

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker
having Forecastle, Bridge and Raised Quarter Deck.

Port of Survey Göteborg

Date of Survey 22nd April 1932.

Name of Surveyor Y. J. Th. Hydén

Particulars of Classification 100. A. 1.

(Type of Superstructures.)

Ship's Name WALMA Nationality and Port of Registry Swedish, Göteborg Official Number 5842. Gross Tonnage 1304 Date of Build 1908-1.

Moulded Dimensions: Length 229.3' Breadth 35.34'9" Depth 18' 3 1/2"

Moulded displacement at moulded draught = 85 per cent. of moulded depth 2722 tons

Coefficient of fineness for use with Tables .469

Depth for Freeboard (D)	
Moulded depth	18.29
Stringer plate	.04
Sheathing on exposed deck	
$T \left(\frac{L-S}{L} \right) =$	
Depth for Freeboard (D) =	18.33

Depth correction	
(a) Where D is greater than Table depth (D-Table depth) R =	$(18.33 - 15.29) \times 1.763 = 5.36$
(b) Where D is less than Table depth (if allowed) (Table depth-D) R =	
If restricted by superstructures	

Round of Beam correction	
Moulded Breadth (B)	34.75
Standard Round of Beam = $\frac{B \times 12}{50}$	8.34
Ship's Round of Beam	8.2
Difference	.16
Restricted to	
Correction = $\frac{\text{Diff}^2}{4} \times \left(1 - \frac{S_1}{L} \right)$	$\frac{.16^2}{4} \times .2898 = .01$

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	29.33	29.33	2'6"	2.863	51.33
" overhang	✓				
Bridge enclosed	57.50	57.50	7'0"		57.50
" overhang aft	✓				
" overhang forward	✓				
F'cle enclosed EQUIV.	24.42	24.42			24.42
" overhang	✓				
Trunk aft	✓				
" forward	✓				
Tonnage opening aft	✓				
" forward	✓				
Total	164.50	162.84			134.84

Standard Height of Superstructure	6.0'
" " R.Q.D.	3.863
Deduction for complete superstructure	28.93
Percentage covered $\frac{S}{L} =$	71.74
" " $\frac{S_1}{L} =$	71.02
" " $\frac{E}{L} =$	58.81
Percentage from Table, Line A. (corrected for absence of forecastle (if required))	44.33
Percentage from Table, Line B. (corrected for absence of forecastle (if required))	✓
Interpolation for bridge less than 2L (if required)	✓
Deduction =	.4433 x 28.93 = 12.83

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate 1906	Effective Ordinate	S	M	Product
A.P.	32.93	1		32.93	39.00	39.00	1		39.00
1/2 L from A.P.	14.65	4		58.60	16.98	16.98	4		67.92
2/2 L	3.62	2		7.24	4.23	4.23	2		8.46
Amidships		4					4		
3/2 L from F.P.	7.24	2		14.48	8.57	8.57	2		17.14
1/2 L	29.31	4		117.24	34.37	34.37	4		137.48
F.P.	65.86	1		65.86	79.00	79.00	1		79.00
Total				296.35					349.00

Correction = $\frac{\text{Difference between sums of products}}{18} = \frac{52.65}{18} = 2.925$

If limited on account of midship superstructure. $\frac{.194}{.2} \times 1.14 = 1.12$

Mean actual sheer aft = excess.

Mean standard sheer aft

Mean actual sheer forward = excess.

Mean standard sheer forward

Length of enclosed superstructure forward of amidships = .097

" " aft of " = .56

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = 18.54

Summer freeboard = 18.33

Moulded draught (d) = 16.55

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = 4.13 = 105%

Addition for Winter North Atlantic Freeboard (if required) = 2 = 51%

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta = 2910$

Tons per inch immersion at summer load water line

T = 16.

Deduction = $\frac{\Delta}{40 T}$ inches

= 4.55 = 116%

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{.769 + .68}{1.56} \times 28.37 =$

	+	-
Depth Correction	5.36	
Deduction for superstructures		12.83
Sheer correction		1.12
Round of Beam correction		.01
Correction for Thickness of Deck amidships	2.50	
Other corrections, scantlings, etc.	5.36	
Summer Freeboard	7.86	13.96

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

Tropical Fresh Water Line above Centre of Disc	221 mm
Fresh Water Line	116 "
Tropical Line	105 "
Winter Line below	105 "
Winter North Atlantic Line	156 "

Tropical Fresh Water Freeboard	328/9
Fresh Water	433 "
Tropical	444 "
Winter	654 "
Winter North Atlantic	705 "

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Forward Well R.Q. Deck On bridge Deck Fiddle top (Coal hatch) P.S. (2) At. Q.									
Description of Hatchway	N ^o 1	N ^o 2	N ^o 3	N ^o 4	N ^o 5	N ^o 6	N ^o 7	N ^o 8	N ^o 9
Dimensions of Hatchway	19'1" x 16'	30'1" x 16'	23'0 1/2" x 16'	23'0 1/2" x 16'	3' x 3'	4' x 9'6"	5'6" x 3'	20' x 39'	
COAMINGS	Height above Deck	31"	31"	30"	30 1/2"	32"	9"	3"	3"
	Thickness	48"	44"	44"	44"	38"	32"	30"	30"
	Sides	44"	44"	44"	44"	38"	32"	30"	30"
	Stiffeners	None	6 x 3 x 48"	None	FITTED	✓	✓	✓	✓
	Brackets, Stays	Fitted	✓	None	FITTED	✓	✓	✓	✓
HATCH BEAMS	Number	1	3	2	2				
	Spacing	9'6 1/2"	7'6 1/4"	ab. 7'8"	ab. 7'8"				
	Scantling and Sketch		3" x 3"	40"	40"				
	Angles		3"	3"	40"				
	Web		27"	40"	40"				
FORE AND AFTERS	Number	3	3	3	3				
	Spacing	9'1 1/2"	7'1 1/4"	7'3"	7'3"				
	Unsupported Lengths								
	Scantling and Sketch								
	Wood Centre (D x B)	7" x 5 3/4"	6 1/2" x 6"	7" x 6"	6 1/2" x 5 1/2"				
HATCH COVERS	Material	Wood	As	As	As	Wood	Wood	Wood	Wood
	Thickness	2 3/8"	2 3/8"	2 3/8"	2 3/8"	2 1/2"	2 1/2"	2 1/2"	2 1/2"
	How fitted	Atkwhsh.	for	for	for	Atkwhsh.	Atkwhsh.	Atkwhsh.	Atkwhsh.
	Bearing Surface	2"	for	for	for	2 1/2"	2 1/2"	2 1/2"	2 1/2"
	Spacing of Cleats	24"	N ^o 1	N ^o 1	N ^o 1	19"	24"	None	Fitted
Number of Taraulins	2					2	2	- do	-

*Are wood fore and afters steel shod at all bearing surfaces? *Yes*
 Are batten 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*

Particulars of fiddle, funnel and ventilator coamings:— All openings on fiddle top fitted with strong, hinged steel covers. Vents to boiler & engine
 Space out top of fiddle casing (7'-0" high) & in good condition.

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

Particulars of Companionways:— *None fitted.*

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

Fiddle 3 off 7" dia x 30" x 25" coam. }
 2 - 15" x 25" x 30" } Wood plugs & canvas covers supplied for all vents.
 Forward well 1 (pos) 15" x 36" x 34" }
 R.Q. deck 2 (pos) 15" x 36" x 34" }

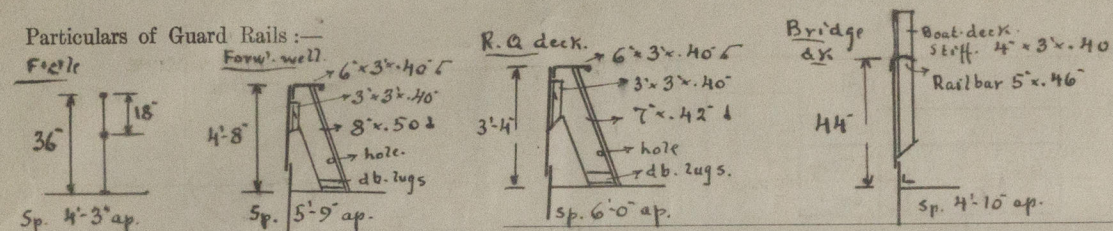
Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks:—
 Height from deck to opening 39" for all air pipes. Canvas covers supplied.

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

Particulars of Scuppers and Sanitary Discharge Pipes —
 No scuppers below freeboard or R.Q. deck.
 Sanitary Discharge Pipes fitted with N.R. valves.

Particulars of Side Scuttles:

All side lights through ship's side are fitted with efficient, hinged, dead light.



Particulars of Gangways, Lifelines, etc.:—

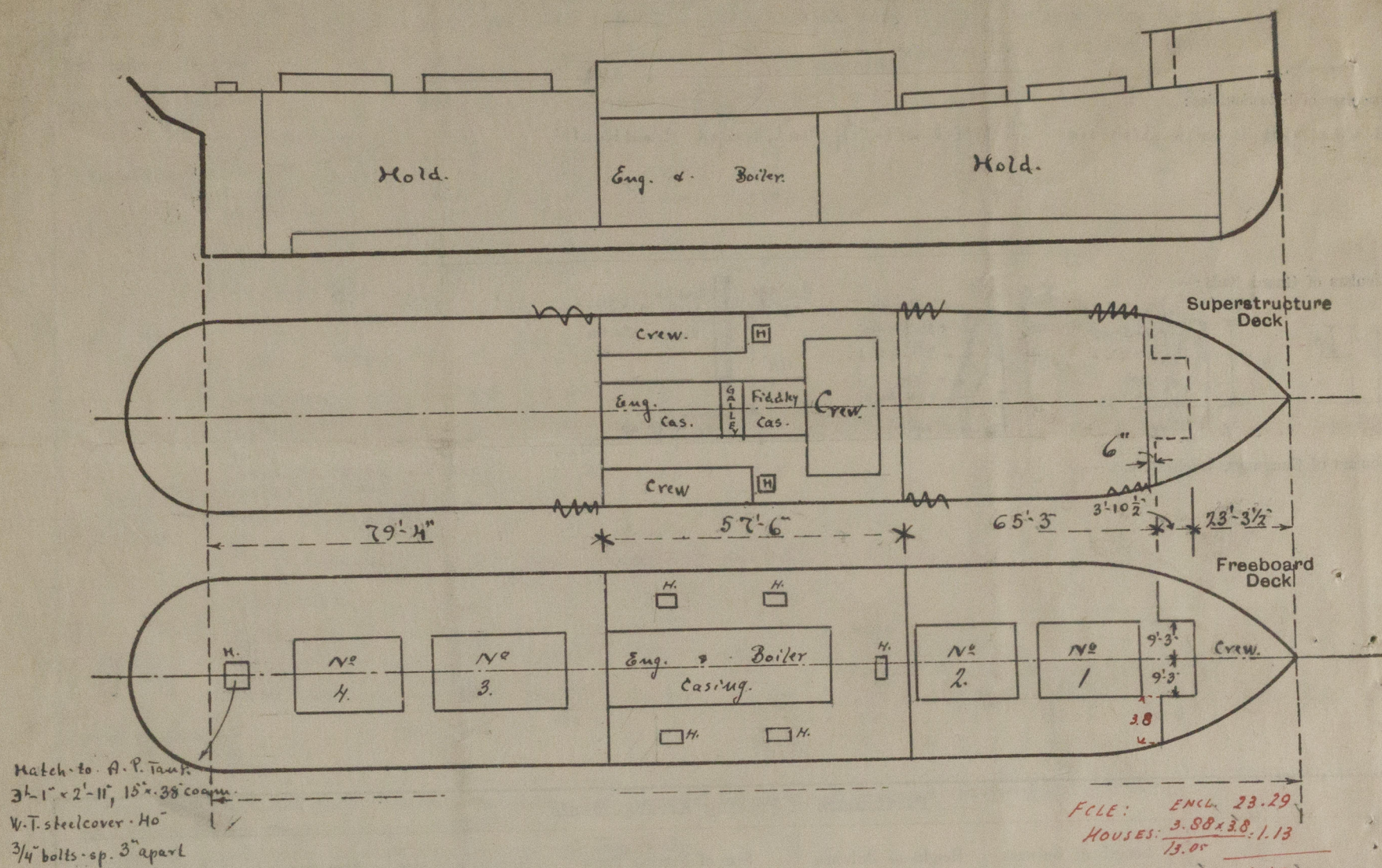
Lifelines fitted w forward well

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	79'4"	3'4"	27" x 14"	3	7.90 sq	15.86 sq
Forward Well	65'3"	4'8"	29 1/2" x 19 1/2" 33" x 22 1/2"	3 1	17.19 sq	13 sq
State position of each freeing port ... After Well:— 35'3" 29'3" 10'3" 16' 10'8" 37'1" 58'9" } all 13' } (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, strong plate 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	✓							
Raised Quarter Deck Bulkhead	✓							
Bridge, After Bulkhead	None	38"	5" x 3" x 40"	36"	No attachm.	35" x 31"	13"	4'6" above R.Q. deck
Bridge, Forward Bulkhead	23" x 40"	36"	6" x 3" x 48"	30"	brck. top & butt.	4' x 3'7"	23"	7'0"
Forecastle Bulkhead	Verk. pl.	26"				4'11 1/2" x 2'0"	17"	7'0"
Trunk, Aft	✓							
Trunk, Forward	✓							
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	✓							
Exposed Machinery Casings on Superstructure Decks	23" x 32"	28"	3" x 2 1/2" x 30"	4'3"	Top brck. Fwd. No att.	4'3" x 2'0"	23"	7'0"
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	18" x 32"	25"	3" x 2 1/2" x 32"	4'9"	No att.	None	✓	7'0"
Deckhouses on Flush Deck Ships	✓							

Particulars of Closing Appliances (state if capable of being manipulated from both sides).	
Poop Bulkhead	✓
Raised Quarter Deck Bulkhead	✓
Bridge, After Bulkhead	Hinged steel doors, closed with strong backs (2), manip. from outside only.
Bridge, Forward Bulkhead	Loose steel plates, closed through bolts in bulkhead, 3/4" bolts sp. 6" ap.
Forecastle Bulkhead	Steel doors cap. of being manip. fr. both sides.
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	✓
Exposed Machinery Casings on Superstructure Decks	Steel doors 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 shewn on the following sketches:—



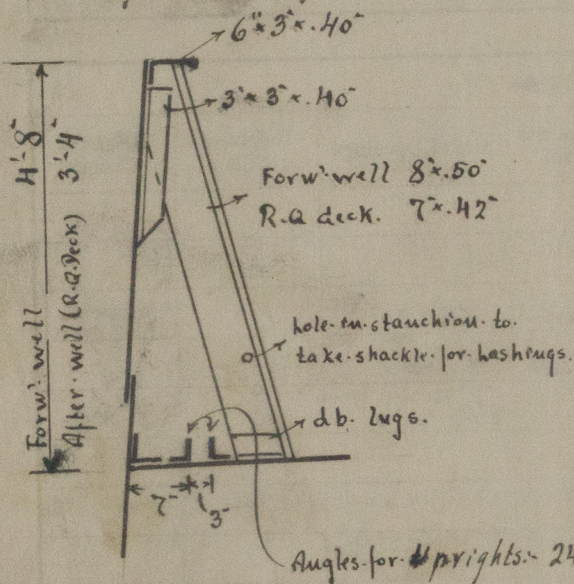
State any special features in the construction of the ship:—

Timber Deck Freeboard

No hood or deckhouse fitted aft on R.Q. deck.

Center keel not W.T. for any part.

Steering rod running between stanchion & bulwark on R.Q. deck. Hand steering gear fitted aft.



P.S. Owing to the ship being moored in the buoys on the river between two other ships, it was impossible to check the sheers.

The owner's survey states the vessel will be docked before going into service again. The bolted plates as closing app for bridge front bhd. are to be returned.

Builder's name and yard number Campbeltown S. B. Co, Campbeltown.

Names of sister ships

Owners A/B Maritime (C.O. Norin, Mgr.), Kullavik, Sweden.

Fee £ 170.00

Received by me



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