

WRECK SECTION

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

No. 450

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having One deck, steel
Loucas, Bridge, and Raised Quarter Deck
(Type of Superstructures.)

Port of Survey Sydney N.S.W.

Date of Survey 30th August 1935

Name of Surveyor E. L. Cartwright

Particulars of Classification ± 100 A1
S.S. Syd. No 1-34

Ship's Name S.S. "BOMBO"

Nationality and Port of Registry British
Sydney N.S.W.

Official Number 157634

Gross Tonnage 602

Date of Build 1930-2

Moulded Dimensions: Length 154'-0" Breadth 30'-0" Depth 14'-2"

Moulded displacement at moulded draught = 85 per cent. of moulded depth 1113 tons

Coefficient of fineness for use with Tables .700

Depth for Freeboard (D)		Depth correction		Round of Beam correction	
Moulded depth	14.17'	(a) Where D is greater than Table depth	3.94'	Moulded Breadth (B)	30.00'
Stringer plate	.50"	(D-Table depth) R = (14.21 - 10.27)	1.184'	Standard Round of Beam = $\frac{B \times 12}{50}$	7.20"
Sheathing on exposed deck				Ship's Round of Beam	7.2"
$T \left(\frac{L-S}{L} \right) =$		(b) Where D is less than Table depth (if allowed)		Difference	Excess .30"
Depth for Freeboard (D) =	14.21'	(Table depth-D) R =		Restricted to	
		If restricted by superstructures		Correction = $\frac{\text{Diff}^e}{4} \times \left(1 - \frac{S_1}{L} \right)$	$= \frac{.30}{4} \times .4285 = -.03"$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed ...						Standard Height of Superstructure <u>6.00'</u>
" overhang ...						" " R.Q.D. <u>3.36'</u>
R.Q.D. enclosed ...	48.5'	48.50	3'-6"	✓	48.50	Deduction for complete superstructure <u>21.40"</u>
" overhang ...						Percentage covered $\frac{S}{L} = 57.15\%$
Bridge enclosed ...	18'	18.00	4'-3"	✓	18.00	" " $\frac{S_1}{L} = 57.15\%$
" overhang aft ...						" " $\frac{E}{L} = 57.15\%$
" overhang forward ...						Percentage from Table, Line A. <u>42.01%</u>
Fore enclosed ...	21.5'	21.50	4'-3"	✓	21.50	(corrected for absence of forecastle (if required))
" overhang ...						Percentage from Table, Line B. ✓
Trunk aft ...						(corrected for absence of forecastle (if required))
" forward ...						Interpolation for bridge less than 2L (if required) ✓
Tonnage opening aft ...						Deduction = <u>21.40 × .4201 = - 8.99"</u>
" forward ...						
Total ...	88.0	88.00			88.00	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P.	25.40	1		25.40	28"	28.00	1		28.00	Mean actual sheer aft = Excess
1/4 L from A.P.	11.30	4		45.20	13"	13.00	4		52.00	Mean standard sheer aft = Excess
1/2 L	2.79	2		5.58	3.25"	3.25	2		6.50	Mean actual sheer forward = Excess
Amidships		4			0		4			Mean standard sheer forward = Excess
3/4 L from F.P.	5.59	2		11.18	4"	4.00	2		14.00	Length of enclosed superstructure forward of amidships = Nil
1/4 L	22.60	4		90.40	27.75"	27.75	4		111.00	" " aft of " = $\frac{4.9}{154} = .032L$
F.P.	50.80	1		50.80	57"	57.00	1		57.00	
Total	228.6			228.56					268.50	

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - S}{2L} \right) = \frac{39.94}{18} \left(\frac{.75 - .2857}{.4643} \right) = -1.03"$

If limited on account of midship superstructure. $\frac{.032}{.200} \times 1.03 = -.16"$ If limited to maximum allowance of 1 1/2 ins. per 100 ft. ✓

Deduction for Tropical Freeboard.		Deduction for Fresh Water.		TABULAR FREEBOARD corrected for Fresh Deck (if required)	
Addition for Winter and Winter North Atlantic Freeboard.		Displacement in salt water at summer load water line	$\Delta = 1253$	Correction for coefficient	$\frac{.70 + .68}{1.36} = \frac{1.38}{1.36}$
Depth to Freeboard Deck =	14.21'	Tons per inch immersion at summer load water line	T = 8.98	Depth Correction	4.66'
Summer freeboard =	.98'	Deduction = $\frac{\Delta}{40T}$ inches	$= \frac{1253}{40 \times 8.98} = 3.49" = 3.5"$	Deduction for superstructures	8.99'
Moulded draught (d) =	13.23'			Sheer correction	.16'
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches =	3.32' = 3 1/4"			Round of Beam correction	.03'
Addition for Winter North Atlantic Freeboard (if required) =				Correction for Thickness of Deck amidships	-
				Other corrections, scantlings, etc.	-
				Summer Freeboard =	11.78'

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck:—			
Existing freeboard as reassigned, being more favorable than those computed under the Convention regulations			
Tropical Fresh Water Line above Centre of Disc	5 1/2"	Tropical Fresh Water Freeboard	0' - 11 3/4"
Fresh Water Line	3 1/2"	Fresh Water	0' - 6 1/4"
Tropical Line	2"	Tropical	0' - 8 1/4"
Winter Line below	2"	Winter	0' - 9 3/4"
Winter North Atlantic Line	4"	Winter North Atlantic	1' - 13 1/4"

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway	N ^o 1	N ^o 2					
Dimensions of Hatchway	18' FWD. x 19' AFT x 22'-0"	19'-0" x 22'-0"					
COAMINGS	Height above Deck	...	30"	30"					
	Thickness	...	40"	40"					
	Stiffeners	...	4" x 3" x 5" B.A.	4" x 3" x 5" B.A.					
	Brackets, Stays	...	2" x 3" x 3" B.P. & ANGLES EACH HATCHWAY	2" x 3" x 3" B.P. & ANGLES EACH HATCHWAY					
	Bearing Surface	...	3"	3"					
HATCH BEAMS	Number	...	3	3					
	Spacing	...	5' x 5' 9"	5' 7"					
	Scantling and Sketch	...	PLATE:- 19' 6" 10' x 36' 1"	19' 6" 10' x 36' 1"					
		...	ANGLES:- 4 1/2" x 3" x 46' 1"	4 1/2" x 3" x 46' 1"					
	Bearing Surface	...	3"	3"					
FORE AND AFTERS	Number	...	NONE	NONE					
	Spacing	...	NONE	NONE					
	Unsupported Lengths	...	NONE	NONE					
	Scantling* and Sketch	...	NONE	NONE					
	Bearing Surface	...	NONE	NONE					
HATCH COVERS	Material	...	OREGON PINE	OREGON PINE					
	Thickness	...	2 1/2"	2 1/2"					
	How fitted	...	FORE & AFT	FORE & AFT					
	Bearing Surface	...	3"	3"					
	Spacing of Cleats	...	24"	24"					
Number of Tarpaulins			2	2					
*Are wood fore and afters steel shod at all bearing surfaces? NOT 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, including special lashings									

Particulars of fiddle, funnel and ventilator coamings:-

Fidley gratings fitted with hinged steel covers, secured by cleat fastenings.
 Funnel fitted with iron casing 14" in height from casing top, with canvas cover.
 Engine room skylights of steel, with hinged steel covers.
 Vents to stokehold of strong construction, passing through casing. No ventilators fitted to engine room.

Particulars of Flush Bunker Scuttles:-

One port, and one starboard, of cast iron, strong construction, with bayonet fastenings, also plates and set screws, on raised quarter deck.

Particulars of Companionways:-

On Raised Quarter Deck, at after end of bridge, port & starboard sides, companionways to Officers quarters. 5'-6" x 2'-6", 4'-1" in height. Openings 22" x 59", 1 1/2" teakwood doors operated from both sides. Height of sills 15".

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

On Forecastle Deck:- Two, 6" diam. 32" coamings, 1 two, 6" diam. 12" coamings, and four, 3" diam. cast iron swan neck type, 7" to openings.
 In Fore Well:- Three, 12" diam. 42" coamings, one, 9" diam. 10" coaming with mushroom cover, secured to fore-castle bulkhead.
 On Bridge Deck:- Two, 6" diam. 12" coamings, and two, 6" diam. 12" coamings with mushroom covers.
 No ventilators on the R.Q. Deck. All ventilator coamings riveted to decks, except cast iron vents.
 Hood & Canvas Covers provided.

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

On Forecastle Deck:- Two, 2 3/4" diam. Height to opening 9". One, 3" diam. 21" to opening.
 In Fore Well:- Four, 3" diam. 30" to opening.
 On Raised Quarter Deck:- One, 2 1/2" diam. 11" to opening.
 all of steel, swan neck type. Canvas covers supplied for temporary closing appliances.

Particulars of Gangway Cargo and Coaling Ports:-

NONE

Particulars of Scuppers and Sanitary Discharge Pipes:-

Sanitary discharges each fitted with one cast iron automatic steam valve.
 No Scuppers or Sanitary discharges from spaces below the freeboard deck.

Particulars of Side Scuttles:-

In Forecastle:- Four, 9" diam. on Port Side, and four, 9" diam. on Starboard Side.
 In Fore Well:- Two, 11" diam. on Port Side, and two, 11" diam. on Starboard Side.
 No other side scuttles fitted.
 All above mentioned side scuttles fitted with hinged deadlights.

Particulars of Guard Rails:-

Forecastle Deck:- 2 bar open rails, 36" in height.
 In Fore Well:- Steel bulwarks, 42" in height, with 6" x 3/4" B.P. stiffeners, spaced 5'-8" apart.
 On Bridge:- Steel bulwarks, 42" in height, with 1 1/2" palm stays, spaced 4'-6" apart.
 On R.Q. Deck:- Steel bulwarks, 36" in height, with 3" x 3" x 31" stiffeners, spaced 6'-0" apart.

Particulars of Gangways, Lifelines, etc.:-

No gangways.
 Efficient temporary lifelines erected, when required.

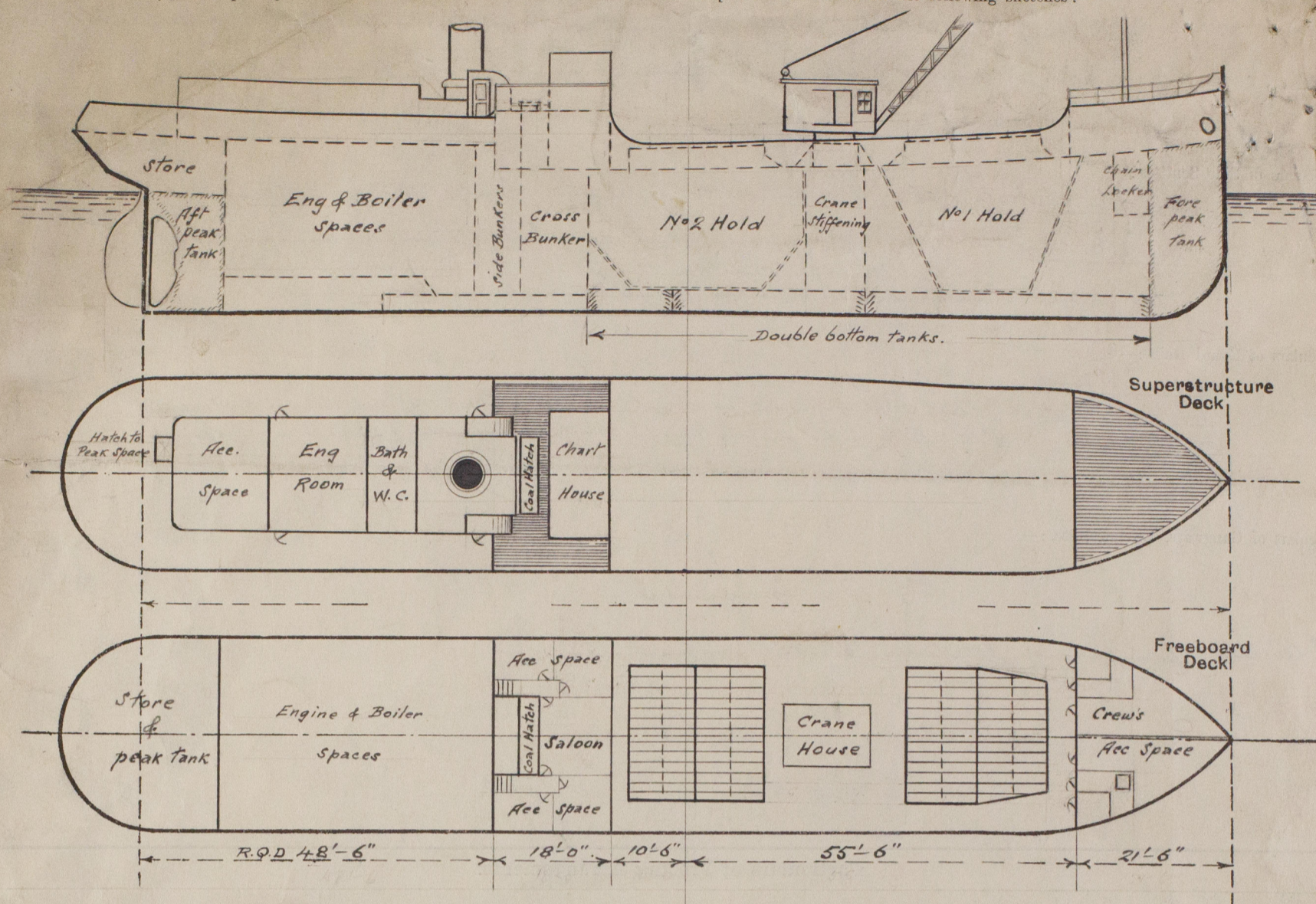
Particulars of Freeing Arrangements.						
	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
After Well R.Q. DECK ...	48'-6"	36"	Long 39" x 15" Gm 21" x 15" EACH SIDE	3	10.31 sq	11.35 sq
Forward Well ...	66'-0"	42"	39" x 15"	3	14.62 sq	13.2 sq
State position of each freeing port ... After Well:- FWD. 8" → 13'-10" → 14'-6" → 8'-3" → AFT (F. and A. position and height above deck edge) Forward Well:- FWD. 9'-4" → 20'-8" → 24'-11" → 1'-1" → AFT State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:- Hinged steel shutters with one rail (except one each side, after end of fore well, with no shutter, but one rail). Height above deck edge 9". 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	✓ 88"	✓ 38"	6" x 3" x 31" B.A.	26"	BRACKETS	NONE	NONE	3'-6"
Bridge, After Bulkhead	✓ 31"	✓ 31"	6" x 3" x 31" B.A.	26"	LUGS AT TOP BRACKETS AT BOTTOM	NONE	NONE	4'-3"
Bridge, Forward Bulkhead	✓ 31"	✓ 31"	6" x 3" x 31" B.A.	30"	LUGS AT TOP AND BOTTOM	NONE	NONE	4'-3"
Forecastle Bulkhead	✓ 31"	✓ 25"	2 1/2" x 2 1/2" x 31"	32" to 34"	NONE	22" x 58"	16"	4'-3"
Trunk, Aft	✓	✓	✓	✓	✓	✓	✓	✓
Trunk, Forward	✓	✓	✓	✓	✓	✓	✓	✓
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	✓ 31"	✓ 34"	3" x 2 1/2" x 31"	28"	BRACKETS AT TOP ONLY	24" x 54"	18"	4'-0"
Exposed Machinery Casings on Superstructure Decks	✓	✓	✓	✓	✓	✓	✓	✓
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	NO OPENINGS ✓
Bridge, After Bulkhead	NO OPENINGS ✓
Bridge, Forward Bulkhead	NO OPENINGS ✓
Forecastle Bulkhead	Hinged 1 3/4" teakwood doors, operated from both sides ✓
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	Hinged 1.25" steel doors operated from both sides ✓
Exposed Machinery Casings on Superstructure Decks	✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	✓
Deckhouses on Flush Deck Ships	✓

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:—



Cargo vessel usually trading between Sydney N.S.W. and N.S.W. Ports. Surveyed afloat, without including any portion of a Special Survey.

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

On Foreboard Deck:— In forecabin, hatchway to chain locker, 21" x 18", with 2½" x 2½" x 3½" O.A. coaming, 2½" wood cover, no cleats, battens, or tarpaulins.

On Bridge Deck:— Midline hatchway to bunkers, 2'-6" x 11'-0", 9" coaming, 2½" wood cover, 2½" ribs, with cleats, battens, & tarpaulins.

On Raised Quarter Deck:— To after peak stores, hatchway 24" x 36", coaming 24" in height, 2½" wood cover, 1½" ribs, with cleats, battens, & tarpaulins.

Forecastle Deck, and Bridge Deck sheathed with 2½" Oregon pine.

Builder's name and yard number LC Robb Ltd. Leith. No 154

Names of sister ships NONE

Owners New South Wales Government

Fee £ 8 : 0 : 0

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