

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Index No. **29804**
(For London Office only.)

SEP 1932

Computation of Freeboard for Steamer, Sailing Ship, Tanker
having closed shelter deck

(Type of Superstructures.)

Ship's Name KIRUNA	Nationality and Port of Registry Swedish Stockholm	Official Number 6479	Gross Tonnage 5484	Date of Build 1921/4
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Moulded Dimensions: Length **385'** Breadth **53.42'** Depth **34.06'**
Moulded displacement at moulded draught = 85 per cent. of moulded depth **13310** (at 29' draught) tons
Coefficient of fineness for use with Tables **.795**

Port of Survey Oslo
Date of Survey 24/8 1932
Name of Surveyor H. J. Anderson
Particulars of Classification **100 A1**
S.S. N. Yk. No. 2-29

Depth for Freeboard (D)		Depth correction		Round of Beam correction	
Moulded depth	34.06	(a) Where D is greater than Table depth (D - Table depth) R = $(34.11 - 25.64) / 2.962 = 2.5$		Moulded Breadth (B)	53.42
Stringer plate	0.05	(b) Where D is less than Table depth (if allowed) (Table depth - D) R =		Standard Round of Beam = $\frac{B \times 12}{50} =$	12.82
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$		If restricted by superstructures		Ship's Round of Beam =	13
Depth for Freeboard (D) =	34.11			Difference	.18
				Restricted to	
				Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) =$	$\frac{.18}{4} = (-) .04$

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 ...					
Funnel 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 forecastle (if required)) ☒

Percentage from Table, Line B.
(corrected for absence of forecastle (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. ...	48.50	1		48.50	1.262	49.68	1		49.68
$\frac{1}{8}L$ from A.P. ...	21.58	4		86.32	367	14.45	4		57.80
$\frac{3}{8}L$ " ...	5.33	2		10.66	50	1.97	2		3.94
Amidships ...	-	4		-	0	-	4		-
$\frac{5}{8}L$ from F.P. ...	10.67	2		21.34	324	12.76	2		25.52
$\frac{7}{8}L$ " ...	43.17	4		172.68	1167	45.94	4		183.76
F.P. ...	97.00	1		97.00	2.742	107.95	1		107.95
Total ...				436.50					428.65

Mean actual sheer aft = .765
Mean standard sheer aft

Mean actual sheer forward = *excess*
Mean standard sheer forward

Length of enclosed superstructure forward of amidships = *sheer deficient*
" " aft of " =

Note: Sheer particulars as received from Owners

SHEER AFT	
STAND.	ACTUAL
48.50	49.68
64.44	43.35
15.99	5.91
19.23	28.94

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - S}{2L} \right) = \frac{7.85}{18} \times .75 = (+) .33$

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 = **34.11'**
Summer freeboard = **8.68'**
Moulded draught (d) = **25.43'**

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = **6.36'**

Addition for Winter North Atlantic Freeboard (if required =

Deduction for Fresh Water.

Displacement in salt water at summer load water line
11843 11,740 at 25.6' draught
 $\Delta = 13.510$ " 29.0"
Tons per inch immersion " at summer load water line
41.9 41.9 at 25.6' draught
 $T = 42.6$ " 29.0"
Deduction = $\frac{\Delta}{40 T}$ inches
= 4.04
= 180

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{1.475}{1.36}$

Depth Correction ... **25.00**
Deduction for superstructures ...
Sheer correction ... **.33**
Round of Beam correction ... **.04**
Correction for Thickness of Deck amidships ...
Other corrections, scantlings, etc. ...

		+	-
		25.00	
			.33
			.04
		25.33	.04

Summer Freeboard = **104.10"**SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, **Steel**, Deck:—

Tropical Fresh Water Line above Centre of Disc **34.11"**
Fresh Water Line " **180**
Tropical Line " **161**
Winter Line below " **161**
" " **161**

Tropical Fresh Water Freeboard ... **2303**
Fresh Water " **2464**
Tropical " **2483**
Winter " **2805**

2 DEC 1932

108 25

104 10

- 4 15

MARKING FORM
25 MAY 1938

MAY 1938

JUL 1938

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Particulars of fiddle, funnel and ventilator coamings:— Fiddle covered by strong steel hinged covers } All on top of 7 1/2" x 4" framing
Funnel and ventilators in good condition } standing on shelter deck.

Particulars of Flush Bunker Scuttles:— *None*

Particulars of Companionways:—
 Deck house aft, Steel with 2 steel doors aft end 5'-3" x 24". 9 1/2" 13" Handls both sides.

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

10 off 13" diam. 36" x 36" coaming.
Wood covers and tarpaulins for closing fitted.

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

ward and aft: 10 off 5" diam. cast iron goose neck 5"-25" high above deck
midships : 6 off 2½"-3½" goose neck 29"-30" high above deck.
Canvas covers are supplied.

Particulars of Gangway Cargo and Coaling Ports:—

Particulars of Scuppers and Sanitary Discharge Pipes —

Sanitary discharges pipes are led overboard through
ships sides above main deck and fitted with storm valves.

Particulars of Side Scuttles :

Particulars of Guard Rails:— Open rails with three horizontal rods, Stanchions 42" high spaced 5'-0" apart

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 :—
 (P. 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 Free-board or Raised Quarter Decks ...								
Exposed Machinery Casings on Super-structure Decks	17' x 36"	32"	5½ x 3½ x 36" angle	25"	—	4' 10" x 2' 2"	18"	7' 4"
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)

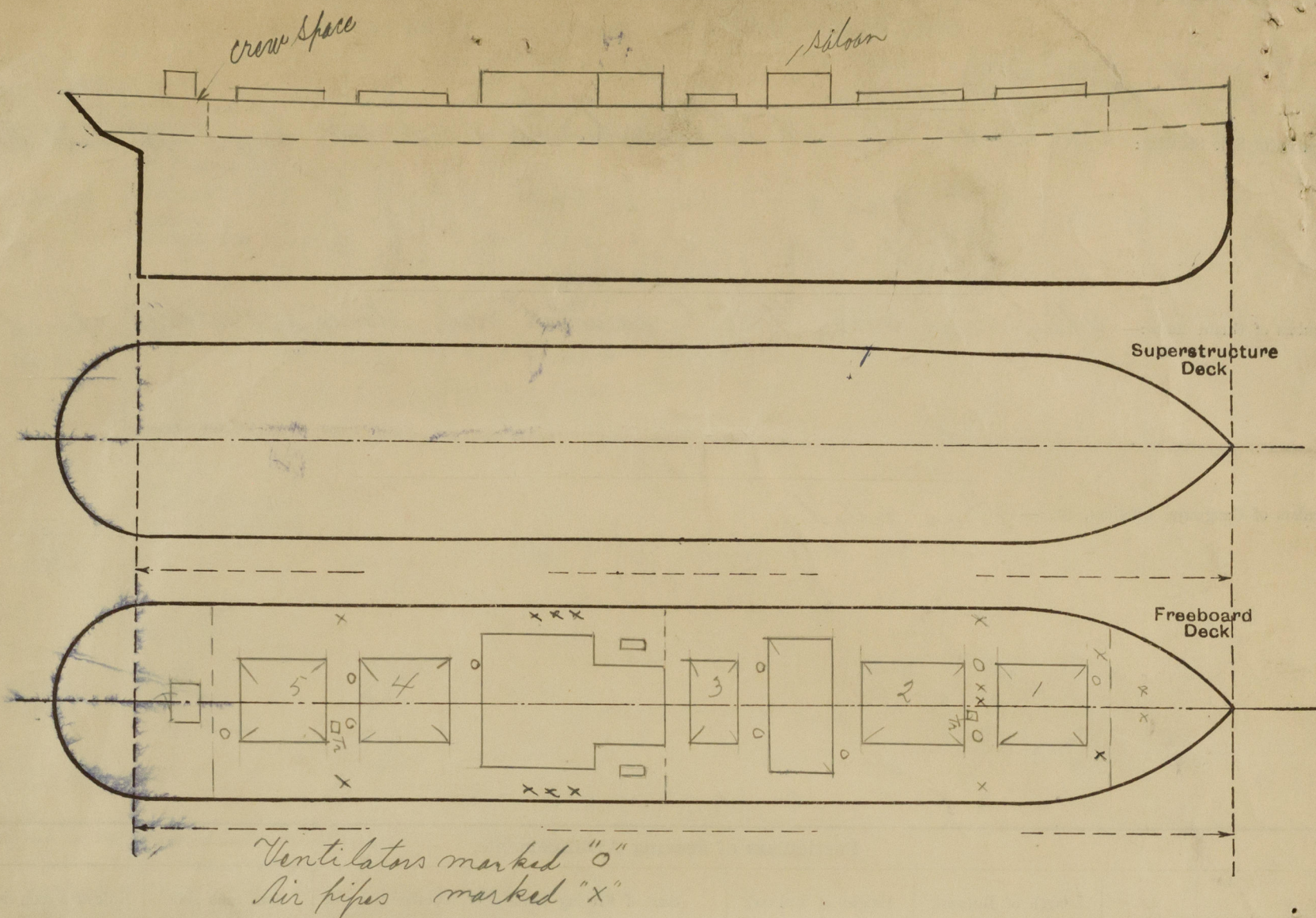
Poop Bulkhead	...	...	...
Raised Quarter Deck Bulkhead	...		
Bridge, After Bulkhead	...	...
Bridge, Forward Bulkhead	...	...
Forecastle Bulkhead	...	...	...
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	...	...	...
Exposed Machinery Casings on Superstructure Decks	...	...	...
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	...	...	...
Dekhouses on Flush Deck Ships	...		

One steel door (4' 6") to boiler room. Handle both sides.

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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:— No timber freeboard required.

Builder's name and yard number *Aktieb. Götaverken. Gothenburg. Yard no 355*

Names of sister ships *3/5 C. F. Liljevalch no. 59016 in R. B.*

Owners *Trafikaktieb. Grängesberg-Oxelösund, Stockholm.*

Fee *Mr. 390.00*

Inspection exp. *34.75*

Received by me



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