16" dia. To Forewell 8-9" dia. all coamings 30".
On Forewell:- To hold 4-16" dia. 10'0" in height, secured to deck above.
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Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks:-

On Forewell:- 1-3" dia. Height to flaring 15".
On Forewell:- One each side, 2 1/4" dia. Height to flaring 15".
On Bridge Deck:- 9 feet and 6 inches. 2 1/4" by 16" to flaring.
On After Deck:- 4 feet and 6 inches. 2 1/4" dia. by 16" to flaring.
Wood flanges provided for all air pipes.

Particulars of Gangway Cargo and Coaling Ports:-

Cargo ports, above main deck in N°1 Tween decks, 1 port, 1 starboard.
Opening 6'0" x 2'10 1/2". 4'4" x 3" angle frame on shell. Hinged steel door in halves with rubber joint and secured by 2 1/4" x 1 1/4" strongbacks and 4 1/4" screws.
Port to store rooms aft, starboard side, 6'0" x 3'6". 4'4" x 3" angle frame on shell. Hinged steel door with rubber joint and secured by 2 1/4" x 1 1/4" strongbacks and 4 1/4" screws.
Cargo ports, 3 each side below main deck. Opening 2'7" x 2'6". Heavy cast steel frame on shell. Door of cast steel, 7/8" thick and heavily ribbed. Rubber joint, secured by 4 action cast steel strongbacks hinged in place and 4 1 1/4" screws.
Coaling Ports, 6 each side above main deck. Opening 2'3" x 1'9". Heavy cast steel frame on shell. Hinged door of cast steel, 1" thick and well ribbed. Rubber joint, secured by 4 action cast steel strongbacks hinged in place, with one 2" screw.

Particulars of Scuppers and Sanitary Discharge Pipes:-

Scuppers and sanitary discharges from spaces above the main deck 1 1/2" to 3" dia. each fitted with one gunmetal automatic closing valve and discharging 3 feet below main deck. All as to spaces below the freeboard and 2nd deck have valves incorporated therein. The scuppers and other discharges have 1 1/2" dia. valves with non-rotatable screw plugs at their upper ends. No discharges will be fitted from spaces below the main deck.

Particulars of Side Scuttles:-

On Forewell, 12" dia. On Bridge, 14" dia. without dead light.
Below Main Deck:- Cargo space forward 12" dia. with hinged dead light. (See main relation spaces and 3rd deck). 14" dia. with hinged dead light. On 1st Class Saloon, 15" dia. without dead light.
Below Main Deck:- Cargo space forward 10" dia. with hinged dead light and portable flange.
On accommodation spaces:- 12" dia. with hinged dead light and portable flange.
Side of lower side scuttles 10'4 1/4" below top of freeboard deck at side amidships.

Particulars of Guard Rails:-

On Forewell:- 4 bar rails, 3'6" in height.
On Deck:- 5 bar rails, 4'0" in height.

Particulars of Gangways, Lifelines, etc.:-

Efficient temporary lifelines arranged when required.

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	28'0"	4'0"	3'0" x 1'0"	1097.1 5199.3	34 94	
Forward Well	28'0"	4'4"	3'0" x 1'0"	1	34	4.67 7.50

State position of each freeing port ... After Well - 28'0" - Height above deck edge 9"
(P. and A. position and height above deck edge) Forward Well:- 4" from after bulkhead. Height above deck edge 12"
State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:- Fitted with hinged shutters.
Additional area where sheer is less than standard.

Particulars of Superstructures, Trunks, Casings, Deckhouses.

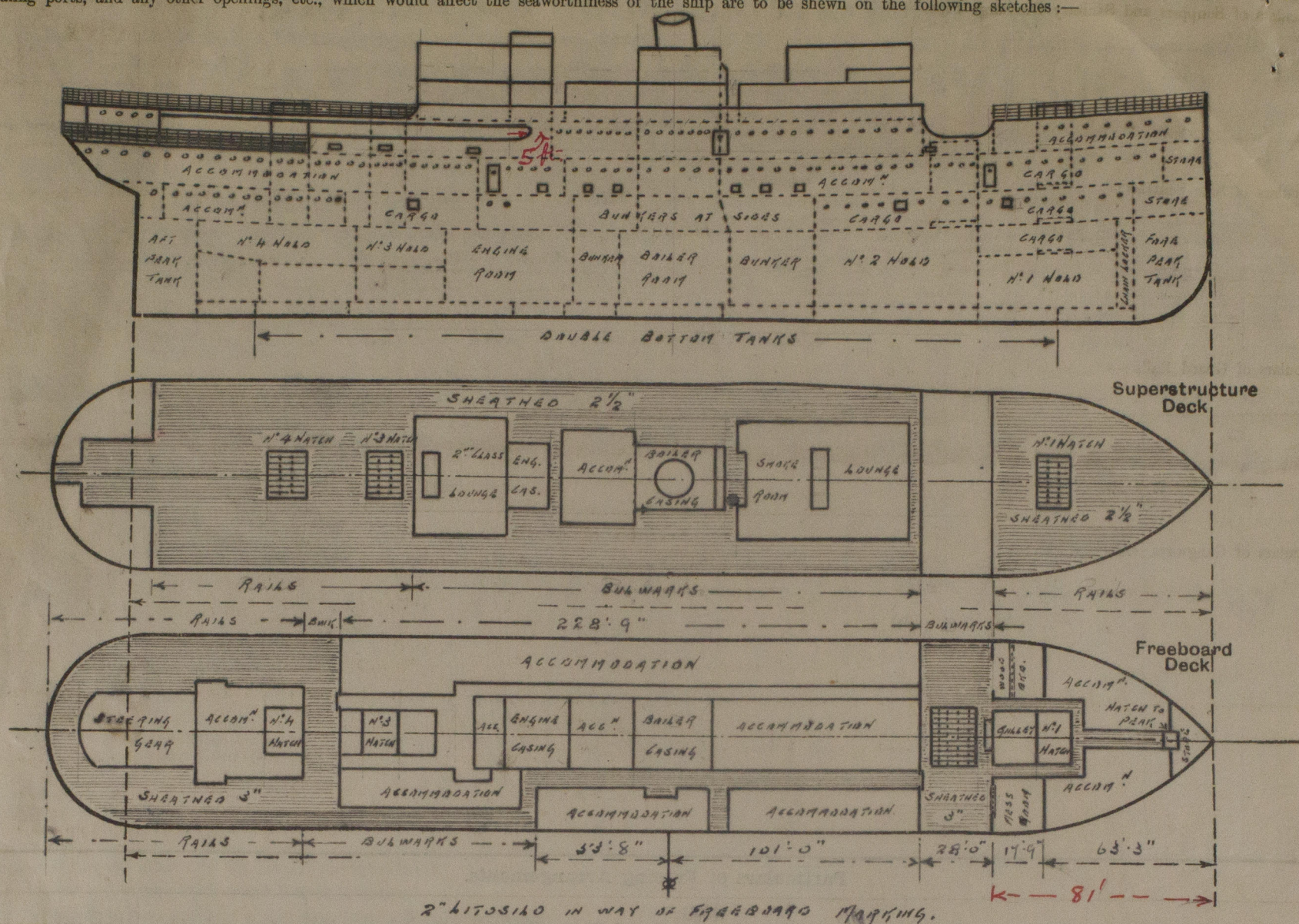
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead								
Raised Quarter Deck Bulkhead								
Bridge, After Bulkhead	132"	32"	4" x 2 1/2"	36"	BRACKETED TO AND BOTTOM	3'0" x 3'0"	10"	8'0"
Bridge, Forward Bulkhead	140"	34"	8" x 3 1/2" x 4"	27 1/2"	BRACKETED TO AND BOTTOM	63" x 42"	17"	8'0"
Forecastle Bulkhead	26"	26"	4" x 2 1/2"	30"	NONE	66" x 24"	12"	8'0"
Trunk, Aft								
Trunk, Forward								
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	50"	36"	3" x 2 1/2" x 36"	32"	ANCHORED TO DECK ABOVE	2'6" x 2'6"	15"	8'0"
Exposed Machinery Casings on Superstructure Decks	36"	36"	3" x 2 1/2" x 36"	32"	- DO -	NONE	14"	7'6"
Machinery Casings within Superstructures not fitted with Class I Closing Appliances								
Deckhouses on Flush Deck Ships								

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

Poop Bulkhead	
Raised Quarter Deck Bulkhead	1 1/4" Solid Hardwood Doors. Can be manipulated from both sides.
Bridge, After Bulkhead	Open. No closing appliances.
Bridge, Forward Bulkhead	Open. 1 1/4" hinged hardboard doors. Can be manipulated from both sides.
Forecastle Bulkhead	Open. 1 1/4" hinged hardboard doors. Can be manipulated from both sides.
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	Hinged steel and 1 1/4" solid hardwood doors. Can be manipulated from both sides.
Exposed Machinery Casings on Superstructure Decks	No flanges.
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	
Deckhouses on Flush Deck Ships	

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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:—

Passenger and cargo vessel usually trading on the Australian Coast but making occasional voyages overseas. Surveyed afresh without including any portion of a Special Survey.

Displacements as per Builder's Plan.

Depth.	Displacement.
26' 4"	12,000 tons.
25' 5 1/4"	11,500
24' 5"	11,000
22' 6 1/2"	10,000

Hatch on Freeboard Deck:— To Fore Peak (within forecastle):— 3'6" x 3'0" with 12" coaming.

Fitted with 2 1/2" wood cover on 2 1/2" sole. No battening arrangements.

Builder's name and yard number Harland and Wolff Ltd. Yard N° 404.

Names of sister ships

Owners M. J. Smith M. E. Scham Ltd.

Fee £ 18 : 0 : 0

Received by me