

Lloyd's Register of Shipping.
SURVEYS FOR FREEBOARD.

27 JAN 1937

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having Poop, Bridge, Forecastle

Port of Survey Rotterdam

(Type of Superstructures.)

Date of Survey Building

Ship's Name
M.V. "ENSIS"Nationality and Port of
Registry
British
LondonOfficial Number
165391Gross Tonnage
not yet
availableDate of Build
1936/37

Name of Surveyor E. Vuyk

Moulded Dimensions: Length 425.0 ✓ Breadth 54.25 ✓ Depth 31.0 ✓
Moulded displacement at moulded draught = 85 per cent. of moulded depth 13330 M³ 13450 tons
Coefficient of fineness for use with Tables .445Particulars of Classification + 100 A 1
Carrying petroleum in bulk
(Class contemplated)

Depth for Freeboard (D)

Moulded depth ✓ 31.0

Stringer plate ✓ .06

Sheathing on exposed deck

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

Depth for Freeboard (D) = ✓ 31.06

Depth correction

(a) Where D is greater than Table depth

$$(D - \text{Table depth}) R =$$
$$(31.06 - 28.33) \times 3 = + 8.19$$
$$2.73$$

(b) Where D is less than Table depth (if allowed)

$$(\text{Table depth} - D) R = \checkmark$$

If restricted by superstructures ✓

Round of Beam correction

Moulded Breadth (B) 54.25

$$\text{Standard Round of Beam} = \frac{B \times 12}{50} = 13.02$$

$$\text{Ship's Round of Beam} = 1.12' = 13.44$$

$$\text{Difference} \text{ excess} = .42$$

Restricted to

$$\text{Correction} = \frac{\text{Diff}^a}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.42}{4} \times .5623 = -.06$$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poep enclosed <i>equiv. sketch</i>	89.28	89.28	7' 8 1/8"	✓	89.28
" overhang ...					
R.Q.D. enclosed					
" overhang	40.83	40.83	7' 4 1/8"	✓	40.83
Bridge enclosed <i>sketch</i>	39' 5"	40.83	7' 5 3/4"	✓	40.83
" overhang aft					
" overhang forward	55.91	55.91	7' 8 1/8"	✓	55.91
File enclosed	48.5	55.91	7' 8 1/8"	✓	55.91
" overhang					
Trunk aft					
" forward					
Tonnage opening aft					
" forward					
Total	186.02	186.02			185.91

Standard Height of Superstructure 7.50

" " R.Q.D. ✓

Deduction for complete superstructure 42.00

$$\text{Percentage covered } \frac{S}{L} = 43.44$$

$$\frac{S_1}{L} = 43.44$$

$$\frac{E}{L} = 43.44$$

Percentage from Table, Line A Tanker. 34.44
(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) ✓

$$\text{Deduction} = 42.00 \times .3444 = 14.59$$

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P. ...	52.50	1	52.50	55.63	55.63	1	55.63
1/8 L from A.P. ...	23.36	4	93.44	22.75	22.75	4	91.00
L " ...	5.445	2	11.55	6.25	6.25	2	12.50
Amidships ...	-	4	-	-	-	4	-
3/8 L from F.P. ...	11.55	2	23.10	11.75	11.75	2	23.50
5/8 L " ...	46.42	4	186.88	47.13	47.13	4	188.52
F.P. ...	105.00	1	105.00	108.00	108.00	1	108.00
Total ...			472.44				479.15

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{6.68}{18} (.75 - .2188) = -.20$$

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. 31.06

Summer freeboard = 5.56

Moulded draught (d) = 25.50

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = 6.37 = 6 3/8"

Addition for Winter North Atlantic Freeboard (if required) = 6.37 + 4.25 = 10.62 = 10 1/2"

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$$\Delta = 12987 \text{ 13104 tons}$$

Tons per *cm* immersion at summer load water line

$$T = 18.75 \text{ 44.64}$$

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

$$= 6.88 = 6 7/8"$$

TABULAR FREEBOARD corrected for Flush Deck (if required)

$$\text{Correction for coefficient } \frac{.445 + .68}{1.36} = \frac{1.455}{1.36}$$

Depth Correction 8.19

Deduction for superstructures 14.59

Sheer correction20

Round of Beam correction06

Correction for Thickness of Deck amidships -

Other corrections, scantlings, etc. -

Summer Freeboard = 66.49

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

Tropical Fresh Water Line above Centre of Disc ...	13 1/4"
Fresh Water Line " " ...	7"
Tropical Line " " ...	6 1/4"
Winter Line below " " ...	6 1/4"
Winter North Atlantic Line " " ...	10 1/2"

Tropical Fresh Water Freeboard ...

Fresh Water " " ...

Tropical " " ...

Winter " " ...

Winter North Atlantic " " ...

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS.									
Description of Hatchway			Hatchway to forewell or forecabin deck.		Oil tight hatches on freeboard deck.				
Dimensions of Hatchway			8'0" x 10'0"		centre tanks.		Wing tanks.		
COAMINGS	Height above Deck	...	30" ✓		4'0" x 3'0" ✓		4'0" x 3'0" ✓		
	Thickness	Sides	.44		coaming		coaming		
		Ends	.44		33" x .44" ✓		33" x .44" ✓		
	Stiffeners	...	none						
	Brackets, Stays	...	none ✓						
HATCH BEAMS	Number	...	1		Forewell		Forewell		
	Spacing	...	hatchway		4 hatches		8 hatches		
	Scantling and Sketch	...	hatched in between fore dk and foreboard dk.		Afterswell		Afterswell		
	Bearing Surface	...			4 hatches. ✓		8 hatches. ✓		
FORE AND AFTERS	Number	...	1						
	Spacing	...	small escape						
	Unsupported Lengths	...	hatch fitted						
	Scantling* and Sketch	...	on steel hatch cover 2'0" x 2'0"						
	Bearing Surface	...	Coaming 6x3x.36 BA steel screw down cover .50 in thickness ✓						
HATCH COVERS	Material	...	steel		steel		steel		
	Thickness	...	.50" ✓		.50" ✓		.50" ✓		
	How fitted	...	efficiently stiffened		efficiently stiffened and		hinged. ✓		
	Bearing Surface	...	with 4 angles 6x3x.40 ✓						
Spacing of Cleats	...	...	screw down screw bolts		toggles 1" in dia.				
Number of Tarpaulins	...	...	or toggles 1" in dia. spaced 15" apart ✓		spaced 14" apart. ✓				
*Are wood fore and afters steel shod at all bearing surfaces? none fitted ✓ Are battens and wedges efficient and in good condition? " " Are tarpaulins in good condition and in accordance with rule requirements? " " Are lashings provided in accordance with rule requirements? " "									

Particulars of fiddle, funnel and ventilator coamings:— Fiddle casing, funnel and ventilators in efficient condition
 Motor room skylight all steel with steel flaps strongly constructed. — ✓
 gratings on fiddle casing fitted with strong steel hinged covers. — ✓

Particulars of Flush Bunker Scuttles:— none fitted ✓

Particulars of Companionways:— One steel companionway on freeboard deck in forewell 8'5" x 13'10" x 7'6" high leading to forward pump room with steel hinged watertight door on after side 4'7" x 2'6" sill 19" capable of being operated from both sides. ✓
 One steel companionway on freeboard deck in afterswell being an exact replica of the one in forewell. — ✓

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

on forecabin deck	1 vent	12" dia.	coaming	36" x .36"	led to forepeak	all ventilators constructed in accordance with the Rules and coamings closed with wood plugs and canvass covers. — ✓
	6 vents	10" "	"	36" x .32"	" enclosed forecabin	
	10 vents	9" "	"	36" x .30"	" " "	
on bridge deck	8 vents	6" "	"	30" x .28"	" " " bridge space	
on poop deck	3 vents	12" "	"	30" x .36"	" " " poop space	
	2 vents	10" "	"	30" x .32"	" " "	
	4 vents	6" "	"	30" x .28"	" " "	

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

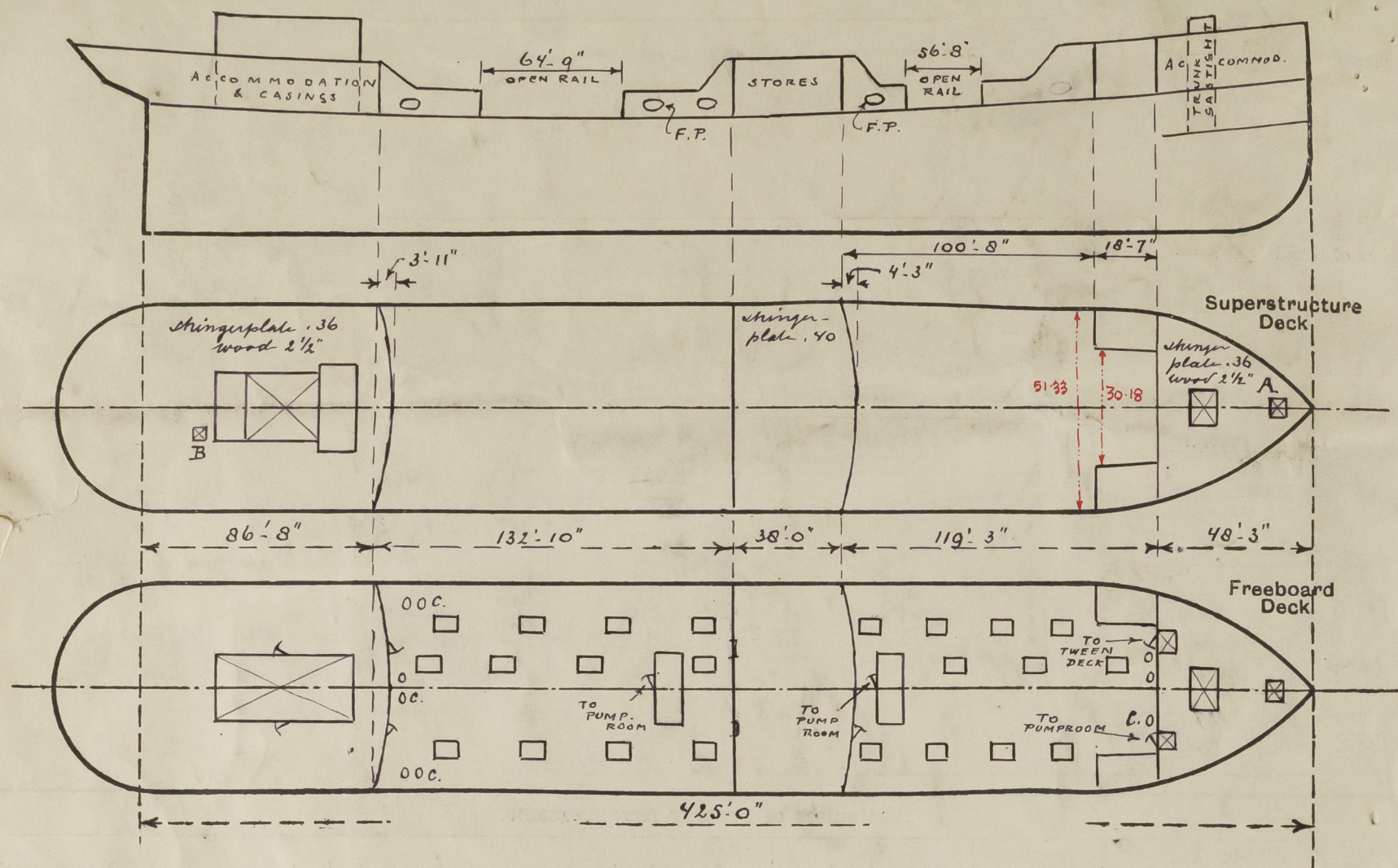
on forecabin deck	7 air pipes	3" dia. x 36" high	from forepeak and deep tank	all air pipes are fitted with gauze and canvass covers are provided. — ✓
on poop deck	5 "	5" dia. x 30" high	from double bottom tanks.	
	2 "	5 1/2" dia. x 30" high	from afterpeak tank. ✓	

air pipes from centre and wing tanks are led up foremast and mainmast. ✓

Particulars of Gangway Cargo and Coaling Ports:— none fitted ✓



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:—



Particulars have been taken whilst the vessel was under construction.

Poof. $3.92 \times \frac{2}{3} = 2.61$
 $\frac{86.67}{89.28}$

Equiv. enclosed length = 89.28

Bridge $4.25 \times \frac{2}{3} = 2.83$

Equiv. enclosed length $\frac{38.00}{40.83}$

Forecastle $\frac{30.18 \times 18.58}{51.33} = \frac{66.83}{10.92}$

Equiv. enclosed length = 55.91

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

Small hatches on forecastle deck A 2'-6" x 2'-6" covering 9" bulbar angle closed with steel covers fastened with toggles ✓
 on poop deck B 2'-4" x 2'-4" covering 9" bulbar angle closed with steel covers fastened with toggles ✓
 Cofferdam hatches on freeboard deck C 2'-0" x 1'-6" covering 10" channel doors closed with steel bolted covers 3/4" bolts spaced 3 1/4" ✓

Sister Vessel Rott. Drogdoh No. Yard number 193 M.V. "ETREMA"
 except the steel sidehouses abt the forecastle bulkhead.

Builder's name and yard number Rotterdamse Drogdoh Maatschappij Yard number 195.

Names of sister ships M.V. Eulima Wilton's Yard number 654 Rotterdam Report No. 25170.

M.V. Erema Rott. Drogdoh " 193 " " No. 24435.

Owners Anglo Saxon Petroleum Co. Ltd.

Fee £ 204.- will be Received by me *[Signature]* Application form attached to this report.



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