

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

29 APR 1935

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having Two decks (steel). Complete superstructure vessel having no tonnage opening, with open fore-castle and open bridge on upper deck.
(Type of Superstructures.)

Port of Survey Sydney A.S.W.

Date of Survey 1st, 7th and 14th March 1935

Name of Surveyor Geo. C. E. Skene

Particulars of Classification *100 A1 with freeboard. S.S. Syd. A.S.W. 32

Ship's Name <u>S.S. "ARKABA"</u>	Nationality and Port of Registry <u>British 1754 B 1349 NE</u>	Official Number <u>131993</u>	Gross Tonnage <u>4212</u>	Date of Build <u>1924-5</u>
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Moulded Dimensions: Length 340' Breadth 47' Depth 23'-10" 6 main deck 32'-4" to upper deck

Moulded displacement at moulded draught = 85 per cent. of moulded depth 9934 tons

Coefficient of fineness for use with Tables 786

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth ... <u>32.58</u>	(a) Where D is greater than Table depth (D-Table depth) R = <u>(32.62 - 22.67) * 2.615 = + 26.02</u>	Moulded Breadth (B) <u>47'</u>
Stringer plate <u>1.40</u> "upper deck"	(b) Where D is less than Table depth (if allowed) (Table depth-D) R = <u>9.95</u>	Standard Round of Beam = $\frac{B \times 12}{50} = \frac{47 \times 12}{50} = 11.28$
Sheathing on exposed deck <u>✓</u>	If restricted by superstructures <u>✓</u>	Ship's Round of Beam = <u>12"</u>
T $\left(\frac{L-S}{L}\right) =$		Difference <u>72</u>
Depth for Freeboard (D) = <u>32.62</u>		Restricted to <u>✓</u>
		Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L}\right) = \frac{72}{4} \times 8684 = -16$

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 ...	<u>21'-6"</u>	<u>10.75</u>	<u>7.5'</u>	<u>✓</u>	<u>10.75</u>
" overhang aft ...					
" overhang forward ...	<u>34'-0"</u>	<u>34.00</u>	<u>7.5'</u>	<u>✓</u>	<u>34.00</u>
F'cle enclosed ...					
" overhang ...					
Trunk aft ...					
forward ...					
Tonnage opening aft ...					
" forward ...					
Total ...	<u>55.50</u>	<u>44.75</u>			<u>44.75</u>

Standard Height of Superstructure 6.90

" " R.Q.D. ✓

Deduction for complete superstructure 38

Percentage covered $\frac{S}{L} = \frac{16.32}{100} = 16.32$

" " $\frac{S_1}{L} = \frac{13.16}{100} = 13.16$

" " $\frac{E}{L} = \frac{13.16}{100} = 13.16$

Percentage from Table, Line A. 6.58
(corrected for absence of fore-castle (if required))

Percentage from Table, Line B. 8.32
(corrected for absence of fore-castle (if required))

Interpolation for bridge less than 2L (if required) 6.58 + (1.74 * 10.75 / 68) = 6.85

Deduction = 38 * 0.685 = - 2.60

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	<u>44.00</u>	1		<u>44.00</u>	<u>54</u>	<u>54</u>	1		<u>54</u>
1/4 L from A.P. ...	<u>19.58</u>	4		<u>78.32</u>	<u>24</u>	<u>24</u>	4		<u>96</u>
1/2 L " ...	<u>4.84</u>	2		<u>9.68</u>	<u>6</u>	<u>6</u>	2		<u>12</u>
Amidships ...	-	4		-	0	0	4		-
3/4 L from F.P. ...	<u>9.68</u>	2		<u>19.36</u>	<u>12</u>	<u>12</u>	2		<u>24</u>
3/8 L " ...	<u>39.16</u>	4		<u>156.64</u>	<u>48</u>	<u>48</u>	4		<u>192</u>
F.P. ...	<u>88.00</u>	1		<u>88.00</u>	<u>108</u>	<u>108</u>	1		<u>108</u>
Total ...				<u>396.00</u>					<u>486</u>

Mean actual sheer aft = Excess

Mean standard sheer aft = Excess

Mean actual sheer forward = Excess

Mean standard sheer forward = Excess

Length of enclosed superstructure forward of amidships = Nil

" " aft of " = Nil

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{75-S}{2L} \right) = \frac{90}{18} \left(\frac{75-0.816}{1.684} \right) = -3.34$

If limited on account of midship superstructure. Nil

If limited to maximum allowance of 1 1/2 ins. per 100 ft. ✓

<p>Deduction for Tropical Freeboard.</p> <p>Addition for Winter and Winter North Atlantic Freeboard.</p> <p>Depth to Freeboard Deck = <u>32.62</u></p> <p>Summer freeboard = <u>10.50</u></p> <p>Moulded draught (d) = <u>22.12</u></p> <p>Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <u>5.53 = 5 1/2</u></p> <p>Addition for Winter North Atlantic Freeboard (if required) = <u>✓</u></p>	<p>Deduction for Fresh Water.</p> <p>Displacement in salt water at summer load water line $\Delta = \frac{7783}{1.025} = 7790$</p> <p>Tons per inch immersion at summer load water line $T = \frac{32.26}{40} = 6.03$</p> <p>Deduction = $\frac{\Delta}{40T}$ inches = <u>6"</u></p>	<p>TABULAR FREEBOARD corrected for Flush Deck (if required)</p> <p>Correction for coefficient $\frac{786 + 68}{1.36} = \frac{1.466}{1.36}$</p> <table border="1"> <tr> <th></th> <th>+</th> <th>-</th> </tr> <tr> <td>Depth Correction ...</td> <td><u>26.02</u></td> <td>-</td> </tr> <tr> <td>Deduction for superstructures ...</td> <td>-</td> <td><u>2.60</u></td> </tr> <tr> <td>Sheer correction ...</td> <td>-</td> <td><u>0.16</u></td> </tr> <tr> <td>Round of Beam correction ...</td> <td>-</td> <td><u>61</u></td> </tr> <tr> <td>Correction for Thickness of Deck amidships ...</td> <td>-</td> <td><u>44.86</u></td> </tr> <tr> <td>Other corrections, scantlings, etc. ...</td> <td>-</td> <td><u>70.88</u></td> </tr> <tr> <td>Summer Freeboard =</td> <td><u>126.00</u></td> <td><u>125.15</u></td> </tr> </table>		+	-	Depth Correction ...	<u>26.02</u>	-	Deduction for superstructures ...	-	<u>2.60</u>	Sheer correction ...	-	<u>0.16</u>	Round of Beam correction ...	-	<u>61</u>	Correction for Thickness of Deck amidships ...	-	<u>44.86</u>	Other corrections, scantlings, etc. ...	-	<u>70.88</u>	Summer Freeboard =	<u>126.00</u>	<u>125.15</u>
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SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck:

Tropical Fresh Water Line above Centre of Disc ...	<u>11 1/2"</u>	Tropical Fresh Water Freeboard ...	<u>10'-8" 5 3/4"</u>
Fresh Water Line " " ...	<u>6"</u>	Fresh Water " " ...	<u>9'-6" 1/4"</u>
Tropical Line " " ...	<u>5 1/2"</u>	Tropical " " ...	<u>10'-0" 9-11 3/4"</u>
Winter Line below " " ...	<u>5 1/2"</u>	Winter " " ...	<u>10'-0" 1/4"</u>
Winter North Atlantic Line " " ...	<u>✓</u>	Winter North Atlantic " " ...	<u>10'-11 1/4"</u>

3 MAY 1935

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PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway	N°1	N°2	N°3	BUNKER HATCH	N°4	N°5	ANCHOR HATCHES UNDER BEAM		
Dimensions of Hatchway	22'6" x 20'0"	26'4" x 20'0"	10'0" x 18'0"	7'3" x 18'0"	26'4" x 20'0"	24'2" x 20'0"	6'2" x 3'2"		
COAMINGS	Height above Deck	3'0"	3'0"	3'0"	3'0"	3'0"	3'0"		
	Thickness	5'0"	5'0"	5'0"	5'0"	5'0"	5'0"		
	Sides	HH	HH	HH	HH	HH	HH		
	Stiffeners	7'3" x 3'3"	7'3" x 3'3"	7'3" x 3'3"	7'3" x 3'3"	7'3" x 3'3"	7'3" x 3'3"		
HATCH BEAMS	Brackets, Stays	3'1/2" x 3'1/2" x HH	2	2	2	2	2		
	Number	4	4	1	4	4	1		
	Spacing	4'6"	4'3"	5'0"	3'7 1/2"	4'3"	4'0 1/2"		
	Scantling and Sketch	16' x 36'	16' x 36'	16' x 36'	16' x 36'	16' x 36'	16' x 36'		
FORE AND AFTERS	Bearing Surface	3'1/2"	3'1/2"	3'1/2"	3'1/2"	3'1/2"	3'1/2"		
	Number								
	Spacing								
	Unsupported Lengths								
HATCH COVERS	Material			WOOD			WOOD		
	Thickness			2 1/2"			2 1/2"		
	How fitted			5'11 1/2"			5'11 1/2"		
	Bearing Surface			3"			3"		
Spacing of Cleats	20"	20"	20"	20"	20"	20"	20"		
Number of Tarpaulins	3	3	3	2	3	3	2		

*Are wood fore and afters steel shod at all bearing surfaces?
 Are battens and wedges efficient and in good condition?
 Are tarpaulins in good condition and in accordance with rule requirements?
 Are lashings provided in accordance with rule requirements?

YES.
 YES.
 YES.

Particulars of fiddle, funnel and ventilator coamings:— on casing on foreward deck.
 Engine casing fitted with efficient steel skylights.
 Fiddle gratings fitted with hinged steel covers permanently attached.
 Funnel casing carried full height of funnel.
 Machinery space ventilators well supported and passing inside of casing.

Particulars of Flush Bunker Scuttles:—

None.

Particulars of Companionways:—

None.

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

Hold ventilators 23" and 16" diameter, coverings 36 inches in height, efficiently riveted to the deck plating and fitted with wood plugs and canvas covers.
 Fore deck:— 2-23" dia. 10-16" dia. Amidships:— 2-23" dia. 2-16" dia. After deck:— 2-23" dia. and 8-16" dia.

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks:— all screw neck type, cast iron, ribbed.

on Forecastle:— 1-4" dia. height to opening 20". 1-2 1/2" dia. height to opening 24".
 Fore deck:— 1 each side, 3 1/2" dia. Height to opening 22".
 amidships:— 1 each side, 3 1/2" dia. Height to opening 22".
 aft:— 1-3 1/2" dia. Height to opening 23".
 all fitted with canvas covers.

Particulars of Gangway Cargo and Coaling Ports:— one each side between frames N° 89 and 91.
 opening 6'0" by 3'10 1/2". Frame on shell plating, angle 4 1/2" x 4 1/2" x 5'6".
 Door hinged, .44" thick with angle frame 3 1/2" x 3 1/2" x 5'0". secured by 2 strongbacks
 4" x 1 1/2" mild steel, with screw fastenings.
 Doubling plate over opening .60 inches thick.

Arkaba

29 APR 1935

Particulars of Scuppers and Sanitary Discharge Pipes:—

Sanitary discharges each fitted with one bronze automatic storm valve.
 Scuppers fitted with four bends.
 No scuppers or sanitary discharges from spaces below the foreward deck.

Particulars of Side Scuttles:—

4 each side in forecastle. 10 each side in poop.
 all 10 inch diameter with bronze frames and hinged steel dead lights.
 Side scuttles in poop are below the foreward deck — vertical distance of the sill of the lowest side scuttle is 12 1/2 inches above the top of the foreward deck at side amidships.

Particulars of Guard Rails:—

on Forecastle:— 4 bar rails 3'10 1/2" in height.
 on Foreward Deck:— 4 bar rails and bulwarks as shown on sketch.
 3'9" in height.

Particulars of Gangways, Lifelines, etc.:—

Flush deck ship with forecastle and gun bridge.

Particulars of Freeing Arrangements.

	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
Fore Well Amidships	43'6"	3'9"	3'6" x 1'8"	3	17.43 sq ft	5.5 sq ft
Forward Well						

State position of each freeing port ... (F. and A. position and height above deck edge) ...
 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								
Raised Quarter Deck Bulkhead								
Bridge, After Bulkhead	38"	30"	6 3/4" x 3/4" x 32"	30"	NONE	3'0" x 7'6"	NONE	7'6"
Bridge, Forward Bulkhead	38"	30"	6 3/4" x 3/4" x 32" ultimately 24"		NONE	3'0" x 7'6"	NONE	7'6"
Forecastle Bulkhead	38"	30"	6 3/4" x 3/4" x 32"	32"	NONE	3'4" x 4'1"	12"	7'6"
Trunk, Aft								
Trunk, Forward								
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	38"	32"	6 3/4" x 3/4" x 32"	30"	BRACKETED AT TOP CONTINUOUS BEAM	3'6" x 2'0"	14"	7'6"
Exposed Machinery Casings on Superstructure Decks								
Machinery Casings within Superstructures not fitted with Class I Closing Appliances								
Deckhouses on Flush Deck Ships	38"	30"	6 3/4" x 3/4" x 32"	36"	NONE	3'4" x 2'0"	14"	7'6"

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

Poop Bulkhead	
Raised Quarter Deck Bulkhead	
Bridge, After Bulkhead	before passage.
Bridge, Forward Bulkhead	
Forecastle Bulkhead	before to forecastle. Hinged wood and steel doors to houses under forecastle.
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	Hinged steel doors. Can be manipulated 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	Hinged wood doors. Can be manipulated from both sides.

CREW

CARGO

CARGO

CARGO

GUN

STAGE

STAGE

AST. PEAK TANK

N°3 HULL

N°4 HULL

ENGINES AND BOATERS

BUNKER

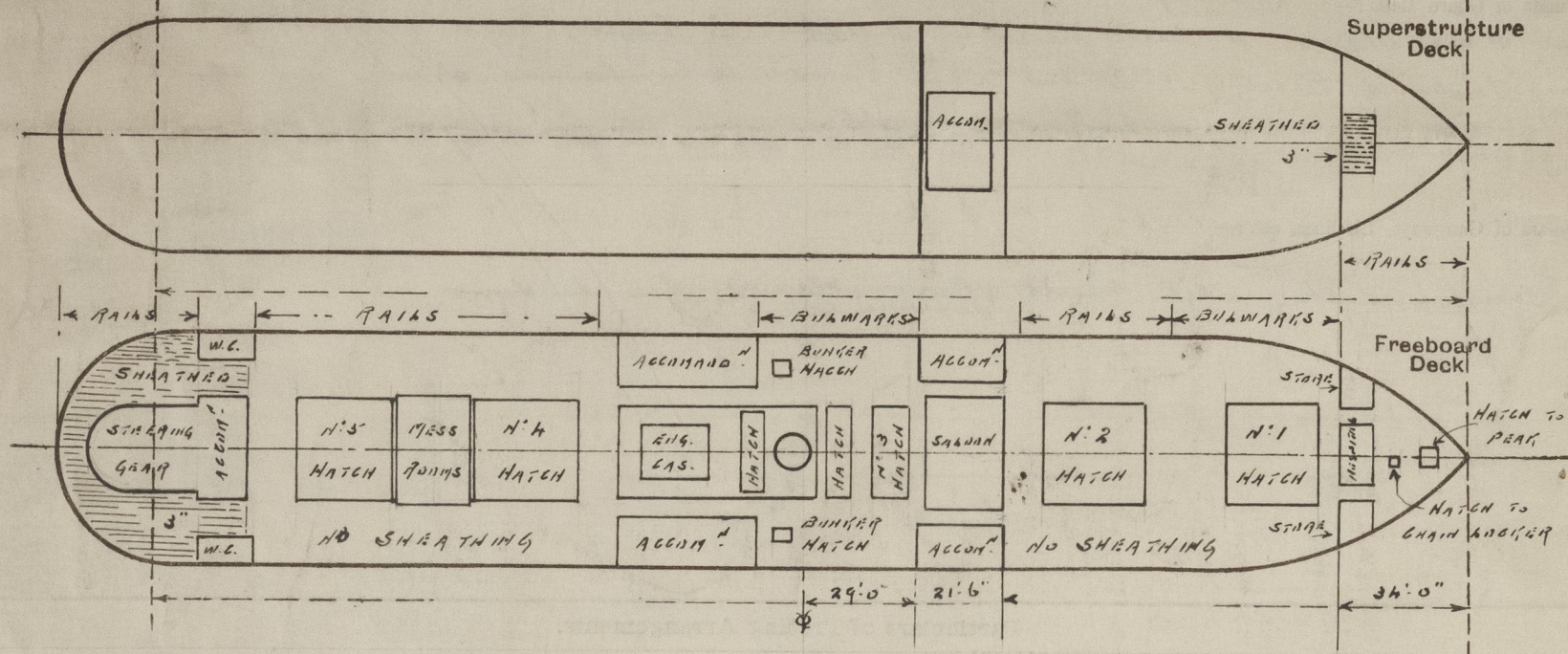
N°3 HULL

N°2 HULL

N°1 HULL

TUG PEAK TANK

DOUBLE BOTTOM TANKS



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

DEPTH	DISPLACEMENT	TONS REEF INCH.
21' 0"	7520	32.05
22' 0"	7710	32.24
24' 5 1/4"	8650	32.50

Bunker Hatch on top of Machinery Casing. - 5'-5" x 17'-6". 9" built angle
examining. 2 1/2" wood covers, 3" bearing surface. Fitted with cleats, buttons,
and 2 latches.

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Names of sister ships

Owners. The Adelaide Steamship Co. Ltd.

Tee £ : :

Received by me