

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Index. No. **33318**
(For London Office only.)

7 OCT 1932

Computation of Freeboard for Steamer, ~~Sailing Ship~~, Tanker

having Two Decks

(Type of Superstructures.)

Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build
"ARIEL"	Finnish Helsingfors	698	2198	1929-6

Moulded Dimensions: Length 79.40.25 Breadth 12.23.19m Depth 8.382m

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

Coefficient of fineness for use with Tables 749

Port of Survey Helsingfors

Date of Survey 22 Sept 1932

Name of Surveyor Olavi Tylbeck

Particulars of Classification 100A1
with freeboard

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth <u>8.382</u>	(a) Where D is greater than Table depth (D-Table depth) R = <u>8.33(8.392-5.28)20.01 = + 519</u>	Moulded Breadth (B) <u>12.19m</u> <u>12.30m</u>
Stringer plate <u>0.15</u> <u>0.10</u>	(b) Where D is less than Table depth (if allowed) (Table depth-D) R = <u>✓</u>	Standard Round of Beam = $\frac{B \times 12}{50} =$ <u>244</u>
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ <u>✓</u>	If restricted by superstructures <u>✓</u>	Ship's Round of Beam = <u>280</u>
Depth for Freeboard (D) = <u>8.392</u>		Difference <u>10</u>
		Restricted to
		Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{10}{4} = - 2$

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... ..					
" overhang aft					
" overhang forward					
Forecastle enclosed					
" overhang					
Trunk aft					
" forward					
Tonnage opening aft					
" " forward					
Total					

Standard Height of Superstructure

" " R.Q.D.

Deduction for complete superstructure

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

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

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

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

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

Interpolation for bridge less than 2L (if required)

Deduction =

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	914	1		914	4.43	692	1		692
$\frac{1}{2}L$ from A.P.	406	4		1624	4.23	301	4		1204
$\frac{3}{4}L$ "	102	2		204	4.22	75	2		150
Amidships	✓	4		✓	4.40	✓	4		✓
$\frac{3}{4}L$ from F.P.	203	2		406	4.82	165	2		330
$\frac{1}{2}L$ "	812	4		3248	5.52	662	4		2648
F.P.	1828	1		1828	6.46	1543	1		1543
Total				8224					6567

Mean actual sheer aft = Deficient

Mean standard sheer aft

Mean actual sheer forward = Deficient

Mean standard sheer forward

Length of enclosed superstructure forward of amidships = NIL

" " aft of " = NIL

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{75-S}{2L} \right) = \frac{1657}{18} \times \frac{75}{1543} = + 69$

If limited on account of midship superstructure.

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

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = 8.392

Summer freeboard = 2.502

Moulded draught (d) = 5.890

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = 123

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

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta =$

Tons per inch immersion at summer load water line

T =

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

= 127

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{68 \times 749}{1.36} = \frac{1.429}{1.36}$

	+	-
Depth Correction	519	-
Deduction for superstructures	-	-
Sheer correction	69	-
Round of Beam correction	-	-
Correction for Thickness of Deck amidships	-	-
Other corrections, scantlings, etc.	892	-
to correspond to approved Moulded Draught	1480	-

Summer Freeboard = 2502

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

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Tropical Fresh Water Line above Centre of Disc	250	Tropical Fresh Water Freeboard	2252
Fresh Water Line " "	127	Fresh Water " "	2375
Tropical Line " "	123	Tropical " "	2379
Winter Line below " "	123	Winter " "	2625
Winter North Atlantic Line " "	174	Winter North Atlantic " "	2676

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS										
Description of Hatchway	1	2	3	4	5	6				
Dimensions of Hatchway	7.6 x 4.25	0.65 x 0.60	9.2 x 4.85	1.82 x 1.51	9.91 x 3.03	6.85 x 4.85				
COAMINGS	Height above Deck	0.93	0.30	0.93	3.05	2.88	0.93			
	Thickness Sides	10	7	10	8	10	10			
	Thickness Ends	10	7	10	8	10	10			
	Stiffeners	2 x 180 x 80 x 12	—	2 x 180 x 80 x 12	—	—	2 x 180 x 80 x 12			
HATCH BEAMS	Brackets, Stays	2 x 180 x 12	—	2 x 180 x 12	—	—	2 x 180 x 12			
	Number	5	5	5	5	5	3			
	Spacing	1.27	1.52	1.52	1.52	1.52	1.71			
	Scantling and Sketch	5 x 75 x 10	See No. 1	See No. 1	See No. 1	See No. 1	See No. 1			
FORE AND AFTERS	Bearing Surface	180 x 180 x 12	—	—	—	—	—			
	Number	5	5	5	5	5	3			
	Spacing	1.27	1.52	1.52	1.52	1.52	1.71			
	Unsupp'd Lengths	—	—	—	—	—	—			
HATCH COVERS	Scantling and Sketch	5 x 75 x 10	See No. 1	See No. 1	See No. 1	See No. 1	See No. 1			
	Bearing Surface	180 x 180 x 12	—	—	—	—	—			
	Material	Wood	Steel	Wood	Wood	Wood	Wood			
	Thickness	70	6	70	65	65	70			
HATCH COVERS	How fitted	F + A	Kingd. w. 2	F + A	Alum.	F + A	F + A			
	Bearing Surface	75	20	75	35	75	75			
	Spacing of Cleats	550	600	620	460	630	470			
	Number of Tarpaulins	3	0	3	2	2	3			

Particulars of fiddley, funnel and ventilator coamings:— Fiddley covered by hinged steel covers! Funnel and 8 ventilators in good condition placed on the engine, casing 2.43 met high.

Particulars of Flush Bunker Scuttles:— None fitted.

Particulars of Companionways:— Access to a store room forward through a steel casing, 1.42 x 0.76 m, height 1.82, sill 0.3, plating 6 mm, door 1340 x 600 mm, 6 mm thick, being operated from both sides. The casing is fitted with cleats and tarpaulins. Access to the crew's quarter through a deckhouse aft, plating 8 mm, stiffeners 75 x 75 x 10 spaced 600 mm, two teak doors 1520 x 570 x 50 mm, sill 50 mm. The doors being operated from both sides.

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

6 vent. $\phi = 380$ mm, height = 920 mm
4 " $\phi = 450$ mm, " = 3000 mm strid to the masts.

All ventilators being closed by bolted steel covers.

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

22 air pipes $\phi = 80$ mm, height = 780 mm
All air pipes being closed by hinged covers.

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

Particulars of Scuppers and Sanitary Discharge Pipes:— 7 scuppers on each side

11. Sanitary Discharge pipes, outlet above tween deck, not fitted with non-return valves.
5. Sanitary Discharge pipes, outlet above tween deck fitted with non-return valves.

Particulars of Side Scuttles:—

All side scuttles fitted with hinged deadlights.

Particulars of Guard Rails:—

Guard rails forward and aft

Particulars of Gangways, Lifelines, etc.:—

None fitted.

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						
Forward Well						
State position of each freeing port ... After Well:— (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:— Additional area where sheer is less than standard.						

Particulars of Superstructures, Trunks, Casings, Deckhouses.

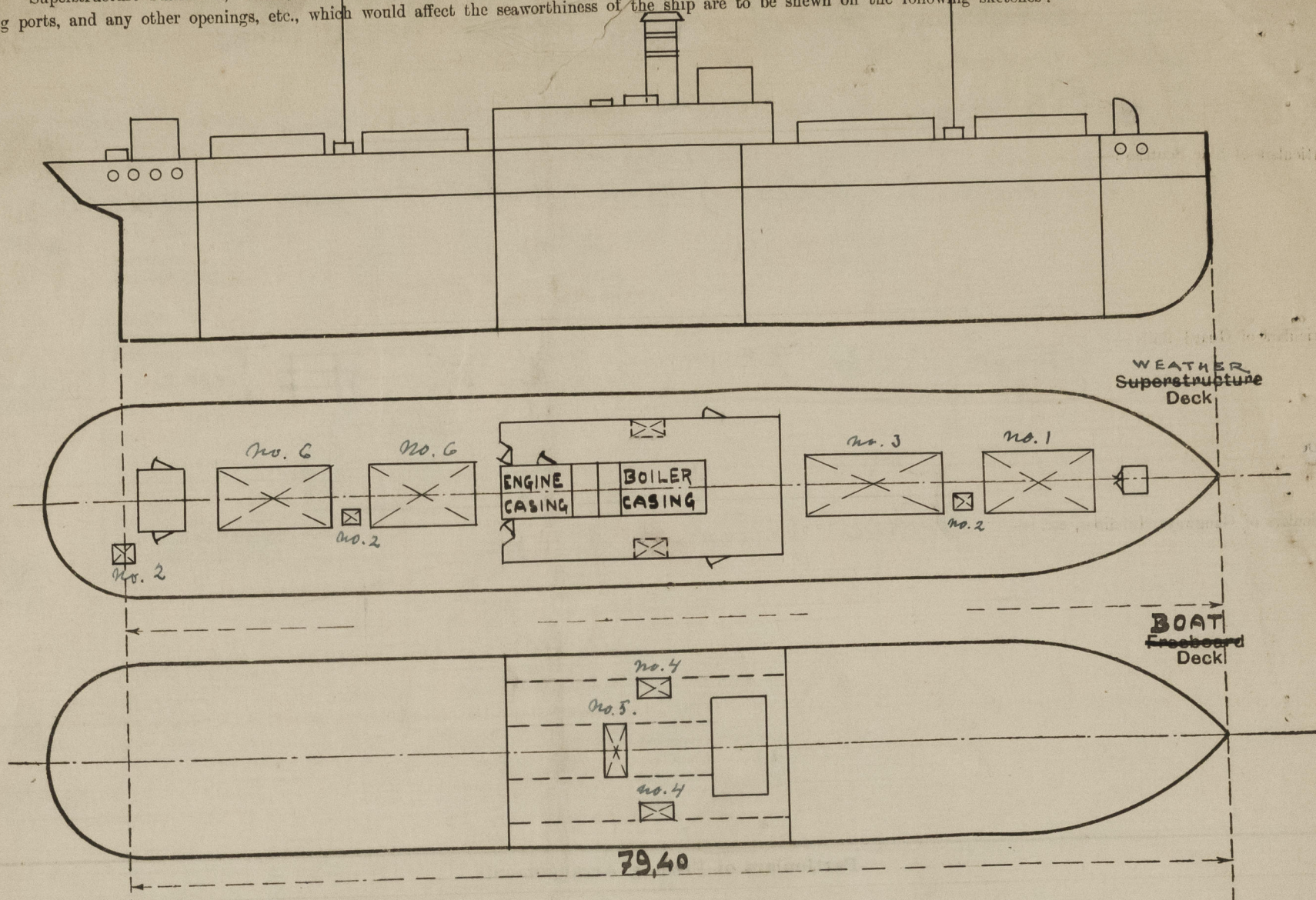
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead								
Raised Quarter Deck Bulkhead								
Bridge, After Bulkhead								
Bridge, Forward Bulkhead								
Forecastle Bulkhead								
Trunk, Aft								
Trunk, Forward								
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								

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

Poop Bulkhead	
Raised Quarter Deck Bulkhead	
Bridge, After Bulkhead	
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	

One hinged steel door, being operated from both sides.
4 " teak doors 472 thick, being operated from both sides.

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:— The sheer has been measured afloat, the draught being forward 3.38 met. and aft 4.70 met.

The Owners desire to have the freeboard computed in accordance with the Intern. L. L. Conv., or to have the old freeboard retained, which of these is more favourable.

Builder's name and yard number Kelsingörs Jernskips & Maskinbyggeri

Names of sister ships "Sirius"

Owners Finska Ångfartygs Abtiefablaget

Fee £ 10 : 4 : 0

Received by me

John Taylor



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