

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

Computation of Freeboard for ~~Steamer, Sailing Ship, Tanker~~  
having Prop, bridge and forecastle.

(Type of Superstructures.)

Ship's Name <u>"REALF"</u>	Nationality and Port of Registry <u>Immigran Moss.</u>	Official Number <u>8083</u>	Gross Tonnage <u>alt. 8100</u>	Date of Build <u>1937</u>
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Moulded Dimensions: Length 460'-0" Breadth 59'-6" Depth 34'-7"  
Moulded displacement at moulded draught = 85 per cent. of moulded depth 18530 tons  
Coefficient of fineness for use with Tables .806

Port of Survey Maharr  
Date of Survey Wile building  
Name of Surveyor Admcken  
Particulars of Classification 10091  
Carrying Petroleum in barrels.  
(Contingentated.)

<p>Depth for Freeboard (D)</p> <p>Moulded depth ... .. <u>34.583'</u></p> <p>Stringer plate ... .. <u>6.7' = .056'</u></p> <p>Sheathing on exposed deck <math>T \left( \frac{L-S}{L} \right) =</math></p> <p>Depth for Freeboard (D) = <u>34.639'</u></p>	<p>Depth correction</p> <p>(a) Where D is greater than Table depth (D-Table depth) R = <math>(34.64 - 30.67) \times 3 = +11.91</math></p> <p>(b) Where D is less than Table depth (if allowed) (Table depth-D) R = <u>✓</u></p> <p>If restricted by superstructures <u>✓</u></p>	<p>Round of Beam correction</p> <p>Moulded Breadth (B) <u>59.5</u></p> <p>Standard Round of Beam = <math>\frac{B \times 12}{50} =</math> <u>14.28"</u></p> <p>Ship's Round of Beam = <u>14.57"</u></p> <p>Difference <u>.29</u></p> <p>Restricted to <u>✓</u></p> <p>Correction = <math>\frac{\text{Diff}^*}{4} \times \left( 1 - \frac{S_1}{L} \right) =</math> <math>\frac{.29}{4} \times \frac{603.5}{4} = -.04</math></p>
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## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ... ..	<u>97.02'</u>	<u>97.02</u>	<u>7.75'</u>	<u>-</u>	<u>97.02</u>
" overhang <u>side</u> ... ..	<u>5.0'</u>	<u>2.50</u>			<u>2.50</u>
R.Q.D. enclosed ... ..					
" overhang ... ..					
Bridge enclosed ... ..	<u>37.07'</u>	<u>37.07</u>	<u>7.75'</u>	<u>-</u>	<u>37.07</u>
" overhang aft ... ..					
" overhang forward ... ..	<u>45.79</u>				
Fore enclosed <u>equivalent</u> ... ..	<u>29.75'</u>	<u>45.79</u>	<u>7.5'</u>	<u>-</u>	<u>45.79</u>
Fore overhang ... ..	<u>7.0</u>				
Trunk aft ... ..					
" forward ... ..					
Tonnage opening aft ... ..					
" forward ... ..					
Total ... ..	<u>184.88</u>	<u>182.38</u>			<u>182.38</u>

Standard Height of Superstructure	<u>7.5</u>
" " R.Q.D.	<u>✓</u>
Deduction for complete superstructure	<u>42</u>
Percentage covered $\frac{S}{L} =$	<u>40.19</u>
" " $\frac{S_1}{L} =$	<u>39.65</u>
" " $\frac{E}{L} =$	<u>39.65</u>
Percentage from Table, <u>Line A</u> <u>Tanker</u> <u>30.65</u>	
(corrected for absence of forecastle (if required))	
Percentage from Table, Line B.	<u>✓</u>
(corrected for absence of forecastle (if required))	
Interpolation for bridge less than .2L (if required)	
Deduction = $42 \times 30.65 =$	<u>- 12.87</u>

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ... ..	<u>56.00</u>	<u>1</u>	<u>56.00</u>	<u>43.9"</u>	<u>43.9</u>	<u>1</u>	<u>43.9</u>		
$\frac{1}{8}L$ from A.P. ... ..	<u>24.92</u>	<u>4</u>	<u>99.68</u>	<u>10.3"</u>	<u>10.3</u>	<u>4</u>	<u>41.2</u>		
$\frac{3}{8}L$ " ... ..	<u>6.16</u>	<u>2</u>	<u>12.32</u>	<u>0</u>	<u>-</u>	<u>2</u>	<u>-</u>		
Amidships ... ..	<u>-</u>	<u>4</u>	<u>-</u>	<u>0</u>	<u>-</u>	<u>4</u>	<u>-</u>		
$\frac{5}{8}L$ from F.P. ... ..	<u>12.32</u>	<u>2</u>	<u>24.64</u>	<u>1.3"</u>	<u>1.3</u>	<u>2</u>	<u>2.6</u>		
$\frac{7}{8}L$ " ... ..	<u>49.84</u>	<u>4</u>	<u>199.36</u>	<u>39.8"</u>	<u>39.8</u>	<u>4</u>	<u>159.2</u>		
F.P. ... ..	<u>112.00</u>	<u>1</u>	<u>112.00</u>	<u>92.9"</u>	<u>92.9</u>	<u>1</u>	<u>92.9</u>		
Total ... ..			<u>504.00</u>				<u>339.8</u>		

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 = Tanker.  
" aft of " =

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{164.2}{18} \left( .75 - \frac{200.8}{549.2} \right) = +5.01$

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.

Ft.  
Depth to Freeboard Deck = 34.64  
Summer freeboard = 7.42  
Moulded draught (d) = 27.21

## Deduction for Tropical freeboard and addition for

Winter freeboard =  $\frac{d}{4}$  inches =  $6.80 = 6\frac{3}{4}$ Addition for Winter North Atlantic Freeboard (if required) =  $4\frac{1}{2} + 6\frac{3}{4} = 11\frac{1}{4}$ 

## Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta = 17183$ 

Tons per inch immersion at summer load water line

 $T = 57.53$ Deduction =  $\frac{\Delta}{40T}$  inches $= 7.47 = 7\frac{1}{2}$ 

See back of report.

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

Correction for coefficient  $\frac{806 + .68}{1.36} = \frac{1.486}{1.36}$ 

	+	-
Depth Correction ... ..	<u>11.91</u>	<u>-</u>
Deduction for superstructures ... ..	<u>-</u>	<u>12.87</u>
Sheer correction ... ..	<u>5.01</u>	<u>-</u>
Round of Beam correction ... ..	<u>-</u>	<u>0.04</u>
Correction for Thickness of Deck amidships ... ..	<u>-</u>	<u>-</u>
Other corrections, scantlings, etc. ... ..	<u>-</u>	<u>-</u>
	<u>16.92</u>	<u>12.91</u>

Summer Freeboard = 88.92SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Steel, Deck:

Tropical Fresh Water Line above Centre of Disc ...	<u>14 1/4" = 36 1/2"</u>
Fresh Water Line " " ...	<u>7 1/2" = 19 0"</u>
Tropical Line " " ...	<u>6 3/4" = 17 1/2"</u>
Winter Line below " " ...	<u>6 3/4" = 17 1/2"</u>
Winter North Atlantic Line " " ...	<u>11 1/4" = 28 6"</u>

Tropical Fresh Water Freeboard ...	<u>7'-5" = 22 1/2"</u>
Fresh Water " " ...	<u>6'-2 3/4" = 19 0"</u>
Tropical " " ...	<u>6'-9 1/2" = 20 1/2"</u>
Winter " " ...	<u>6'-10 1/4" = 20 9"</u>
Winter North Atlantic " " ...	<u>7'-11 3/4" = 24 3/4"</u>
Winter North Atlantic " " ...	<u>8'-4 1/4" = 25 1/2"</u>

JUN 1937



# PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS											
Description of Hatchway	...	...	...	...	...	...	...	...	...	...	...
Dimensions of Hatchway	...	...	...	...	...	...	...	...	...	...	...
COAMINGS	Height above Deck	...	...	...	...	...	...	...	...	...	...
	Thickness	...	...	...	...	...	...	...	...	...	...
	Sides	...	...	...	...	...	...	...	...	...	...
	Ends	...	...	...	...	...	...	...	...	...	...
	Stiffeners	...	...	...	...	...	...	...	...	...	...
HATCH BEAMS	Number	...	...	...	...	...	...	...	...	...	...
	Spacing	...	...	...	...	...	...	...	...	...	...
	Scantling and Sketch	...	...	...	...	...	...	...	...	...	...
	Bearing Surface	...	...	...	...	...	...	...	...	...	...
	...	...	...	...	...	...	...	...	...	...	...
FORE AND AFTERS	Number	...	...	...	...	...	...	...	...	...	...
	Spacing	...	...	...	...	...	...	...	...	...	...
	Unsupported Lengths	...	...	...	...	...	...	...	...	...	...
	Scantling and Sketch	...	...	...	...	...	...	...	...	...	...
	Bearing Surface	...	...	...	...	...	...	...	...	...	...
HATCH COVERS	Material	...	...	...	...	...	...	...	...	...	...
	Thickness	...	...	...	...	...	...	...	...	...	...
	How fitted	...	...	...	...	...	...	...	...	...	...
	Bearing Surface	...	...	...	...	...	...	...	...	...	...
	...	...	...	...	...	...	...	...	...	...	...
Spacing of Cleats	...	...	...	...	...	...	...	...	...	...	...
Number of Tarpaulins	...	...	...	...	...	...	...	...	...	...	...

Particulars of fiddle, funnel and ventilator coamings: *Fiddle openings on top of donkey boiler casing fitted with hinged steel covers. Internal plating 5 mm. thick. Ventilator coamings are efficiently constructed and stayed.*

Particulars of Flush Bunker Scuttles: *✓*

Particulars of Companionways: *Poop space entrance at after end of galley casing. Downways 1600 mm. x 635 mm. Height of sills 460 mm. 48 mm. thick teak doors capable of being manipulated from both sides.*

Particulars of Ventilators in exposed positions on freeboard and superstructure decks: *Poop deck: Diam. 6" to 18". Thickness of coam. 32"-40". Height 30"-36". Gossamer 30" high. (All vent. coamings are electr. welded to deck and are provided with means for closing.)  
Rise. deck: 4" gossamer to cofferdam 36" high.  
Isle. deck: Diam. 6" to 18". Thickness of coam. 32"-40". Height 36". Gossamer 36" high.  
Bridge deck: 3" gossamer 30" high.*

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks: *Poop deck: Gossamer to APT. bottom tanks and cofferdam 30" high.  
Isle. deck: Gossamer to FPT and deep tanks 36" high.*

Particulars of Gangway Cargo and Coaling Ports: *✓*

Particulars of Scuppers and Sanitary Discharge Pipes: *No scuppers below freeboard deck. All discharge pipes from poop deck houses and from poop space are led overboard above 2nd deck and from accommodations on bridge deck above freeboard deck. All discharge ends are fitted with storm valves and overboard drain pipes from poop space are fitted with non-detachable screw plugs at their inner ends.*

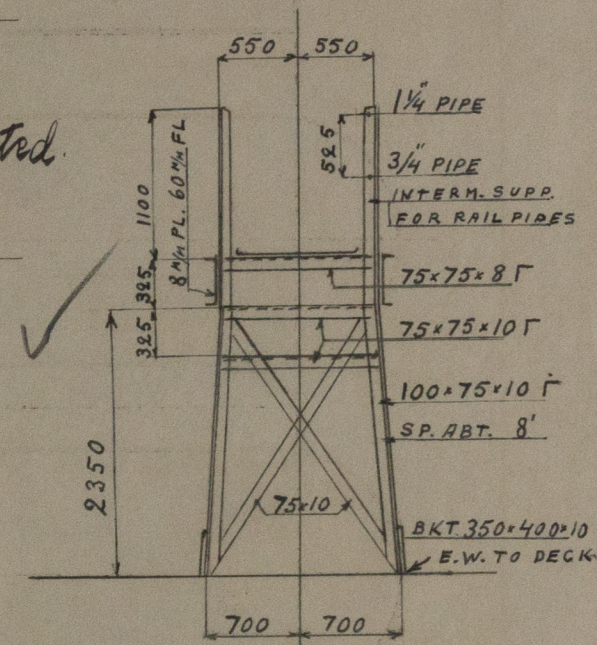
Particulars of Side Scuttles: *✓*

*All side scuttles are fitted with hinged, inside deadlights.*

Particulars of Guard Rails: *✓*

*Upper rail on poop & poop deck 1050 mm. high.  
Bulkheads on bridge deck 1090 " "  
" " " 1150 " "* *Strong & efficiently constructed.*

Particulars of Gangways, Lifelines, etc.: *✓*



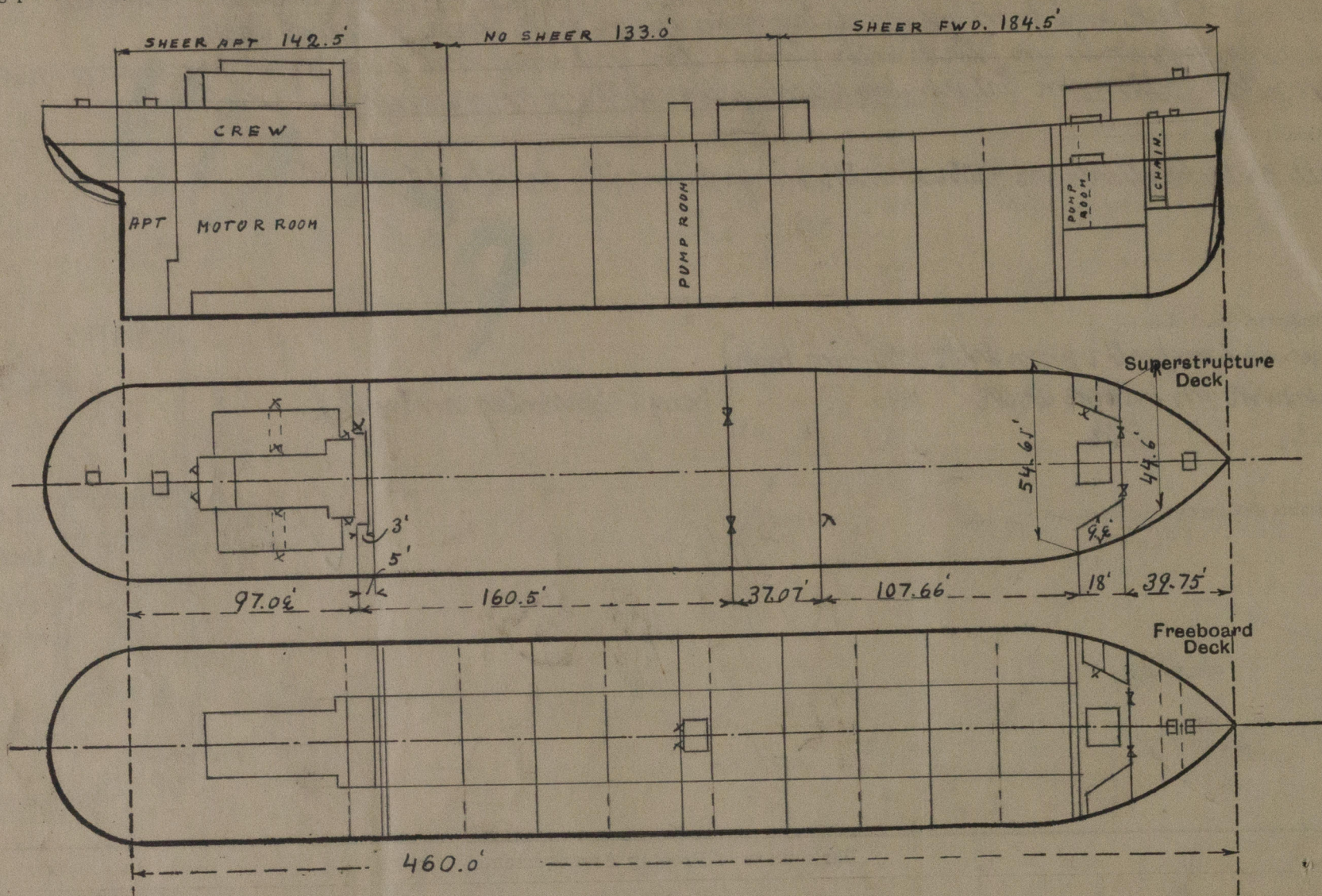
Particulars of Freeing Arrangements.						
	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
After Well	...	...	...	...	...	...
Forward Well	...	...	...	...	...	...
State position of each freeing port (F. and A. position and height above deck edge) { After Well:— 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	90x95x11 F 150x150x12 F	48"	250x40x12.5 F 250x90x11 F	600-900 600	T. long. B. long. T. long. B. long.	1500 x 620	650	7'-9"	✓
Raised Quarter Deck Bulkhead	...	...	...	...	...	...	...	...	...
Bridge, After Bulkhead	90x90x11 F	34"	130x65x8 F	850-965	None	1530 x 935	600	7'-9"	✓
Bridge, Forward Bulkhead	90x90x12 F	48-50"	250x90x11 F	850-965	T. long. B. long. B. long.	1525 x 875	460	7'-9"	✓
Forecastle Bulkhead	75x75x9 F	30"-34"	130x65x8 F	820-980	T. com. to long.	1245 x 940	560	7'-6"	✓
Trunk, Aft	75x75x9 F 90x75x11 F	32"-34"	90x75x9 F	600-660	None	1300 x 680 1440 x 845	620 610	7'-6"	✓
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	Hinged W.T. steel doors capable of being manipulated from both sides.
Raised Quarter Deck Bulkhead	...
Bridge, After Bulkhead	3" shifting boards in channels.
Bridge, Forward Bulkhead	Hinged W.T. steel door capable of being manipulated from both sides.
Forecastle Bulkhead	3" shifting boards in channels.
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	Hinged W.T. steel doors capable of being manipulated from both sides.
Exposed Machinery Casings on Superstructure Decks	Hinged W.T. steel doors capable of being manipulated from both sides.
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	...
Deckhouses on Flush Deck Ships	48 mm. thick teak doors capable of being manipulated 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 shown on the following sketches:—



State any special features in the construction of the ship:— *Longitudinal framing. Bracketless system.*

Displacement in salt water & tons per inch immersion at 27'-0" mld. dight = 17025 tons & 57.46 T/inch.  
 " " " " " " " 27'-3" " " = 17205 " " 57.53 "  
 " " " " " " " 27'-6" " " = 17385 " " 57.60 "

*File.*  

$$\frac{Sideboard \ 2 \times 18 \times 9.17}{54.65} = \frac{39.75 \times 6.04}{45.79} \text{ equivalent}$$

Builder's name and yard number *Kockums Mekanska Verkstads Aktiebolag, Yard No. 194.*

Names of sister ships *M/T "ORION", Kockums M.V. Aktieb. Yard No. 184*

Owners *Mrs Asplund, Moss.*

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