

No 8805.  
Lloyd's Register of Shipping.  
SURVEYS FOR FREEBOARD.1 JUN 1932  
Index. No. 31457  
(For London Office only.)

Computation of Freeboard for Steamer, Sailing Ship, Tanker					Port of Survey <u>Gothenburg.</u>	
having <u>Pop. Bridge &amp; Forecastle.</u>					Date of Survey <u>30<sup>th</sup> &amp; 31<sup>st</sup> May 1932.</u>	
(Type of Superstructures.) <u>ORION</u>					Name of Surveyor <u>H. J. H. Lyden.</u>	
Ship's Name <u>WILLIAM</u>		Nationality and Port of Registry <u>Swedish. Trelleborg.</u>	Official Number <u>7255</u>	Gross Tonnage <u>2016</u>	Date of Build <u>1924-10</u>	
Moulded Dimensions: Length <u>278.58</u> Breadth <u>40</u> Depth <u>20.7 1/2</u> <u>20.62</u>					Particulars of Classification <u>100. A. 1.</u>	
Moulded displacement at moulded draught = 85 per cent. of moulded depth <u>4392.</u> tons						
Coefficient of fineness for use with Tables <u>.787.</u>						

Depth for Freeboard (D)		Depth correction		Round of Beam correction	
Moulded depth	... 20.62	(a) Where D is greater than Table depth (D-Table depth) R = <u>20.62-18.58</u> <u>2.143</u>		Moulded Breadth (B)	<u>40</u>
Stringer plate	... .05	<u>2.09 x 2.143 = 4.48</u>		Standard Round of Beam = $\frac{B \times 12}{50}$	<u>9.6</u>
Sheathing on exposed deck	$T \left( \frac{L-S}{L} \right) =$	(b) Where D is less than Table depth (if allowed) (Table depth-D) R =		Ship's Round of Beam	<u>10.4</u>
Depth for Freeboard (D) =	<u>20.67</u>	If restricted by superstructures		Difference	<u>.4</u>
				Restricted to	
				Correction = $\frac{\text{Diff}}{4} \times \left( 1 - \frac{S_1}{L} \right)$	<u>.4</u> <u>(1-39.14)</u> <u>-.06</u>

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)	
Poop enclosed ...	<u>21.33</u>	<u>21.33</u>	<u>7'</u>		<u>21.33</u>	Standard Height of Superstructure <u>6.286</u>
" overhang ...	<u>None</u>					" " R.Q.D. <u>✓</u>
R.Q.D. enclosed ...	<u>✓</u>					Deduction for complete superstructure <u>33.859</u>
" overhang ...	<u>✓</u>					Percentage covered $\frac{S}{L} =$ <u>39.86</u>
Bridge enclosed...	<u>58.52</u>	<u>58.52</u>	<u>7'</u>		<u>58.52</u>	" " $\frac{S_1}{L} =$ <u>39.14</u>
" overhang aft ...	<u>4.02</u>	<u>3.01</u>			<u>3.01</u>	" " $\frac{E}{L} =$ <u>39.14</u>
" overhang forward	<u>1.96</u>	<u>.98</u>			<u>.98</u>	Percentage from Table, Line A.
Fore enclosed ...	<u>24.71</u>	<u>24.71</u>	<u>7'6"</u>		<u>24.71</u>	(corrected for absence of forecastle (if required))
" overhang ...	<u>.48</u>	<u>.48</u>			<u>.48</u>	Percentage from Table, Line B.
Trunk aft ...	<u>✓</u>					(corrected for absence of forecastle (if required))
" forward ...	<u>✓</u>					Interpolation for bridge less than 2L (if required) <u>.21</u>
Tonnage opening aft ...	<u>✓</u>					Deduction = <u>-9.06</u>
" " forward	<u>✓</u>					
Total ...	<u>111.02</u>	<u>109.03</u>			<u>109.03</u>	

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P. ...	<u>37.86</u>	1		<u>37.86</u>	<u>38.00</u>	<u>38.00</u>	1		<u>38.00</u>	Mean actual sheer aft = <u>Deficient</u>
1/4 L from A.P. ...	<u>16.85</u>	4		<u>67.40</u>	<u>16.39</u>	<u>16.39</u>	4		<u>65.56</u>	Mean actual sheer forward = <u>Deficient 98.952</u>
3/8 L " ...	<u>4.16</u>	2		<u>8.34</u>	<u>4.10</u>	<u>4.10</u>	2		<u>8.20</u>	Mean standard sheer forward
Amidships ...	<u>✓</u>	4		<u>✓</u>	<u>✓</u>	<u>✓</u>	4		<u>✓</u>	Length of enclosed superstructure forward of amidships =
3/4 L from F.P. ...	<u>8.32</u>	2		<u>16.64</u>	<u>8.24</u>	<u>8.24</u>	2		<u>16.48</u>	" " aft of " =
1/4 L " ...	<u>33.70</u>	4		<u>134.80</u>	<u>32.98</u>	<u>32.98</u>	4		<u>131.92</u>	<u>FORWARD SHEER</u>
F.P. ...	<u>75.72</u>	1		<u>75.72</u>	<u>76.00</u>	<u>76.00</u>	1		<u>76.00</u>	
Total ...				<u>340.76</u>					<u>336.16</u>	
Correction = $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) =$ <u><math>\frac{340.76 - 336.16}{18} (.75 - .1993) = .14</math></u>										
If limited on account of midship superstructure.										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 Flush Deck (if required)	38.39
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient	41.41
Depth to Freeboard Deck = <u>20.67</u>	$\Delta =$ <u>not</u>	Depth Correction ...	4.48
Summer freeboard = <u>3.08</u>	Tons per inch immersion at summer load water line	Deduction for superstructures ...	9.06
Moulded draught (d) = <u>17.59</u>	T = <u>available</u>	Sheer correction ...	.14
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <u>4.40</u>	Deduction = $\frac{\Delta}{40 T}$ inches =	Round of Beam correction ...	.06
Addition for Winter North Atlantic Freeboard (if required) = <u>6.40</u>		Correction for Thickness of Deck amidships ...	
		Other corrections, scantlings, etc. ...	
		Summer Freeboard = <u>36.91</u>	

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, 1, Steel, Deck:—

Tropical Fresh Water Line above Centre of Disc	...	Tropical Fresh Water Freeboard	...
Fresh Water Line	"	Fresh Water	"
Tropical Line	"	Tropical	"
Winter Line below	"	Winter	"
Winter North Atlantic Line	"	Winter North Atlantic	"



# PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS										
Description of Hatchway	N <sup>o</sup> 1	N <sup>o</sup> 2	N <sup>o</sup> 3	N <sup>o</sup> 4	Hatch betw N <sup>o</sup> 1 & 2 and N <sup>o</sup> 3 & 4	Fiddle	Bridge	Poop	Coal-hatch	
Dimensions of Hatchway	34'11" x 17'9"	30'11" x 28'	33'5" x 28'	28'5" x 26'	4'9" x 2'1"	3'7" x 2'6"	4'11" x 2'11 1/2"	1'11" x 2'5"	5' x 13'3"	
COAMINGS	Height above Deck		48"		9"	24"	17"	18"	3"	
	Thickness		48"		46"	40"	34"	34"	36"	
	Sides		44"		46"	40"	34"	34"	36"	
	Stiffeners		5 7" x 3" x 46"		✓	✓	✓	✓	✓	
	Brackets, Stays	5 off	4 off	4 off	4 off	✓	✓	✓	✓	
HATCH BEAMS	Number	6	5	5	4	None	None	Deck Beams carried	None	
	Spacing	ab 5'	ab 5'2"	ab 5'7"	ab 5'8"	None	None	None	None	
	Scantling and Sketch	6 x 3 x 50 at 28'	6" x 3" x 50"							
	Angles	4 x 3 x 46 at 20'								
	Web	23" x 44"	23"	x	44"	fitted	fitted	through	fitted	fitted
	Bearing Surface	3 1/2"	3 1/2"	3 1/2"	3 1/2"					
FORE AND AFTERS	Number					None	None	None	None	
	Spacing					None	None	None	None	
	Unsupported Lengths					None	None	None	None	
	Scantling* and Sketch					None	None	None	None	
	Bearing Surface					fitted	fitted	fitted	fitted	fitted
HATCH COVERS	Material		Wood		Steel cover	Wood	Wood	Wood	Wood	
	Thickness		2 1/2"		40"	2 1/2"	2 1/2"	3"	2 1/2"	
	How fitted		F. & A.		to close w.t.	F. & A.	Atkush.	F. & A.	F. & A.	
	Bearing Surface		2 1/2"		with turn-buckles sp.	3"	3"	2"	3 1/2"	
					8" apart.	16"	22"	16"	18"	
Spacing of Cleats			24"							
Number of Tarpaulins			3			2	2	2	2	
*Are wood fore and afters steel shod at all bearing surfaces? <i>None fitted</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:— *Fiddle openings can be closed by hinged steel covers.*  
*Vents to engine & boiler spaces and funnel on top of fiddle casing (7'6" above bridge deck) in good condition.*

Particulars of Flush Bunker Scuttles:— *None fitted.*

Particulars of Companionways:— *L. B. H.*  
*Poop Steel companion way 3'9" x 2'6" x 5'3" above wood deck, steel door 3'11 1/2" x 2'0 1/2" cap. of being manip. fr. both sides, sill 10 1/4" above wood deck.*

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

<i>Fiddle</i>	<i>1 off</i>	<i>14" diam</i>	<i>36" x</i>	<i>coam.</i>	
<i>Forw. well</i>	<i>2</i>	<i>14"</i>	<i>50" x</i>	<i>"</i>	
<i>Aft. well</i>	<i>2</i>	<i>13"</i>	<i>36" x</i>	<i>"</i>	
<i>Poop</i>	<i>4</i>	<i>9"</i>	<i>33" above wood deck</i>	<i>28" coam.</i>	
	<i>1</i>	<i>14"</i>	<i>32 1/2" x</i>	<i>38"</i>	

*Wood plugs & canvas covers supplied for all vents.*

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

*Fiddle* Height of opening above wood deck. *6 1/2"* (*For air pipe to fore peak, swanneck was taken away & wood plug inserted.*)  
*Forw. & Aft. Wells* ~ ~ ~ ~ ~ *3'9"* *Canvas covers supplied for all air pipes.*  
*Poop deck* ~ ~ ~ ~ ~ *6 1/2"*

Particulars of Gangway Cargo and Coaling Ports:— *None fitted.*



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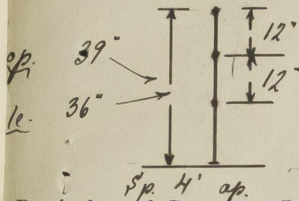
Particulars of Scuppers and Sanitary Discharge Pipes —

No. scuppers below freeboard deck. — Sanitary Discharge pipes have N.R. Valve. (None below freeboard deck.)

Particulars of Side Scuttles: Sidelights through ship's sides are fitted with perm. attached, hinged, dead lights.

No. sidescuttles below freeboard deck.

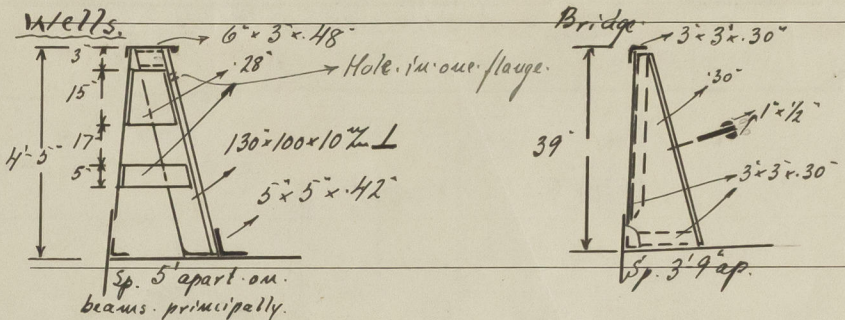
Particulars of Guard Rails:—



Particulars of Gangways, Lifelines, etc.:—

None fitted.

Lifelines arranged from crews quarters to navigating platform



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 ... ..	82'-6"	4'-5"	25 1/2" x 20 1/2"	4	14.5 sq	16.5 sq
Forward Well ... ..	80'-3"	4'-5"	25 1/2" x 22 3/4"	4	16.1 sq	16 sq

State position of each freeing port ... .. } After Well:— 68'-2" 47'-9" 24'-8" 2'-9" Bridge  
(E. and A. position and height above deck edge) } Forward Well:— bkd 1' 20' 39'-8" 61'-9" } Sill:— 15"

State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— Balanced plate shutters and one horizontal rod.

Additional area where sheer is less than standard.

Particulars of Superstructures, Trunks, Casings, Deckhouses.

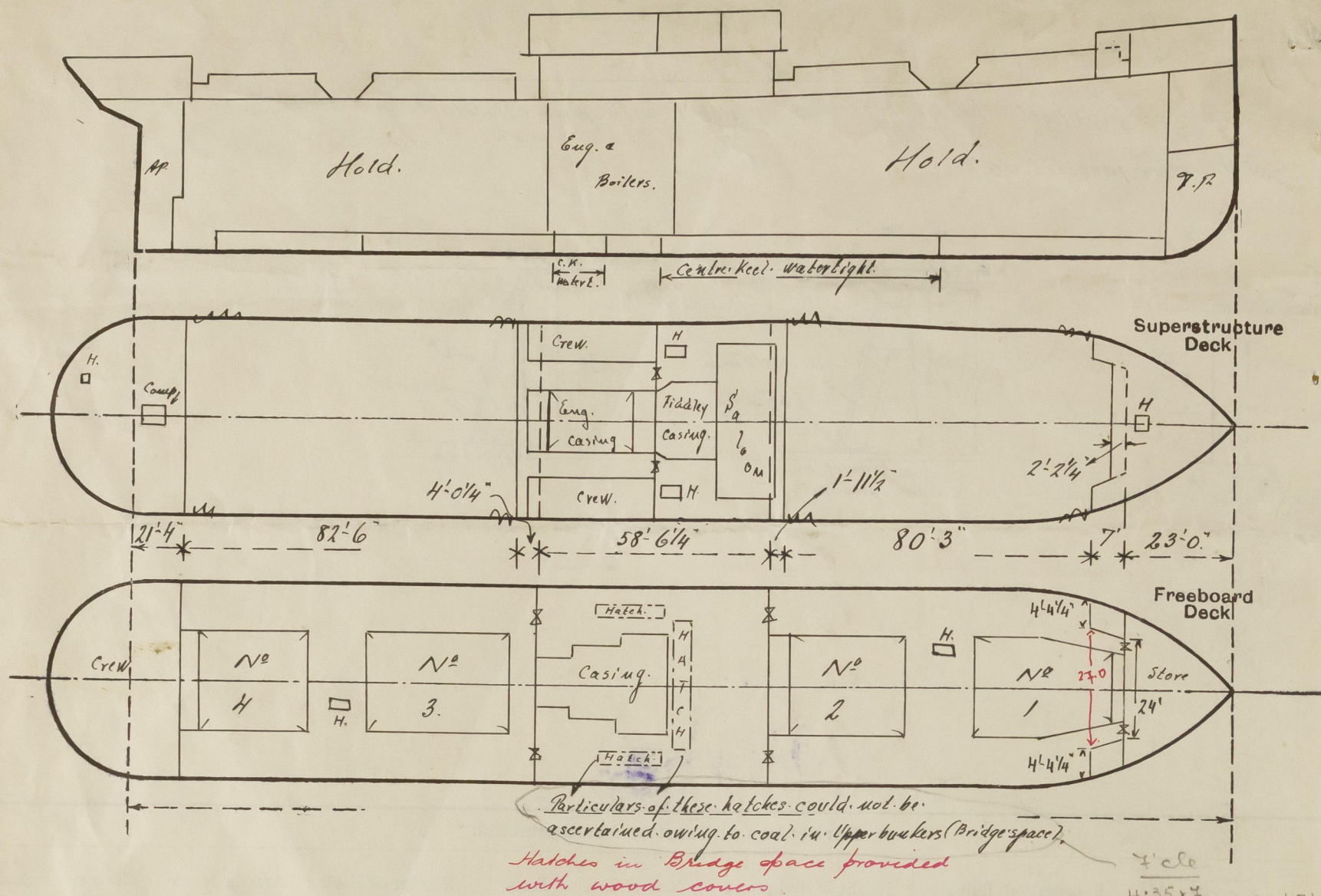
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead ... ..	Vert. pl.	34"	not accessible - wood lining			No openings	✓	7'
Raised Quarter Deck Bulkhead ...	✓							
Bridge, After Bulkhead ... ..	Vert. pl.	36"	4" x 3" x 32"	30"	None.	4' x 3'	22"	7'
Bridge, Forward Bulkhead ... ..	Vert. pl.	40"	8 1/2" x 3" x 48"	29"	Bulk. top & bott.	4' x 3'	22"	7'
Forecastle Bulkhead ... ..	Vert. pl.	36"	5" x 3" x 34"	27"	None.	4' 4 1/2" x 2' 0 1/2"	20"	7'-6"
Trunk, Aft ... ..	✓							
Trunk, Forward ... ..	✓							
Exposed Machinery Casings on Freeboard or Raised Quarter Deck ...	Vert. pl.	34"	4" x 3" x 34"		Top: None. Bott. takes b. bar.	4' 6" x 2'	18"	7'
Exposed Machinery Casings on Superstructure Decks ... ..	18" x 36"	32"	3" x 2 1/2" x 32"	24"	None.	4' 4 1/2" x 2' 0 1/2"	20"	7'-6"
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ... ..	18" x 36"	32"	5" x 3" x 36"	30"	Top: Conn. to beams. Bott: Carr. bol. deck	None	✓	7'
Deckhouses on Flush Deck Ships ...	✓							

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

Poop Bulkhead ... ..	No. openings.
Raised Quarter Deck Bulkhead ...	✓
Bridge, After Bulkhead ... ..	Hinged steel doors cap. of being manip. fr. outside only & to close with hook bolts sp. 12" apart. (through door only).
Bridge, Forward Bulkhead ... ..	Hinged steel doors to close with clips spaced 12" apart; manip. fr. outside only. bkd. clip. Door. clip. B.S.
Forecastle Bulkhead ... ..	Hinged steel door (ordinary with handle & lock) cap. of being manip. fr. both sides.
Exposed Machinery Casings on Freeboard or Raised Quarter Deck ...	Hinged steel door cap. of being manip. fr. both sides.
Exposed Machinery Casings on Superstructure Decks ... ..	Hinged steel door cap. of being manip. fr. both sides.
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ... ..	No. openings.
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 shown on the following sketches:—



$$23.0 + \frac{4.35 \times 4}{17.85} = 23.0 + 1.71 = 24.71$$

$$\text{exceeding } 2.19 - 1.71 = .48$$

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

Timber Deck-Cargo Freeboards is requested.

Poop is fitted.

Longitudinal Subdivision of D. B. tanks as per above sketch.

Bulwarks Please see 'Guard Rails' page 3 of report.

Fittings for Uprights.  $20 \times 3\frac{1}{2} \times 3\frac{1}{2} \times 40$  spaced  $\begin{cases} 12'-3" \text{ apart in forward well.} \\ 11'-3" \text{ after } \end{cases}$

Eyeplates for lashings. ~~None fitted.~~ fitted

Steering lead runs unprotected in after well along hatches.

Steering gear (hand) on poop (eff.).

P.S.

Owing to vessels being moored alongside 3/4 "William" it was not possible to check the sheers.

Builder's name and yard number Antwerp Eng. Co. Ltd. Hoboken.

Names of sister ships

Owners Trelleborg Ångfartygs Nya Akt. (S. Malmros. Mgr.)

Fee £ 240.00.

Received by me



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