

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

-2 DEC 1933

Computation of Freeboard for ~~Steamer, Sailing Ship, Tanker~~ *motor vessel*
having *Complete superstructure with one tonnage opening aft*

Port of Survey *Odense*

Date of Survey *November 1933*

Name of Surveyor *S. Sanderson*

Particulars of Classification *800 A 1 with freeboard class exemplified*

(Type of Superstructures.)

Ship's Name "TARONGA"	Nationality and Port of Registry <i>Norwegian Oslo</i>	Official Number <i>-</i>	Gross Tonnage <i>58</i>	Date of Build <i>under construction</i>
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Moulded Dimensions: Length *470'-0"* Breadth *61'-0"* Depth *31'-7"*
Moulded displacement at moulded draught = 85 per cent. of moulded depth *ab. 15,480* tons
Coefficient of fineness for use with Tables *.704*

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth ... <i>31'-7"</i>	(a) Where D is greater than Table depth (D - Table depth) R = $(31.61 - 31.33) \times 3.00 = +.84"$	Moulded Breadth (B) <i>61'-0"</i>
Stringer plate ... <i>10.52</i>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = \checkmark	Standard Round of Beam = $\frac{B \times 12}{50} = 14.64"$
Sheathing on exposed deck <i>no sheathing</i> $T \left(\frac{L-S}{L} \right) = \checkmark$	If restricted by superstructures \checkmark	Ship's Round of Beam = $375'2" = 14.76"$
Depth for Freeboard (D) = <i>31.61</i>		Difference <i>.12</i>
		Restricted to
		Correction = $\frac{\text{Diff}^2}{4} \times \left(1 - \frac{S_1}{L}\right) = \frac{.12^2}{4} \times .0048 = \text{Neg.}$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed ...	<i>42.45</i>	<i>42.45</i>	<i>2</i>	<i>3.448</i>	<i>42.45</i>	Standard Height of Superstructure <i>7.5'</i>
" overhang ...	<i>.64</i>	<i>.32</i>	<i>11.33</i>		<i>.32</i>	" " R.Q.D. \checkmark
R.Q.D. enclosed ...						Deduction for complete superstructure <i>42</i>
" overhang ...						Percentage covered $\frac{S}{L} = 100\%$
Bridge enclosed ...	<i>422.17</i>	<i>422.17</i>	<i>11.33</i>		<i>422.17</i>	" " $\frac{S_1}{L} = 99.522$
" overhang aft ...	<i>.64</i>	<i>.48</i>	<i>11.33</i>		<i>.48</i>	" " $\frac{E}{L} = 99.522$
" overhang forward ...	<i>128.673</i>	<i>422.17</i>	<i>3.448</i>			Percentage from Table, Line A. <i>99.40%</i>
F'cle enclosed ...	<i>422.17</i>					(corrected for absence of forecastle (if required))
" overhang ...	<i>.64</i>					Percentage from Table, Line B. \checkmark
Trunk aft ...						(corrected for absence of forecastle (if required))
" forward ...	<i>4.10</i>		<i>11.33</i>			Interpolation for bridge less than 2L (if required)
Tonnage opening aft ...	<i>1.640</i>	<i>2.29</i>	<i>3.448</i>		<i>2.29</i>	Deduction = $42 \times .994 = -41.75$
" " forward ...	<i>470.00</i>					
Total ...	<i>143.253</i>	<i>467.71</i>			<i>467.71</i>	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P. ...	<i>57.00</i>	<i>1</i>	<i>57.00</i>	<i>1.543</i>	<i>106.43</i>	<i>1</i>	<i>106.43</i>			Mean actual sheer aft = <i>Excess</i>
$\frac{1}{2}$ L from A.P. ...	<i>25.36</i>	<i>4</i>	<i>101.44</i>	<i>6.60</i>	<i>47.36</i>	<i>4</i>	<i>189.44</i>			Mean actual sheer forward = <i>Excess</i>
$\frac{2}{3}$ L " ...	<i>6.27</i>	<i>2</i>	<i>12.54</i>	<i>1.65</i>	<i>11.71</i>	<i>2</i>	<i>23.42</i>			Mean standard sheer aft = <i>Excess</i>
Amidships ...	<i>-</i>	<i>4</i>	<i>-</i>	<i>0</i>	<i>-</i>	<i>4</i>	<i>-</i>			Mean standard sheer forward = <i>Excess</i>
$\frac{2}{3}$ L from F.P. ...	<i>12.54</i>	<i>2</i>	<i>25.08</i>	<i>12.50</i>	<i>17.56</i>	<i>2</i>	<i>35.12</i>			Length of enclosed superstructure forward of amidships = <i>388</i>
$\frac{1}{2}$ L " ...	<i>50.72</i>	<i>4</i>	<i>202.88</i>	<i>50.12</i>	<i>71.03</i>	<i>4</i>	<i>284.12</i>			" " aft of " = <i>388</i>
F.P. ...	<i>114.00</i>	<i>1</i>	<i>114.00</i>	<i>113.62</i>	<i>159.62</i>	<i>1</i>	<i>159.62</i>			
Total ...	<i>512.94</i>		<i>512.94</i>	<i>46</i>	<i>798.15</i>		<i>798.15</i>			

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{285.21}{18} (.75 - .50) = -3.96$

If limited on account of midship superstructure. \checkmark

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

<p>Deduction for Tropical Freeboard.</p> <p>Addition for Winter and Winter North Atlantic Freeboard.</p> <p>Depth to Freeboard Deck = <i>31.61</i></p> <p>Summer freeboard = <i>4.17</i></p> <p>Moulded draught (d) = <i>27.44</i></p> <p>Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <i>6.86 = 6\frac{3}{4}</i></p> <p>Addition for Winter North Atlantic Freeboard (if required) =</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>$d\frac{1}{4} = 6\frac{3}{4}$</p>	<p>TABULAR FREEBOARD corrected for Flush Deck (if required)</p> <p>Correction for coefficient $\frac{.704 + .68}{1.36} = \frac{1.384}{1.36} = 1.018$</p> <table border="1"> <tr> <th></th> <th>+</th> <th>-</th> </tr> <tr> <td>Depth Correction ...</td> <td><i>.84</i></td> <td><i>-</i></td> </tr> <tr> <td>Deduction for superstructures ...</td> <td><i>-</i></td> <td><i>41.75</i></td> </tr> <tr> <td>Sheer correction ...</td> <td><i>-</i></td> <td><i>3.96</i></td> </tr> <tr> <td>Round of Beam correction ...</td> <td><i>-</i></td> <td><i>-</i></td> </tr> <tr> <td>Correction for Thickness of Deck amidships ...</td> <td><i>-</i></td> <td><i>-</i></td> </tr> <tr> <td>Other corrections, scantlings, etc. ...</td> <td><i>-</i></td> <td><i>-</i></td> </tr> <tr> <td></td> <td><i>.84</i></td> <td><i>45.71</i></td> </tr> </table> <p>Summer Freeboard = <i>50.07</i></p>		+	-	Depth Correction ...	<i>.84</i>	<i>-</i>	Deduction for superstructures ...	<i>-</i>	<i>41.75</i>	Sheer correction ...	<i>-</i>	<i>3.96</i>	Round of Beam correction ...	<i>-</i>	<i>-</i>	Correction for Thickness of Deck amidships ...	<i>-</i>	<i>-</i>	Other corrections, scantlings, etc. ...	<i>-</i>	<i>-</i>		<i>.84</i>	<i>45.71</i>
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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 ...	<i>13\frac{1}{2}"</i>	Tropical Fresh Water Freeboard ...	<i>4'-2"</i>
Fresh Water Line " " ...	<i>6\frac{3}{4}"</i>	Fresh Water " " ...	<i>3'-0\frac{1}{2}"</i>
Tropical Line " " ...	<i>6\frac{3}{4}"</i>	Tropical " " ...	<i>3'-7\frac{1}{4}"</i>
Winter Line below " " ...	<i>6\frac{3}{4}"</i>	Winter " " ...	<i>3'-7\frac{1}{4}"</i>
Winter North Atlantic Line " " ...	<i>..</i>	Winter North Atlantic " " ...	<i>42-8\frac{3}{4}</i>

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS										
upper deck					2nd deck					
Description of Hatchway	1	2	3	4	5	1	2	3	4	5
Dimensions of Hatchway	9590/5436	12300/5436	11480/5436	11480/5436	9590/5436	12300/6096	5740/6096	11480/6096	11480/6096	
COAMINGS	Height above Deck	915				230 x 90 = 11 E				
	Thickness Sides	11								
	Thickness Ends	11								
	Stiffeners	200 x 75 x 11 E								
	Brackets, Stays	150 x 75 x 9 E spaced at 3000								
HATCH BEAMS	Number	7	9	7		7	9	3	7	7
	Spacing	1200	1230	1435		1200	1230	1435		
	Scantling and Sketch	100 x 75 x 11 E				430 x 9	465 x 9	530 x 9.5		
	Bearing Surface	3 1/2"								
FORE AND AFTERS	Number									
	Spacing									
	Unsupported Lengths									
	Scantling and Sketch	name								
	Bearing Surface									
HATCH COVERS	Material	pine				pine				
	Thickness	2 1/2"				2 3/4"				
	How fitted	lugs				lugs				
	Bearing Surface	3"				3"				
Spacing of Cleats		24"				24"				
Number of Tarpaulins		3				1				
*Are wood fore and afters steel shod at all bearing surfaces? <i>none</i> Are battens and wedges efficient and in good condition? <i>yes</i> Are tarpaulins in good condition and in accordance with rule requirements? <i>yes</i> Are lashings provided in accordance with rule requirements? <i>yes</i>										

Particulars of fiddle, funnel and ventilator coamings:—

6 ventilators 1067 Z diam. with steel coamings riveted to casing top & fitted with steel ends.
 Motor room skylight made of steel with hinged steel flaps.
 Funnel coaming of 6 Z steel plate riveted to casing top.

Particulars of Flush Bunker Scuttles:—

none

Particulars of Companionways:—

none

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

all ventilators will be fitted with steel coamings riveted to decks and of height according to regulations.
 all all ventilators will be fitted with steel ends, wood plugs & canvas covers.

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

Fitted with run-ways made of steel pipes extending 500 Z above decks, also fitted with approved closing appliances.

Particulars of Gangway Cargo and Coaling Ports:—

none

Particulars of Scuppers and Sanitary Discharge Pipes:— 5 scuppers (4 1/2" diam.) fitted on each side on 2nd deck and leading overboard. the scuppers are made of cast steel and are fitted with metal storm valves.

Particulars of Side Scuttles:—

made of cast steel and fitted with strong hinged dead lugs made of steel.

Particulars of Guard Rails:—

Upper decks:— Bulwark made of 6.5 Z steel plates with bulwark railbar and stanchions on every 2nd beam of 150 x 75 x 10 Z bulwark.
 Poop-side decks:— Railings with 4 rails equally spaced and steel stanchions spaced about 4'-0".

Particulars of Gangways, Lifelines, etc.:—

lifelines to be fitted according to Rules.

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	1640 Z	3448 Z	760 x 760 Z	one		
Forward Well	—					
State position of each freeing port ... After Well:— 335 Z above deck (F. and A. position and height above deck edge) Forward Well:— State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— hinged steel shutters. Additional area where sheer is less than standard.						

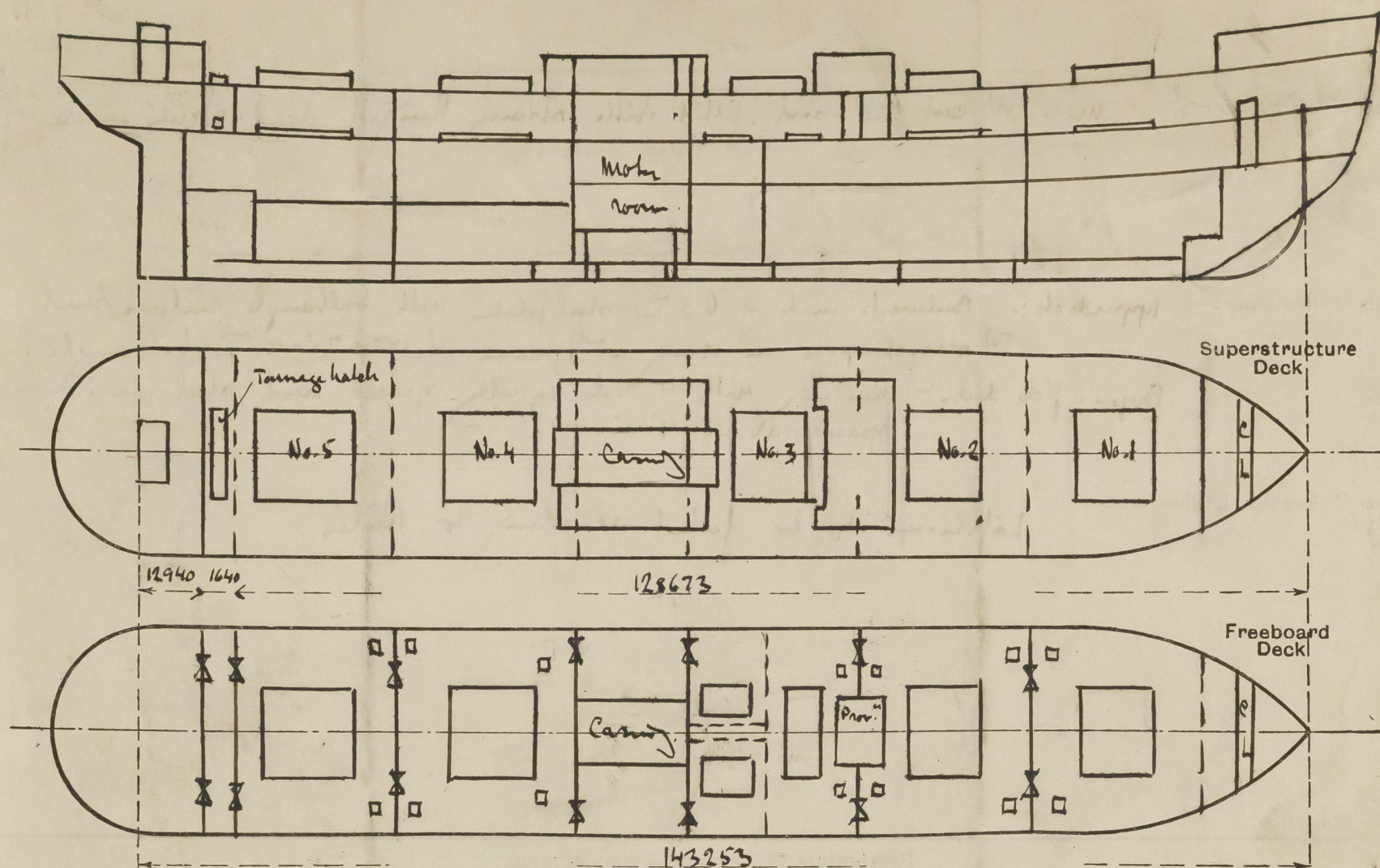
Particulars of Superstructures, Trunks, Casings, Deckhouses.

	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead	—	6.5 Z	130 x 65 x 7.5 E	710 Z	none	1222 Z full height 2 off	none	—
Raised Quarter Deck Bulkhead	—	—	—	—	—	—	—	—
Bridge, After Bulkhead	—	6.5 Z	do.	do.	do.	do.	do.	—
Bridge, Forward Bulkhead	7.5 Z	6.5 Z	180 x 75 x 10 E	610 Z	lugs	none	—	—
Forecastle Bulkhead	—	—	—	—	—	—	—	—
Trunk, Aft	—	—	—	—	—	—	—	—
Trunk, Forward	—	—	—	—	—	—	—	—
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	—	—	—	—	—	—	—	—
Exposed Machinery Casings on Superstructure Decks	none (protected by the deck house)	—	—	—	—	—	—	—
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	7.5 Z	6.5 Z	65 x 90 x 7.5 E	every frame	carried upwards & dammed by for the coaming plates	none	—	—
Deckhouses on Flush Deck Ships	—	—	—	—	—	—	—	—

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

Poop Bulkhead	3 1/4"	60 Z	storm boards made of 140 x 60 x 60 x 7 x 10 Z in riveted channels for the full height.				
Raised Quarter Deck Bulkhead	—	—	—				
Bridge, After Bulkhead	do.	do.	do.	do.	do.	do.	do.
Bridge, Forward Bulkhead	—	—	—				
Forecastle Bulkhead	—	—	—				
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	—	—	—				
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:—



Trunk hatch in poops :- 2440 x 5436 to be fitted with hatch covers, tarpaulins etc. (not constructed up to the present) ✓

Tonnage hatch in upper decks :- 1250 x 5436 Z with coaming made of 9" bull angle ✓ and fitted with efficient temporary closing appliances ✓

Trimming hatches in 2nd deck :- 610 x 610 Z with 230 Z ✓ coamings, grating and 65 Z ✓ wood covers.

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

also hatches fitted with tarpaulins and efficient battening down arrangements ✓

The tonnage opening in the 2nd deck bulkheads are all of the same size as the openings in the poops part bulkhead and have the same closing appliances. ✓

Builder's name and yard number

Mess. Odense Staalskibsværft Yard No. 50.

Names of sister ships

Owners

Mess. Wille. Wilhelmsen, Oslo.

Fee £

Received by me



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