

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

 Index. No. 15538  
 (For London Office only.)

16 JUL 1932

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having Forecastle, Raised fore deck, Bridge House, & R.Q.D.

Port of Survey Stockholm

Date of Survey 20 & 21/5/32

Name of Surveyor Ch. Knowles

Particulars of Classification +100 A1.  
S.S. Sec. 2<sup>nd</sup> No. 3-3.28

(Type of Superstructures.)

Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build
<u>"MATHILDA"</u> <u>nn. "Nancy" copstan.</u>	<u>Swedish</u> <u>Norrköping</u>	<u>4387</u>	<u>1264</u>	<u>1902-4</u>

Moulded Dimensions: Length 225' Breadth 34' 74" Depth 16' 6 1/2"

Moulded displacement at moulded draught = 85 per cent. of moulded depth 2421 tons

Coefficient of fineness for use with Tables 771

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth ... .. <u>16' 54"</u>	(a) Where D is greater than Table depth (D - Table depth) R = <u>(16' 58" - 15' 00") 1.73' = + 2.73"</u>	Moulded Breadth (B) <u>34' 74"</u>
Stringer plate ... .. <u>03'</u> <u>04'</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>8.34</u>
Sheathing on exposed deck $T \left( \frac{L-S}{L} \right) =$	If restricted by superstructures <u>✓</u>	Ship's Round of Beam = <u>8 1/2"</u>
Depth for Freeboard (D) = <u>16' 58 1/2"</u>		Difference <u>.16</u>
		Restricted to <u>✓</u>
		Correction = $\frac{\text{Diff}^a}{4} \times \left( 1 - \frac{S_1}{L} \right) =$ <u><math>\frac{.16}{4} \times \text{nil} = \text{nil}</math></u>

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)	
<u>R.F.D.</u>						
Peep enclosed ... ..	<u>86' 3 1/2"</u>	<u>64.79</u>	<u>3' 6"</u>	$\times \frac{3.5}{6.00}$	<u>37.80</u>	Standard Height of Superstructure <u>6.00</u>
" overhang ... ..	<u>64' 79"</u>					" " R.Q.D. <u>3.833</u>
R.Q.D. enclosed ... ..	<u>83' 14"</u>	<u>83.13</u>	<u>3' 6"</u>	$\times \frac{3.5}{3.833}$	<u>75.91</u>	Deduction for complete superstructure <u>28.50</u>
" overhang ... ..	<u>83' 13"</u>					Percentage covered $\frac{S}{L} =$ <u>100%</u>
Bridge enclosed ... ..	<u>55' 58"</u>	<u>55.58</u>	<u>7' 0"</u>		<u>55.58</u>	" " $\frac{S_1}{L} =$ <u>100%</u>
" overhang aft ... ..						" " $\frac{E}{L} =$ <u>84.80%</u>
" overhang forward ... ..	<u>21' 50"</u>					Percentage from Table, Line A. <u>81.25%</u>
File enclosed ... ..	<u>21' 5"</u>	<u>21.50</u>	<u>6' 6" R.F.D.</u>		<u>21.50</u>	(corrected for absence of forecastle (if required))
" overhang ... ..						Percentage from Table, Line B.
Trunk aft ... ..						(corrected for absence of forecastle (if required))
" forward ... ..						Interpolation for bridge less than 2L (if required)
Tonnage opening aft ... ..						Deduction = <u>28.50 x .8125 = - 23.16</u>
" forward ... ..						
Total ... ..	<u>225.00</u>	<u>225.00</u>			<u>196.79</u>	

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ... ..	<u>32.50</u>	1		<u>32.50</u>	<u>27</u>	<u>27.00</u>	1		<u>27.00</u>
1/4 L from A.P. ... ..	<u>14.46</u>	4		<u>57.84</u>	<u>11.75</u>	<u>12.05</u>	4		<u>48.20</u>
1/2 L " ... ..	<u>3.58</u>	2		<u>7.16</u>	<u>2.25</u>	<u>3.01</u>	2		<u>6.02</u>
Amidships ... ..	<u>✓</u>	4		<u>0</u>	<u>0</u>	<u>0</u>	4		<u>✓</u>
3/4 L from F.P. ... ..	<u>7.15</u>	2		<u>14.30</u>	<u>6.5</u>	<u>6.32</u>	2		<u>12.64</u>
1/4 L " ... ..	<u>28.93</u>	4		<u>115.72</u>	<u>25</u>	<u>25.28</u>	4		<u>101.12</u>
F.P. ... ..	<u>65.00</u>	1		<u>65.00</u>	<u>57</u>	<u>57.00</u>	1		<u>57.00</u>
Total ... ..				<u>292.52</u>					<u>251.98</u>

Mean actual sheer aft = Deficient!  
Mean standard sheer aft = Deficient!

Mean actual sheer forward = Deficient!  
Mean standard sheer forward = Deficient!

Length of enclosed superstructure forward of amidships =  
L

" " aft of " =

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{40.54}{18} \left( .75 - .50 \right) = + 0.56$

If limited on account of midship superstructure.

If limited to maximum allowance of 1 1/2 ins. per 100 ft.

## Deduction for Tropical Freeboard.

## Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck =	Ft. <u>16.58</u>
Summer freeboard =	<u>.79</u>
Moulded draught (d) =	<u>15.79</u>

## Deduction for Tropical freeboard and addition for

Winter freeboard =  $\frac{d}{4}$  inches = 3.95"

## Addition for Winter North Atlantic Freeboard (if required =

## Deduction for Fresh Water.

Displacement in salt water at summer load water line  
 $\Delta =$  1930 @ 16' 0 1/2"  
1784 @ 15' 0"

Tons per inch immersion at summer load water line  
 $T =$  15.68

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

## TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

	<u>68 + .771 = 1.451</u> <u>1.36 = 1.36</u>
Depth Correction ... ..	<u>2.73</u>
Deduction for superstructures ... ..	<u>- 23.16</u>
Sheer correction ... ..	<u>0.56</u>
Round of Beam correction ... ..	<u>-</u>
Correction for Thickness of Deck amidships ... ..	<u>-</u>
Other corrections, scantlings, etc. ... ..	<u>-</u>

Summer Freeboard = 9.52

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, 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		1	2	3	4	Store aft.	Bridge Deck	1st cross	2nd cross
Dimensions of Hatchway		18'-10" x 16'-4"	21'-2" x 16'-4"	16'-9" x 16'-4"	18'-10" x 16'-4"	42'-5" x 18'-2"	9'-5" x 35'-0"	17'-7" x 45'-0"	17'-7" x 45'-0"
COAMINGS	Height above Deck	39"	39"	39"	40"	18'-2"	4"	8"	8"
	Thickness	3/8"	3/8"	3/8"	3/8"	5/16"	7/8" B.A.	8" x 3" B.A.	8" x 3" B.A.
	Stiffeners	—	7 x 3" B.A.	—	7 x 3" B.A.	—	—	—	—
	Brackets, Stays	—	2 @ 8" B. Pl.	—	—	—	—	—	—
Steel HATCH BEAMS	Number	3	2	1	1	—	—	—	—
	Spacing	56"	4'-0"	centre	centre	—	—	—	—
	Scantling and Sketch	3" x 3" angles	2 off D=12"	D=44"	D=44"	—	—	—	—
	Bearing Surface	3"	3"	3"	3"	—	—	—	—
Wood FORE AND AFTERS	Number	3	3	3	3	—	—	—	—
	Spacing	48"	48"	48"	48"	—	—	—	—
	Unsupported Lengths	27'6" x 6"	Same	as	Nº 1.	—	—	—	—
	Scantling and Sketch	10 off 7" x 6" at centre-line	—	—	—	—	—	—	—
HATCH COVERS	Material	Wood	—	—	—	Wood	Wood	Wood	—
	Thickness	2 3/4"	—	—	—	2 1/2"	2 1/2"	2 1/2"	—
	How fitted	Thru	—	—	—	—	—	—	—
	Bearing Surface	1/2" x 50mm	—	—	—	1/2" x 50mm	1/2" x 50mm	1/2" x 50mm	—
Spacing of Cleats		28"	—	—	—	27"	50"	60"	—
Number of Tarpaulins		2	—	—	—	2	2	2	—
*Are wood fore and afters steel shod at all bearing surfaces?		Yes	—	—	—	—	—	—	—
Are battens 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:—

Fiddle grating protected by strong steel hinged cover. } all on top of a casing 4'-0" high  
 Funnel & ventilators in good condition } over upper deck.

Particulars of Flush Bunker Scuttles:—

1 each (P. & S.) on upper deck. 19" φ. with internal "dog" screwed up from outside. Strong cast iron covers.

Particulars of Companionways:—

Scale. Crew escape. Steel with double steel hinged doors, 25' x 47". Sill 6". Catcl operated from both sides. Doors fitted on aft side.

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

Scale. 1 @ 12" φ x 26" x 1/4". 2 @ 8" φ x 6" mushroom. 2 @ 6" φ x 4 1/2" mushroom.

Fore deck. 1 @ 12" φ x 36" x 1/4".

Aft deck. 2 @ 12" φ x 26" x 1/4". 1 @ 5 1/2" φ x 12" x 3/16". 1 @ 9" φ x 24" x 3/16".

Wood plugs & tarpaulins provided to all vents, except mushroom type, for closing.

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

Scale. 1 @ 1 1/2" φ. Flush screw cap.

Fore deck. 4 @ 1 1/4" φ x 38". Goose-neck. } Wood plugs & tarpaulins provided when required,  
 Upper dk. 2 @ 1 3/4" φ x 26". } for closing.  
 Aft dk. 4 @ 1 3/4" φ x 39". }

Particulars of Gangway Cargo and Coaling Ports:—

None.

Particulars of Scuppers and Sanitary Discharge Pipes:—

All sanitary discharge pipes led overboard above R.F.D.

Particulars of Side Scuttles:—

All fitted above R.F.D. provided with efficient deadlights, permanently attached.

Particulars of Guard Rails:—

On Scale. Strong stanchions 36" high, spaced 54" apart. 3 rails thro' each stanchion.

Particulars of Gangways, Lifelines, etc.:—

Ship shore gangway laid between Nº 1 & 2 Hatches & lifelines rigged as found convenient. Lifelines provided aft.

## 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	84'-0"	46"	29" x 17 1/2"	3	10.575 sq ft	
Forward Well	61'-6"	47 1/2"	29" x 17 1/2"	3	10.575 sq ft	
State position of each freeing port ... After Well:— 17', 47', 67' from Bridge Aft Bld. 4 1/2" over deck edge. (F. and A. position and height above deck edge) Forward Well:— 12', 35'-3", 52'-6" from Bridge For Bld. 4 1/2" State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— Shutters + 1 bar. 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	—	1/4"	3" x 3" angles	30"	—	2 @ 31" x 24"	10"	41 1/2"
Bridge, Forward Bulkhead	—	1/4"	4" x 3" angles	30"	—	2 @ 37" x 28"	7"	43"
Forecastle Bulkhead	—	1/4"	3" x 3" angles	Unobtainable	Wood lining	1 @ 23" x 51"	19"	6'-10"
Trunk, Aft								
Trunk, Forward								
Exposed Machinery Casings on Freeboard or Raised Quarter Decks								
Exposed Machinery Casings on Superstructure Decks	14 1/2"	1/4"	3" x 3" angles	32"	—	2 @ 20 1/2" x 51 1/2"	16 1/2"	7'-0"
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						2 portable steel doors, with bolts thro' bld. & door, & spaced 4" apart.		
Bridge, Forward Bulkhead						2 portable steel doors, with bolts thro' bld. & door, & spaced 4" apart.		
Forecastle Bulkhead						1 steel hinged door, with handle operated from both sides.		
Exposed Machinery Casings on Freeboard or Raised Quarter Decks								
Exposed Machinery Casings on Superstructure Decks						2 steel hinged doors with handles operated from both sides.		
Machinery Casings within Superstructures not fitted with Class I Closing Appliances								
Deckhouses on Flush Deck Ships								

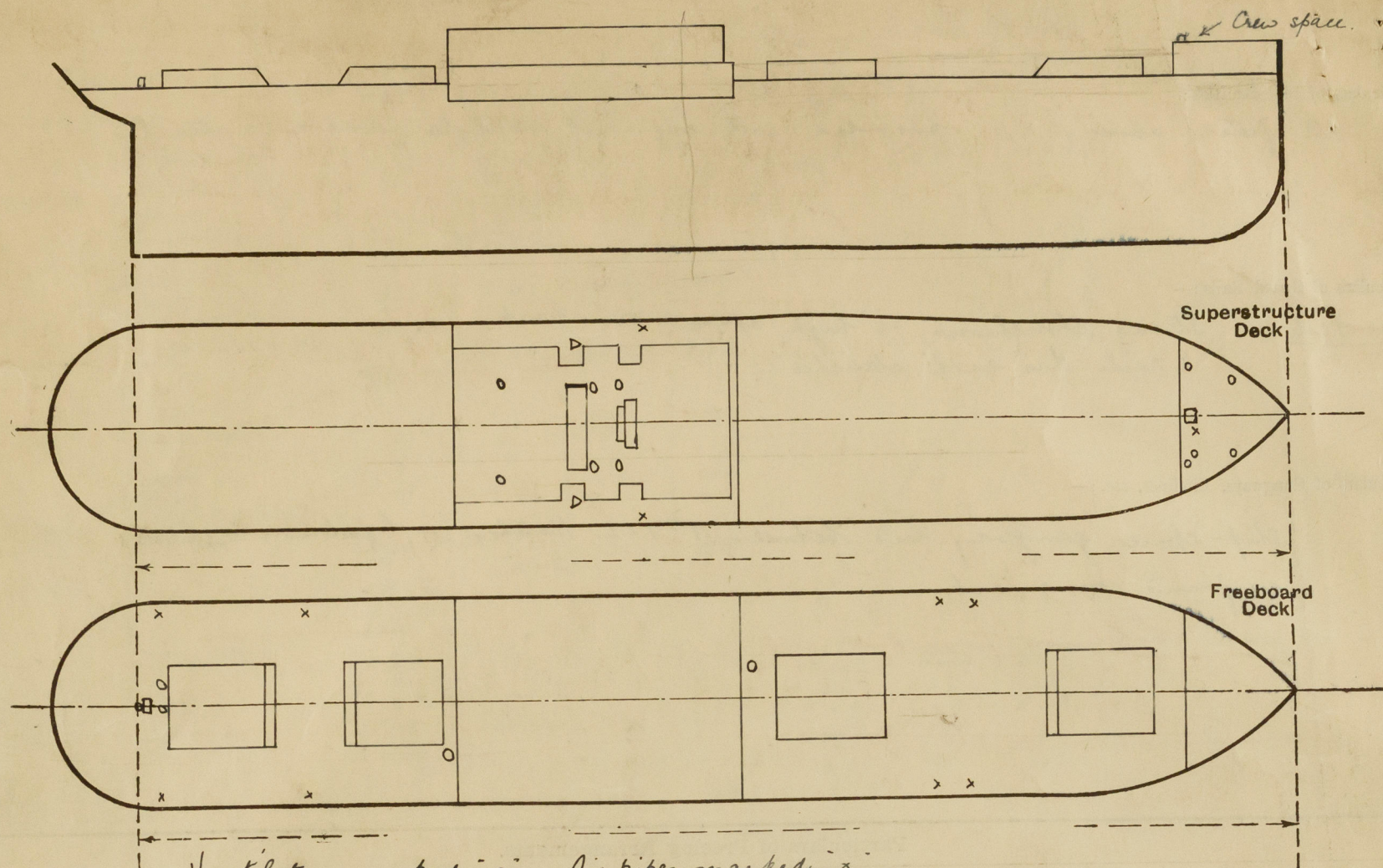
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Superstructure bulkheads, trunks, deckhouses, casings, cargo and coaling hatchways, extent and thickness of sheathing on the freeboard deck, gangway, cargo and coaling ports, and any other openings, etc., which would affect the seaworthiness of the ship are to be shown on the following sketches:—



Ventilators marked "o". Air pipes marked "x".

Flush bunker scuttles marked "Δ".

85% D = 4.07 mld = 14.22 act. Δ = 1587 ext = 1589 mld

State any special features in the construction of the ship:— N<sup>os</sup> 1, 3, 4 Hatches are trunked at one end, as per sketch above.  
that actual deck-opening is 26" greater than as given on page 2.  
N<sup>o</sup> 2 Hatch sides are joined to Bridge Front Bkd. by continuous plate (P. + S.) 31" high with half-rounds at top.

#### Particulars for Timber Freeboard.

It is stated that N<sup>o</sup> 3 D.B.T. has W.T. centre girder.

No sockets are provided for uprights, + no holes in bulwark stanchions for Shackles for lashings.

For<sup>2</sup> Bulwark stanchions.— 9" B. plate, with double angles to deck, having 4 rivets (2 to each angle). Spaced 6  
Aft. — 7" — — — — — 4 — — — — — (2 — — — — —) — 6'-6"

Steering rods led alongside bulwark behind bulwark stanchions.

Hand steering gear fitted aft on R. Q. D.

Builder's name and yard number W. Harkess & Son. Middlesbro. N<sup>o</sup> 157.

Names of sister ships

Owners Ake Danielsson. Norrköping.

Fee £ 170:-

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