

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

-3 SEP 1941

Computation of Freeboard for Steamer, Sailing Ship, Tanker

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

Port of Survey Sydney N.S.W.

Date of Survey 17/1/41 and 3/2/41

Name of Surveyor E. L. Cartwright

Particulars of Classification Class Contemplated

Ship's Name <u>S.S. "MAIWARA"</u>	Nationality and Port of Registry <u>British</u>	Official Number <u>14945</u>	Gross Tonnage <u>666</u>	Date of Build <u>1924</u>
--------------------------------------	----------------------------------------------------	---------------------------------	-----------------------------	------------------------------

Moulded Dimensions: Length 178.50 Breadth 28'-10 1/2" Depth 13'-4 1/2"

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

Coefficient of fineness for use with Tables .805 estimated

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth ... <u>13.38</u>	(a) Where D is greater than Table depth (D - Table depth) R = <u>(13.48 - 11.90) 1.58</u>	Moulded Breadth (B) <u>28.87</u>
Stringer plate ... <u>3/8</u>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = <u>1.58</u>	Standard Round of Beam = $\frac{B \times 12}{50} = \underline{6.93}$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) = \frac{1/2 \times 52.0}{178.5} = \underline{.07}$	If restricted by superstructures	Ship's Round of Beam = <u>6.89</u>
Depth for Freeboard (D) = <u>13.48</u>		Difference = <u>.04</u>
		Restricted to
		Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.04}{4} \times .3143 = \underline{\text{Nil.}}$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed ...	<u>11'-0"</u>	<u>11.00</u>	<u>7'-3"</u>	✓	<u>11.00</u>	Standard Height of Superstructure <u>6.00'</u>
" overhang ...	<u>39'-0"</u>	<u>39.00</u>	<u>4'-0"</u>	✓	<u>39.00</u>	" " R.Q.D. <u>3.514</u>
R.Q.D. enclosed ...	<u>46'-0"</u>	<u>45.13</u>	<u>4'-3"</u>	✓	<u>45.13</u>	Deduction for complete superstructure <u>23.85"</u>
" overhang ...	<u>25'-0"</u>	<u>25.50</u>	<u>4'-3"</u>	✓	<u>25.50</u>	Percentage covered $\frac{S}{L} = \underline{68.06}$
Bridge enclosed ...	<u>25'-0"</u>	<u>25.50</u>	<u>4'-3"</u>	✓	<u>25.50</u>	" " $\frac{S_1}{L} = \underline{67.57}$
" overhang aft ...	<u>25'-0"</u>	<u>25.50</u>	<u>4'-3"</u>	✓	<u>25.50</u>	" " $\frac{E}{L} = \underline{67.57}$
" overhang forward ...	<u>25'-0"</u>	<u>25.50</u>	<u>4'-3"</u>	✓	<u>25.50</u>	Percentage from Table, Line A.
Fore enclosed ...	<u>25'-0"</u>	<u>25.50</u>	<u>4'-3"</u>	✓	<u>25.50</u>	(corrected for absence of fore-castle (if required))
" overhang ...	<u>25'-0"</u>	<u>25.50</u>	<u>4'-3"</u>	✓	<u>25.50</u>	Percentage from Table, Line B.
Trunk aft ...	<u>25'-0"</u>	<u>25.50</u>	<u>4'-3"</u>	✓	<u>25.50</u>	(corrected for absence of fore-castle (if required))
" forward ...	<u>25'-0"</u>	<u>25.50</u>	<u>4'-3"</u>	✓	<u>25.50</u>	Interpolation for bridge less than 2L (if required)
Tonnage opening aft ...	<u>25'-0"</u>	<u>25.50</u>	<u>4'-3"</u>	✓	<u>25.50</u>	Deduction = <u>23.85</u> × <u>.5889</u> = <u>14.04"</u>
" forward ...	<u>25'-0"</u>	<u>25.50</u>	<u>4'-3"</u>	✓	<u>25.50</u>	
Total ...	<u>121.50'</u>	<u>120.63</u>			<u>120.63</u>	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P. ...	<u>27.85</u>	1		<u>27.85</u>	<u>19.49</u>	<u>19.49</u>	1		<u>19.49</u>	Mean actual sheer aft = <u>< .5</u>
1/4 L from A.P. ...	<u>12.39</u>	4		<u>49.56</u>	<u>-1.00</u>	<u>-1.00</u>	4		<u>-4.00</u>	Mean actual sheer forward = <u>Deficient</u>
1/2 L " ...	<u>3.06</u>	2		<u>6.12</u>	<u>-2.25</u>	<u>-2.25</u>	2		<u>-4.50</u>	Mean standard sheer forward = <u>Deficient</u>
Amidships ...	<u>-</u>	4		<u>-</u>	<u>-</u>	<u>-</u>	4		<u>-</u>	Length of enclosed superstructure forward of amidships = <u>Defic. sheer.</u>
3/4 L from F.P. ...	<u>6.13</u>	2		<u>12.26</u>	<u>5.00</u>	<u>5.00</u>	2		<u>10.00</u>	
1/4 L " ...	<u>24.79</u>	4		<u>99.16</u>	<u>17.00</u>	<u>17.00</u>	4		<u>68.00</u>	
F.P. ...	<u>55.70</u>	1		<u>55.70</u>	<u>63.58</u>	<u>63.58</u>	1		<u>63.58</u>	
Total ...				<u>250.65</u>		<u>152.57</u>			<u>152.57</u>	

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{98.08}{18} \left(.75 - \frac{.3403}{2 \times 120.63} \right) = \underline{+ 2.23"} \checkmark$

If limited on account of midship superstructure. ✓

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>13.41</u></p> <p>Summer freeboard = <u>.92</u></p> <p>Moulded draught (d) = <u>12.49</u></p> <p>Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <u>3.12 = 3"</u></p> <p>Addition for Winter North Atlantic Freeboard (if required) = <u>5"</u></p>	<p>Deduction for Fresh Water.</p> <p>Displacement in salt water at summer load water line</p> <p>$\Delta =$</p> <p>Tons per inch immersion at summer load water line</p> <p>T =</p> <p>Deduction = $\frac{\Delta}{40 T}$ inches</p> <p>$\frac{d}{4} = \underline{3.12}$</p> <p>$\frac{d}{4} = \underline{3"} \checkmark$</p>	<p>TABULAR FREEBOARD corrected for Flush Deck (if required)</p> <p>Correction for coefficient <u>.805 + .68 = 1.485 / 1.36</u></p> <table border="1"> <tr> <th></th> <th>+</th> <th>-</th> </tr> <tr> <td>Depth Correction ...</td> <td><u>2.17</u></td> <td><u>-</u></td> </tr> <tr> <td>Deduction for superstructures ...</td> <td><u>-</u></td> <td><u>14.04</u></td> </tr> <tr> <td>Sheer correction ...</td> <td><u>2.23</u></td> <td><u>-</u></td> </tr> <tr> <td>Round of Beam correction ...</td> <td><u>-</u></td> <td><u>-</u></td> </tr> <tr> <td>Correction for Thickness of Deck amidships ...</td> <td><u>-</u></td> <td><u>.84</u></td> </tr> <tr> <td>Other corrections, scantlings, etc. ...</td> <td><u>-</u></td> <td><u>-</u></td> </tr> <tr> <td></td> <td><u>4.40</u></td> <td><u>14.88</u></td> </tr> <tr> <td></td> <td></td> <td><u>-10.48</u></td> </tr> <tr> <td></td> <td></td> <td><u>Summer Freeboard = 10.90</u></td> </tr> </table>		+	-	Depth Correction ...	<u>2.17</u>	<u>-</u>	Deduction for superstructures ...	<u>-</u>	<u>14.04</u>	Sheer correction ...	<u>2.23</u>	<u>-</u>	Round of Beam correction ...	<u>-</u>	<u>-</u>	Correction for Thickness of Deck amidships ...	<u>-</u>	<u>.84</u>	Other corrections, scantlings, etc. ...	<u>-</u>	<u>-</u>		<u>4.40</u>	<u>14.88</u>			<u>-10.48</u>			<u>Summer Freeboard = 10.90</u>
	+	-																														
Depth Correction ...	<u>2.17</u>	<u>-</u>																														
Deduction for superstructures ...	<u>-</u>	<u>14.04</u>																														
Sheer correction ...	<u>2.23</u>	<u>-</u>																														
Round of Beam correction ...	<u>-</u>	<u>-</u>																														
Correction for Thickness of Deck amidships ...	<u>-</u>	<u>.84</u>																														
Other corrections, scantlings, etc. ...	<u>-</u>	<u>-</u>																														
	<u>4.40</u>	<u>14.88</u>																														
		<u>-10.48</u>																														
		<u>Summer Freeboard = 10.90</u>																														

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

Tropical Fresh Water Line above Centre of Disc ...	<u>6"</u>
Fresh Water Line " " ...	<u>3"</u>
Tropical Line " " ...	<u>3"</u>
Winter Line below " " ...	<u>3"</u>
Winter North Atlantic Line " " ...	<u>5"</u>

Tropical Fresh Water Freeboard ...	<u>0'-11"</u>
Fresh Water " " ...	<u>0'-5"</u>
Tropical " " ...	<u>0'-8"</u>
Winter " " ...	<u>0'-8"</u>
Winter North Atlantic " " ...	<u>1'-2"</u>
	<u>1'-4"</u>

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECK									
Description of Hatchway	...	...	...	...	...	...	...	...	...
Dimensions of Hatchway	...	...	...	...	...	...	...	...	...
COAMINGS	...	...	...	...	...	...	...	...	...
HATCH BEAMS	...	...	...	...	...	...	...	...	...
FORE AND AFTERS	...	...	...	...	...	...	...	...	...
HATCH COVERS	...	...	...	...	...	...	...	...	...
Spacing of Cleats	...	...	...	...	...	...	...	...	...
Number of Tarpaulins	...	...	...	...	...	...	...	...	...

Particulars of fiddle, funnel and ventilator coamings:—
 Engine room skylights of steel, with hinged steel covers. ✓
 Fiddle gratings fitted with efficient hinged steel storm covers. ✓
 Funnel fitted with air casing full height of funnel. ✓
 Machinery space ventilation of efficient construction, passing inside of casing ✓

Particulars of Flush Bunker Scuttles:—
 On main deck, enclosed in bridge space:— One port and one starboard sides, flush bunker. ✓
 Scuttles of cast iron, strongly constructed, with bayonet fastenings. ✓
 Chain attach. ✓

Particulars of Companionways:—
 At forward end of poop deck, midline, 24" x 62" opening, of strong steel construction, leading to crew quarters. Height of sill 15" (poop bulkhead). Fitted with strong hinged steel door with cleat fastening, operated from both sides. ✓

Particulars of Ventilators in exposed positions on freeboard and superstructure decks:—
 Forecastle Deck:— Three, 6 1/2" diam. 36" coaming. One 19" diam. 32" coaming. ✓
 Forward well:— One, 12" diam. 9' 0" coaming, secured to forecastle bulkhead. One, 13" diam. 10' 0" coaming. ✓
 Raised Quarter Deck:— One, 15" diam. 36" coaming. One 16" diam. 36" coaming. One, 8" diam. 15" coaming. ✓
 Poop Deck:— One, 6" diam. 10" coaming. ✓
 wood plating & canvas cover fastening. ✓
 appliances ✓

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks:—
 Forecastle Deck:— Four, 6 x 2 1/2" opening, height to opening 11". One, 2" diam. 16" to opening. ✓
 Forward well:— One, 1 1/2" diam. 24" to opening. Sub, 1 1/2" diam. 30" to opening on port side, and one, 1 1/2" diam. 24" to opening. ✓
 Bridge deck:— Three, 4 x 4" opening, 15" from deck. One, 1 1/2" diam. 2' 9" to opening. ✓
 After well R.Q.D.:— Two, 1 1/2" diam. 31" to opening. ✓
 Poop Deck:— One, 2" diam. 9" to opening. All of steel, Swan neck type. Canvas covers for temporary closing appliances supplied. ✓

Particulars of Gangway Cargo and Coaling Ports:—

← NONE →

Particulars of Scuppers and Sanitary Discharge Pipes —

Sanitary discharges each fitted with one cast iron automatic storm valve. ✓
 No scuppers or sanitary discharges from spaces below the freeboard deck. ✓
 No scuppers in bridge space led to bilges. ✓

Particulars of Side Scuttles:—

In Forecastle:— 5 port side, and 5 starboard side, 12" diameter, each fitted with deadlight. ✓
 In Bridge:— 5 port side, and 4 starboard side, 10 1/2" diameter, each fitted with deadlight. ✓
 In Poop:— 1 port side, and 3 starboard side, 11" diameter, each fitted with deadlight. ✓
 1 on starboard side of poop bulkhead, 13" diameter, no deadlight fitted. ✓

Particulars of Guard Rails:—

On Forecastle Deck:— 3 bar open rails, 40" in height. ✓
 In Forward Well:— Bulwarks, 42" in height, with 6" x 3/8" B.P. stanchions, spaced 6' apart. ✓
 On Bridge Deck:— 3 bar open rails, 40" in height. ✓
 In After Well:— Bulwarks, 42" in height, with 6" x 3/8" B.P. stanchions, spaced 6' apart. ✓
 On Poop Deck:— 3 bar open rails, 40" in height. ✓

Particulars of Gangways, Lifelines, etc.:—

No gangways. ✓
 Crew lashed forward. Efficient 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	39' 0" ✓	42"	2 --- 26" x 19" 1 --- 24" x 19"	3	10.4 \$	10.4 \$
Forward Well	57' 0" ✓	42"	4 --- 26" x 19"	4	13.6 \$	12.2 \$

State position of each freeing port. ... After Well:— F 7' 3" x 2' 1 1/2" 9' 6" x 2' 1 1/2" 11' 10" x 2' 3" 3' 10" x 2' 3" 4' 4" x 2' 3" A
 (F. and A. position and height above deck edge) Forward Well:— F 4' 2" x 2' 2" 7' 2" x 2' 2" 8' 2" x 2' 2" 18' 9" x 2' 2" A
 State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— Height above deck 8" aft, 6" forward. Fitted with four vertical bars

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	31"	25"	5" x 2 1/2" x 32 3/4"	30"	3" x 3" x 32 3/4" at top.	COMPANIONWAY 62" x 24"	15" ✓	above R.Q.D. 39"
Raised Quarter Deck Bulkhead	31"	25"	3 1/2" x 2 1/2" x 32"	29.5"	2 Flanged Brackets Top & Bottom	NONE	✓	48"
Bridge, After Bulkhead	31"	25"	3 1/2" x 2 1/2" x 31"	29.5"	BRACKETS TOP & BOTTOM	44" x 36"	25"	7' 3"
Bridge, Forward Bulkhead	31"	31"	6" x 3" x 37"	27"	NONE	56" x 22"	18"	7' 3"
Forecastle Bulkhead	25"	25"	3 1/2" x 2 1/2" x 31"	30"	NONE	56" x 22"	18"	7' 3"
Trunk, Aft	31"	25"	3" x 2" x 31"	24"	NONE	64" x 22"	11"	7' 0"
Trunk, Forward	31"	25"	3" x 2" x 31"	24"	NONE	64" x 22"	11"	7' 0"
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	31"	25"	3" x 2" x 31"	24"	NONE	64" x 22"	11"	7' 0"
Exposed Machinery Casings on Superstructure Decks	31"	25"	3" x 2" x 31"	24"	NONE	64" x 22"	11"	7' 0"
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	31"	25"	3" x 2" x 31"	24"	NONE	64" x 22"	11"	7' 0"
Deckhouses on Flush Deck Ships	31"	25"	3" x 2" x 31"	24"	NONE	64" x 22"	11"	7' 0"

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

Poop Bulkhead	Flanged steel door, hinged, with cleat fastening, operated from both sides. ✓
Raised Quarter Deck Bulkhead	No openings. ✓
Bridge, After Bulkhead	No openings. ✓
Bridge, Forward Bulkhead	No openings. ✓
Forecastle Bulkhead	Storm boards in riveted channels, full height of openings. ✓
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	1 3/4" hinged teak wood doors, operated from both sides. ✓
Exposed Machinery Casings on Superstructure Decks	1 3/4" hinged, flanged steel doors, operated from both sides. ✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	No openings. ✓
Deckhouses on Flush Deck Ships	No openings. ✓

Hand-drawn plan view of the ship 'H.M.S. Fish Hawk' showing the Superstructure Deck and Freeboard Deck. The plan includes various compartments such as cargo holds, engine spaces, bunks, and crew quarters, along with dimensions and structural details like double bottom tanks and chain lockers.

Superstructure Deck:

- Stores
- After Peak Tank
- No 2 Cargo Hold
- Eng. & Boiler Space
- No 1 Cargo Hold
- Store
- Chain Locker
- Fore Peak Tank
- D.B. Tank
- Double Bottom Tanks
- Steering Eng. House
- 26'-0"
- Acc. Spaces
- Stokehold & Galley Casing
- Superstructure Deck

Freeboard Deck:

- Bunkers
- Bunkers
- Donkey Boiler
- Crews Acc. Space
- Poop Raised Quarter Deck
- Bridge
- Forecastle
- 11'-0"
- 39'-0"
- 46'-0"
- 56'-4"
- 25'-6"

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

On Butte Deck: - To stowaways to bunkers, one port, and one Starboard side, 5'-6" x 4'-2" openings, with coamings 1'-5" in height, and flanged & stiffened corners of steel, secured by plates, using nuts, and screws.

Am Bridge Deck: - Medline, after side of funnel, trunked hatch to gunners, secured to top of deckhouse at after side & fitted with $2\frac{1}{2} \times 2\frac{1}{2} \times 31$ stiffeners, with opening in bridge deck $7'-11" \times 1'-10"$ and at top of trunk $7'-11" \times 4'-6"$. 3" wood covers, with cleats, battens, and tarpaulins. Hatch rests 3".

Poon 11.00
 R.Q.D. 39.00
 Porridge 46.00

$$\frac{96.00}{178.5} = .5378$$

$$-.5000$$

$$.0378 \times 10 = 1.84$$

$$\frac{.2}{98.11}$$

Names of sister ships

Owners Sulco Pty. Ltd.

Fee £ 10 : 0 : 0

Received by me.