

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

 Index No. 18820
 (For London Office only)

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having Bridge, Forecastle and Poop. Port of Survey Athens.

SARAYKOF (Type of Superstructures.) Date of Survey 30th May 1933

Ship's Name "MALAKOS" Nationality and Port of Registry Greek ANDROS. Official Number 3.903. Date of Build 1912-7. Name of Surveyor A. J. Seton

Moulded Dimensions: Length 365.00 Breadth 46.75 Depth 29'6"
 Moulded displacement at moulded draught = 85 per cent. of moulded depth 9.350. tons
 Coefficient of fineness for use with Tables .765

Particulars of Classification HULL 1.31
Shm. N° 3-12.24. Shm. 101-29

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth <u>29.50'</u>	(a) Where D is greater than Table depth (D - Table depth) R = <u>(29.54 - 24.33) 2.807</u> <u>= + 14.62"</u>	Moulded Breadth (B) <u>46.75'</u> Standard Round of Beam = $\frac{B \times 12}{50} = \frac{11.22}{50} = 11.22'Ship's Round of Beam = 11.50'Difference = 0.28' excess$
Stringer plate <u>.04</u>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = <u>✓</u>	Restricted to
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ <u>✓</u>	If restricted by superstructures <u>✓</u>	Correction = $\frac{\text{Diff}^*}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.28}{4} \times .5151 = -.04$
Depth for Freeboard (D) = <u>29.54'</u>		

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed	<u>32.75</u>	<u>32.75</u>	<u>7'0"</u>	<u>7.04</u>	<u>32.25</u>
" overhang					
R.Q.D. enclosed					
" overhang	<u>104.06</u>	<u>104.06</u>	<u>7'6"</u>		<u>104.06</u>
Bridge enclosed... ..	<u>3.94</u>	<u>2.96</u>			<u>2.96</u>
" overhang aft					
" overhang forward					
Hole enclosed	<u>37.91</u>	<u>37.20</u>	<u>7'9"</u>		<u>37.20</u>
" overhang					
Trunk aft					
forward					
Tonnage opening aft					
" " forward					
Total	<u>178.66</u>	<u>176.97</u>			<u>176.47</u>

Standard Height of Superstructure	<u>7.15</u>
" " R.Q.D.	<u>✓</u>
Deduction for complete superstructure	<u>39.67</u>
Percentage covered $\frac{S}{L} =$	<u>48.94%</u>
" " $\frac{S_1}{L} =$	<u>48.49%</u>
" " $\frac{E}{L} =$	<u>48.35%</u>
Percentage from Table, Line A. (corrected for absence of forecastle (if required))	
Percentage from Table, Line B. (corrected for absence of forecastle (if required))	<u>34.59%</u>
Interpolation for bridge less than 2L (if required)	
Deduction = <u>39.67</u> x <u>34.59</u> =	<u>13.72</u>

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	<u>46.50</u>	1		<u>46.50</u>	<u>53</u>	<u>53.00</u>	1		<u>53.00</u>
$\frac{1}{4}$ L from A.P.	<u>20.69</u>	4		<u>82.76</u>	<u>20</u>	<u>22.91</u>	4		<u>91.64</u>
$\frac{2}{4}$ L "	<u>5.11</u>	2		<u>10.22</u>	<u>5</u>	<u>5.73</u>	2		<u>11.46</u>
Amidships	<u>✓</u>	4		<u>✓</u>	<u>✓</u>	<u>✓</u>	4		<u>✓</u>
$\frac{2}{4}$ L from F.P.	<u>10.23</u>	2		<u>20.46</u>	<u>11</u>	<u>11.45</u>	2		<u>22.90</u>
$\frac{1}{4}$ L "	<u>41.38</u>	4		<u>165.52</u>	<u>45</u>	<u>45.82</u>	4		<u>183.28</u>
F.P.	<u>93.00</u>	1		<u>93.00</u>	<u>103</u>	<u>103.00</u>	1		<u>103.00</u>
Total	<u>418.50</u>			<u>418.46</u>					<u>467.28</u>

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{48.82}{18} \left(.75 - \frac{.2447}{2} \right) = -1.37"$$

If limited on account of midship superstructure. ✓

$$\frac{\text{Mean actual sheer aft}}{\text{Mean standard sheer aft}} = \text{Excess}$$

$$\frac{\text{Mean actual sheer forward}}{\text{Mean standard sheer forward}} = \text{Excess}$$

$$\frac{\text{Length of enclosed superstructure}}{L} \text{ forward of amidships} = \frac{20.60}{265} = .0777$$

$$\text{" " aft of " " } = \frac{53.40}{265} = .2015$$

If limited to maximum allowance of 1½ ins. per 100 ft. ✓

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck =	<u>29.54</u>
Summer freeboard =	<u>5.35</u>
Moulded draught (d) =	<u>24.19</u>

Deduction for Tropical freeboard and addition for

$$\text{Winter freeboard} = \frac{d}{4} \text{ inches} = \frac{6.05}{4} = 1.51 = 6"$$

Addition for Winter North Atlantic Freeboard (if required) =

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$$\Delta = 9019$$

Tons per inch immersion at summer load water line

$$T = 34.20$$

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

$$= \frac{9019}{40 \times 34.20} = 6.59" = 6\frac{1}{2}"$$

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

$$\frac{.765 + .68}{1.36} = \frac{1.445}{1.36}$$

Depth Correction

Deduction for superstructures

Sheer correction

Round of Beam correction

Correction for Thickness of Deck amidships

Other corrections, scantlings, etc.

+	-
<u>14.62</u>	
	<u>13.72</u>
	<u>1.37</u>
	<u>.04</u>
<u>14.62</u>	<u>15.13</u>

$$\text{Summer Freeboard} = 64.20$$

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

Tropical Fresh Water Line above Centre of Disc

Fresh Water Line " "

Tropical Line " "

Winter Line " " below

Winter North Atlantic Line " "

12½" = 317 Tropical Fresh Water Freeboard

6½" = 165 Fresh Water " "

6" = 152 Tropical " "

6" = 152 Winter " "

✓ Winter North Atlantic " "

5' 4"	1632
4' 3"	1315
4' 9"	1447
4' 10"	1480
5' 10"	1784

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway	No 1	No 2	No 3	No 4	No 5	No 6	No 7	No 8	No 9
Dimensions of Hatchway	20'0" x 16'2"	32'0" x 16'2"	32'0" x 15'6"	24'0" x 15'3"	28'0" x 16'2"	11'4" x 16'2"	2'0" x 16'0"	5'0" x 15'0"	40'0" x 14'0"
COAMINGS	Height above Deck ... 30" Thickness ... 50" Stiffeners ... none Brackets, Stays ... 2 each side								
HATCH BEAMS	Number ... 3 Spacing ... 4'9" Scantling and Sketch ... 4'9" x 40" Bearing Surface ... 3" x 3" x 40"								
FORE AND AFTERS	Number ... 2 Spacing ... 6'0" Unsupported Lengths ... 24'0" Scantling and Sketch ... 6'0" x 30" Bearing Surface ... 2" x 2" x 30"								
HATCH COVERS	Material ... Wood Thickness ... 2 1/2" How fitted ... Forc and Aft. Bearing Surface ... 3" x 3" x 40"								
Spacing of Cleats	24"								
Number of Taraulins	2								

*Are wood fore and afters steel shod at all bearing surfaces? *yes.*
 Are battens and wedges efficient and in good condition? *Some of the tarpaulins require to be removed or repaired.*
 Are tarpaulins in good condition and in accordance with rule requirements?
 Are lashings provided in accordance with rule requirements? *yes.*

Particulars of fiddle, funnel and ventilator coamings:—
 2 ventilators 30" dia. to boiler room.
 2 " 15" " x 12" coaming x 40" to after end of boiler room.
 2 " 15" " to engine room.

*Old fiddle openings are provided with hinged steel covers.
 engine room steel skylight with flap cover and bell's gal. (same glass as below of fiddle).*

Particulars of Flush Bunker Scuttles:—

Particulars of Companionways:—

Particulars of Ventilators in exposed positions on freeboard and superstructure decks:—
 On Fore Deck 3 off. 9 1/2" dia x 18" coaming x 30".
 On Port Deck 3 off. 8" dia x 15" coaming x 25".
 On After Well 12" x 15" x 36" x 40".
 On After Well 12" x 15" x 24" x 40".
 On Bridge Deck 2 " 12" x 24" x 32".
 On Bridge Deck 2 " 8" x 15" x 25".

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

On Fore Deck steel pipe 2" dia x 20" high.
 On Masts steel pipe 2" x 26".
 On 1st Mast 2" x 24".
 On 2nd Mast 2 1/2" x 15".

Particulars of Gangway Cargo and Coaling Ports:—

Particulars of Scuppers and Sanitary Discharge Pipes

2 scuppers each side fore bridge space, without stems valves on the ship side, but with stems on the land end.

Particulars of Side Scuttles:

9" scuttles in fore-castle, with steel covers permanently attached.

Particulars of Guard Rails:—

*On Fore Deck 40" 1" bar.
 22" 3/4" bar.
 Stanch. 1 1/2" dia. spaced 54".
 Bulwark on bridge deck 42" high.
 Side Rail 45" x 9" x 25".
 1 freeing port 19" x 17". Lower edge 18" above deck.
 Fitted with hinged shutter.*

Particulars of Gangways, Lifelines, etc.:—

Promen made for rigging lifelines on the port & starboard sides of the well decks forward & 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
Well	96'4"	46"	31" x 19" 43" x 19"	3 } 5	19'4" x 19" = 368 sq ft	19'0" x 19" = 361 sq ft
Forward Well	90'	46"	44" x 19" 43" x 19"	3 } 4	15'0" x 19" = 285 sq ft	15'0" x 19" = 285 sq ft

State position of each freeing port ... After Well: at 9' 10" and 84' from bow, after RND. Lower edge 12" above deck.
 (F. and A. position and height above deck edge) Forward Well: at 1' 33" and 58' from bow, after RND.
 State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:—
 Hinged shutters. 2 bars 1" dia. across.

Additional area where sheer is less than standard.

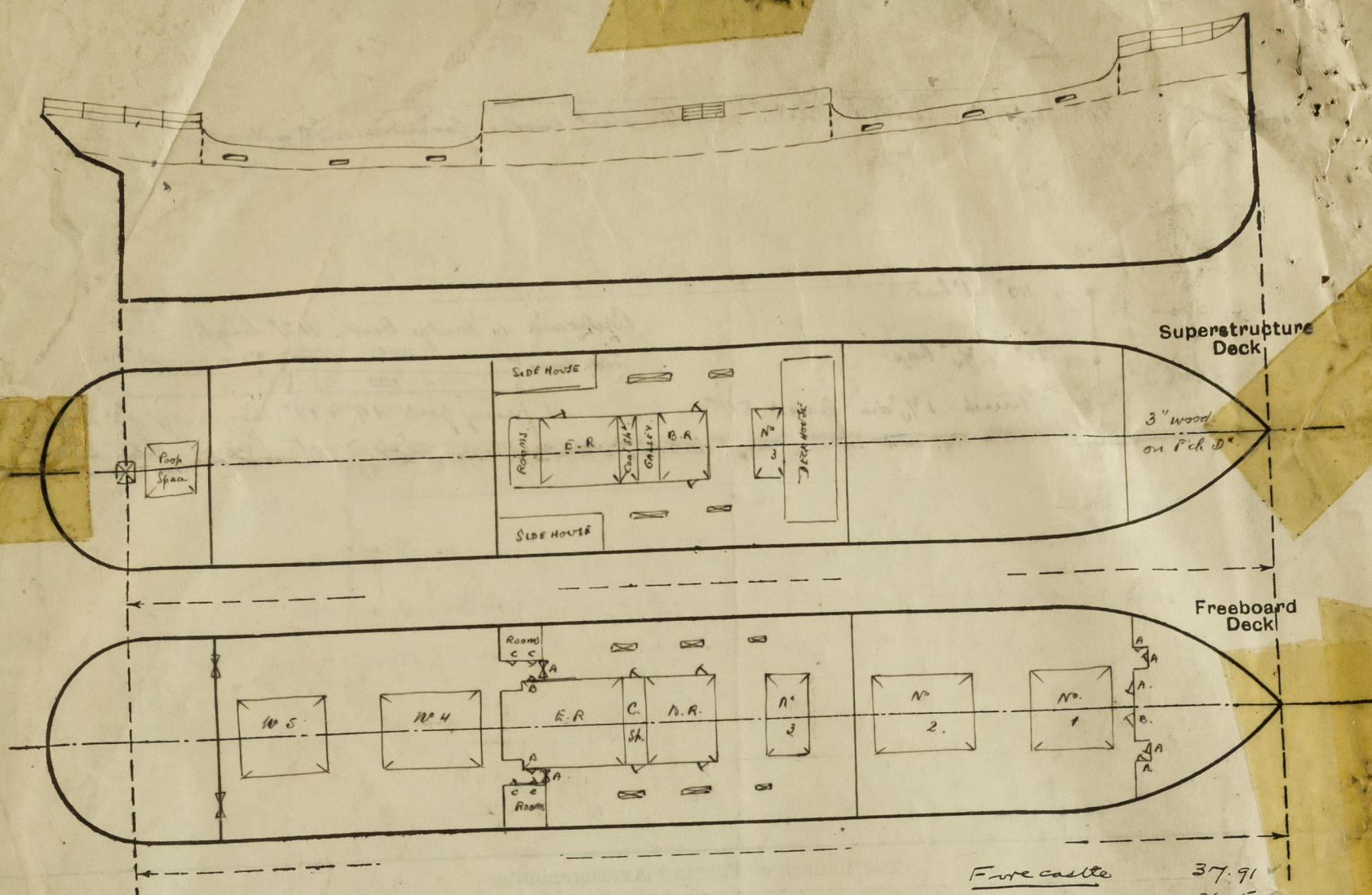
Particulars of Superstructures, Trunks, Casings, Deckhouses.

	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead	44"	40"	L 6" x 3" x 40"	30"	At top	54" x 42"	18"	7'0 1/2"
Raised Quarter Deck Bulkhead	40"	36"	L 3" x 3" x 44"	36"	At top	A. 7'0" x 4'6" B. 5'0" x 2'0" C. 3'0" x 2'0"	18"	7'6"
Bridge, After Bulkhead	44"	36"	L 7" x 3" x 60"	32"	At top & butt.	None	18"	7'6"
Bridge, Forward Bulkhead	32"	32"	L 3 1/2" x 3" x 40"	32"		A. 6'0" x 24" B. 6'0" x 24"	18"	7'6"
Forecastle Bulkhead	32"	32"	L 3 1/2" x 3" x 40"	32"		A. 6'0" x 24" B. 6'0" x 24"	18"	7'6"
Trunk, Aft								
Trunk, Forward								
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	32"	32"	3" x 3" x 42"	28"	At top	6'0" x 24"	18"	7'6"
Exposed Machinery Casings on Superstructure Decks	32"	32"	3" x 3" x 42"	28"	At top	A. 6'0" x 24" B. 4'5" x 3'6"	18"	7'6"
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	32"	32"	Web frames 1 1/2" x 36" spaced 10'0"					
Deckhouses on Flush Deck Ships								

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

Poop Bulkhead	3" shifting boards in locked channels full height of the opening.
Raised Quarter Deck Bulkhead	A. To Bridge space. 3" shifting boards in locked channels full height of the opening. B. To Eng. room. Half-height door with ordinary lock. C. To Room at bow. 1 1/2" hard wood door with ordinary lock.
Bridge, After Bulkhead	
Bridge, Forward Bulkhead	
Forecastle Bulkhead	A. Hard wood door with ordinary lock or padlock. B. Half-height door.
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	1 1/2" Eng. room door. Hinged steel door manipulated from both sides. Requiring arrangement to require 2 men to open.
Exposed Machinery Casings on Superstructure Decks	1 1/2" Fiddle. Hinged steel door manipulated from both sides. Requiring arrangement to require 2 men to open.
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	A. To Coal shoot. Hinged steel door with clips on the land side. Manipulated from both sides. B. To Fiddle.
Deckhouses on Flush Deck Ships	

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



Bridge 108.00
 Recross $\frac{14.50 \times 5.33}{23.25} = 3.33$
 $\frac{5.5 \times 1.67}{23.25} = .61$
 3.94
 104.06 equiv.

Free castle 37.91
 $\frac{L}{10} = 36.50$
 1.41 O.H.
 .70
 36.50
 37.20

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

External displacement at 24' draught. 8,908 tons. Tons per inch 34.16
 " " 25' " 9,320 " " 34.33

The vessel has been examined afloat and the Survey has been confined to the examination of hatchways, means of closing the openings etc. No part of the Special Survey has been carried out. The Master proposes to have the necessary repairs and any alterations carried out when the Special Survey is held.

Thetis

Builder's name and yard number *M. Hamilton & Co. Ltd. Glasgow.*

Names of sister ships

Owners *M. G. Embaycor.*

Fee *Per 2,000— 31/5/33.* Received by me

Exp. 30 per



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