

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

14 SEP 1932

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having Forecastle, Bridge and Poop

(Type of Superstructures.)

Port of Survey Helsingfors

Date of Survey 29/8/32

Name of Surveyor John E. Lynde

Ship's Name MERCATOR

Nationality and Port of Registry Finnish Helsingfors

Official Number 626

Gross Tonnage 4506

Date of Build 1904-2

Moulded Dimensions: Length 109.55 Breadth 14.46 Depth 9.40

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

Coefficient of fineness for use with Tables

Particulars of Classification 8100A1

S.S. Cpn. 2nd No. 3-3, 29

Depth for Freeboard (D) 9.394

Moulded depth ... 9.400

Stringer plate ... 13

Sheathing on exposed deck

$T \left( \frac{L-S}{L} \right) =$

Depth for Freeboard (D) = 9.407

Depth correction

(a) Where D is greater than Table depth (D-Table depth) R = 8.33 (9.407 - 7.304) 27.67 = + 485

(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) 14.52

Standard Round of Beam =  $\frac{B \times 12}{50} = 290$

Ship's Round of Beam = 300.2

Difference Equum 8

Restricted to

Correction =  $\frac{\text{Diff}^2}{4} \times \left( 1 - \frac{S_1}{L} \right) = \frac{8^2}{4} \times \frac{56.73}{109.55} = 17.7$

### DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ...	<u>9.25</u>	<u>9250</u>	<u>2.13</u>	<u>2.13/2.165</u>	<u>9100</u>
" overhang ...					
R.Q.D. enclosed ...					
" overhang ...					
Bridge enclosed...	<u>28.0</u>	<u>28000</u>	<u>2.13</u>	<u>2.13/2.165</u>	<u>27550</u>
" overhang aft ...					
" overhang forward					
F'cle enclosed ...	<u>10.75</u>	<u>10750</u>	<u>2.13</u>	<u>2.13/2.165</u>	<u>10750</u>
" overhang ...					
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" " forward					
Total ...	<u>48.000</u>	<u>48000</u>			<u>47400</u>

Standard Height of Superstructure 2165

" " R.Q.D. 998

Deduction for complete superstructure 998

Percentage covered  $\frac{S}{L} = 43.82$

" "  $\frac{S_1}{L} = 43.2782$

" "  $\frac{E}{L} = 43.27$

Percentage from Table, Line A. (corrected for absence of forecastle (if required))

Percentage from Table, Line B. (corrected for absence of forecastle (if required)) 30.28

Interpolation for bridge less than 2L (if required)

Deduction = 998 x 30.28 = - 302

### SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	1167	1	1167	7.031066	1066	1	1066		
$\frac{1}{4}$ L from A.P. ...	519	4	2076	6.45472	472	4	1888		
$\frac{2}{4}$ L " ...	128	2	256	6.38118	118	2	236		
Amidships ...	.	4	.	6.53	.	4	.		
$\frac{3}{4}$ L from F.P. ...	257	2	514	6.92251	251	2	502		
$\frac{1}{4}$ L " ...	1038	4	4152	7.801003	1003	4	4012		
F.P. ...	2333	1	2333	9.532285	2285	1	2285		
Total ...			10498				9989		

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{509}{18} (.75 - .2191) = + 15$

If limited on account of midship superstructure.

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 =

" " aft of " =

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck =	<u>9.407</u>
Summer freeboard =	<u>1825</u>
Moulded draught (d) =	<u>7582</u>

Deduction for Tropical freeboard and addition for Winter freeboard =  $\frac{d}{48}$  inches = 158

Addition for Winter North Atlantic Freeboard (if required) =

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 =  $\frac{\Delta}{40 T}$  inches = 158

TABULAR FREEBOARD corrected for Flash Deck (if required)

Correction for coefficient  $\frac{791 + .68}{1.36} = \frac{1.471}{1.36}$

	+	-
Depth Correction ...	<u>485</u>	
Deduction for superstructures ...		<u>302</u>
Sheer correction ...	<u>15</u>	
Round of Beam correction ...		<u>1</u>
Correction for Thickness of Deck amidships		
Other corrections, scantlings, etc. ...		
	<u>500</u>	<u>303</u>

Summer Freeboard = 1825

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

Tropical Fresh Water Line above Centre of Disc ...	<u>316</u>	Tropical Fresh Water Freeboard ...	<u>1509</u>
Fresh Water Line " " ...	<u>158</u>	Fresh Water " " ...	<u>1667</u>
Tropical Line " " ...	<u>158</u>	Tropical " " ...	<u>1667</u>
Winter Line below " " ...	<u>158</u>	Winter " " ...	<u>1983</u>
Winter North Atlantic Line " " ...		Winter North Atlantic " " ...	

17 SEP 1932

RECEIVED 2 APR 1934

RECEIVED 7 JUN 1934

RECEIVED 10 OCT 1932



# PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS															
Description of Hatchway	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Dimensions of Hatchway	1.1 x 0.9	0.5 x 0.45	7.37 x 4.80	7.37 x 4.80	2.2 x 4.8	2 x 1.13 x 0.9	1.22 x 5.22	2 x 0.77 x 0.88	7.37 x 4.80	2.3 x 1.76	3.04 x 4.8	0.94 x 0.9	see 13	1.13 x 0.88	
COAMINGS	Height above Deck	0.3	0.22	0.76	10	0.46	0.4	2.32	0.32	10	0.45	0.3	0.22	see 13	0.24
	Thickness	7.5	7.5	10	10	10	10	10	10	10	10	10	10	10	10
	Sides	7.5	7.5	10	10	10	10	10	10	10	10	10	10	10	10
	Stiffeners	—	—	200 x 12	100 x 3	—	—	—	—	—	—	—	—	—	—
HATCH BEAMS	Number	—	—	2	2	—	—	—	—	—	—	—	—	—	—
	Spacing	—	—	2.45	2.45	—	—	—	—	—	—	—	—	—	—
FORE AND AFTERS	Number	—	—	3	3	—	—	—	—	—	—	—	—	—	—
	Spacing	—	—	1.2	1.2	—	—	—	—	—	—	—	—	—	—
HATCH COVERS	Material	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood
	Thickness	60	60	75	75	75	75	75	75	75	75	75	75	75	75
HATCH COVERS	How fitted	athw.	athw.	athw.	athw.	athw.	athw.	athw.	athw.	athw.	athw.	athw.	athw.	athw.	athw.
	Bearing Surface	55	60	75	75	75	75	75	75	75	75	75	75	75	75
Spacing of Cleats	700	320	530	620	480	420	500	—	—	—	—	—	—	—	—
Number of Tarpaulins	1	1	3	3	2	2	2	2	2	2	2	2	2	2	2

Particulars of ~~hatch~~ and ventilator coamings:— *Siddey on the top of engine casing is not fitted with covers. The funnel protected by the steel engine casing 2.16 feet high. Ventilators to engine space on top of the engine casing, in good condition.*

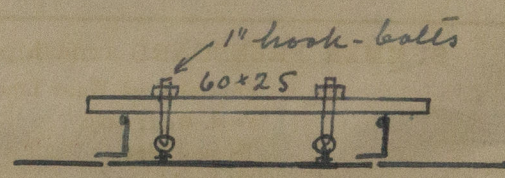
Particulars of Flush Bunker Scuttles:— *None fitted.*

Particulars of Companionways:— *Access to crew's quarters in the forecabin through a door of oak 1.52 x 0.74 x 50 fitted with hinges and being closed from both sides, side of wood 480 mm.*

Particulars of Ventilators in exposed positions on freeboard and superstructure decks:—  
*On poop dk. 3 off  $\phi = 0.15$  m, high = 0.37 m. freeb. dk. forward 4 off  $\phi = 0.37$ , high = 0.95  
 2 "  $\phi = 0.43$ , " = 1.05 2 "  $\phi = 0.55$ , " = 2.15  
 1 "  $\phi = 0.25$ , " = 0.82 forecabin dk. 5 "  $\phi = 0.21$ , " = 0.5  
 freeb. dk. aft 4 "  $\phi = 0.37$ , " = 0.95 2 "  $\phi = 0.15$ , " = 0.54  
 bridge dk. 2 "  $\phi = 0.55$ , " = 2.15 2 "  $\phi = 0.46$ , " = 0.94  
*all ventilator coamings fitted with wood covers, canvas covers**

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks:—  
*Airpipes 1502 above deck provided with screw-plugs.*

Particulars of Gangway Cargo and Coaling Ports:— *One coaling port on each side in Bridge space 520 x 490 mm fitted with hinges and closed from inside.*



After Well	32.9
Forward Well	28.6
State position of each freeing port (F. and A. position and height above deck)	
State whether the freeing ports are fitted with covers	
Additional area where sheer is less than standard	

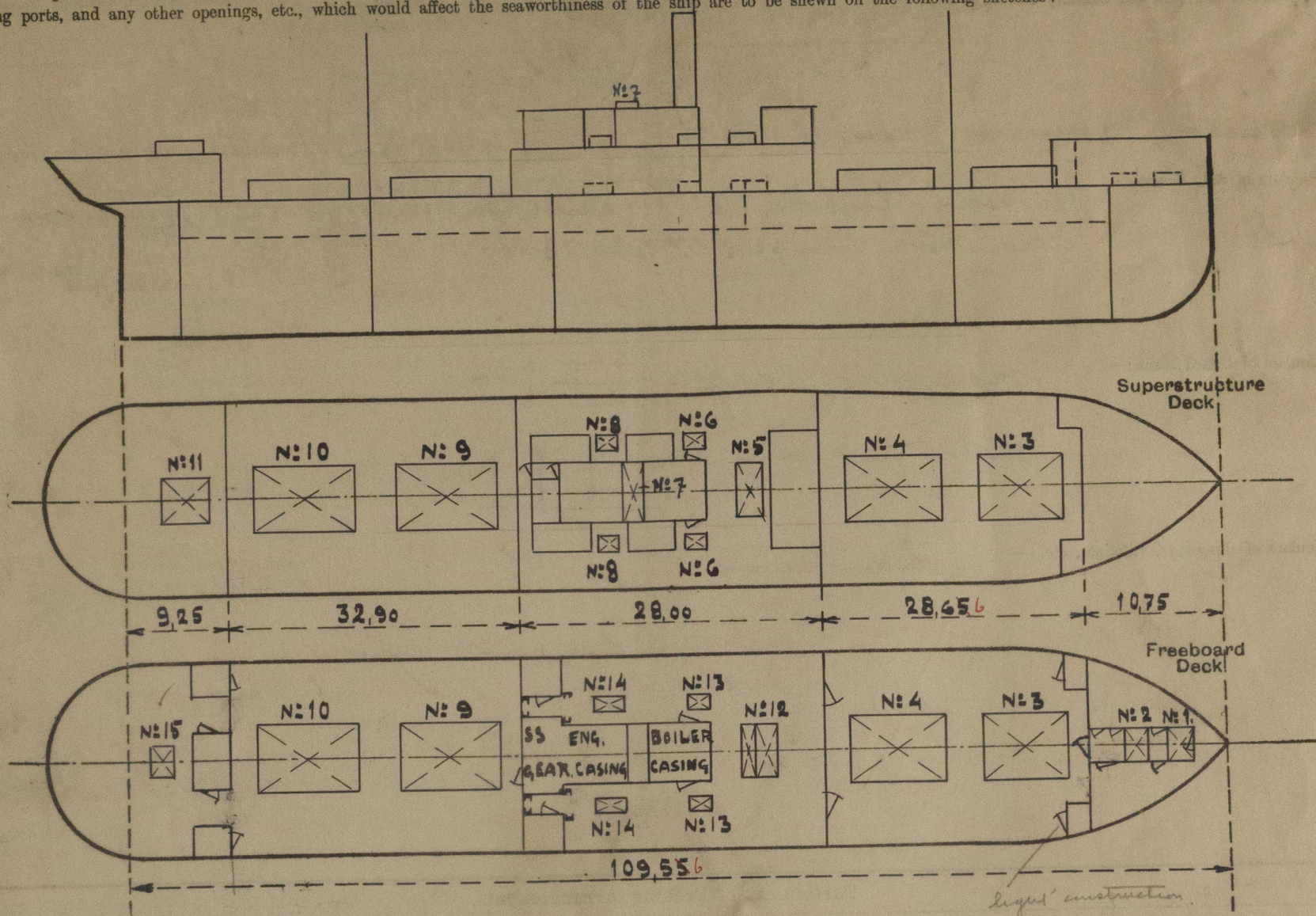
Particulars of	
Poop Bulkhead	2 to 200
Raised Quarter Deck Bulkhead	200
Bridge, After Bulkhead	200
Bridge, Forward Bulkhead	200
Forecabin Bulkhead	200
Trunk, Aft	200
Trunk, Forward	200
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	200
Exposed Machinery Casings on Superstructure Decks	200
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	200
Deckhouses on Flush Deck Ships	200



W430-0011<sup>2/2</sup>



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 ship has been measured afloat, the draught being forward 2.44 and aft 3.66 met.

The Owners desire to have the freeboard computed in accordance with the International Load Line Convention or to have the old freeboard retained which of these are more favourable.

The Gross Tonnage has been altered by <sup>the</sup> Finnish measuring Authority, the net Tonnage being 2695.

In my opinion it is impracticable to provide covers to be fitted on the fiddley openings placed on the top of an engine casing on superstructure deck.

Builder's name and yard number

Turner White & Co. Ltd.

Names of sister ships

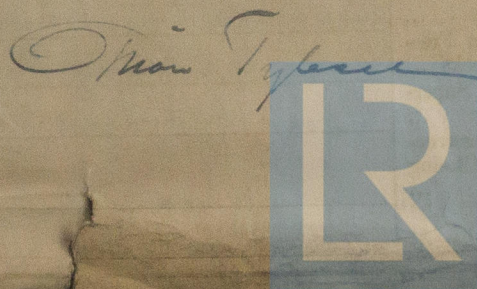
Owners

A/S Finland Amerikalinjen

Fee £

12 : 15 : 0

Received by me



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