

171 MAR 1950

Index No. 39694
(For London Office only.)

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD. MOD RPT NO. 19007.
(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name "LUMEN"	Official Number 183783.	Nationality and Port of Registry BRITISH. LIVERPOOL.	Gross Tonnage 10146.	Date of Build 7/50.	Port of Survey MIDDLESBROUGH.
Moulded Dimensions: Length 480'-11" Breadth 67'-0" Depth 36'-34" (TO CENTRE LINE OF RUDDER STOCK)					Date of Survey WHILST BUILDING
Moulded displacement at moulded draught = 85 per cent. of moulded depth 21,750 tons					Surveyor's Signature J.D. Rufus.
Coefficient of fineness for use with Tables -766.					Particulars of Classification + 100 A.1. (CARRYING PETROLEUM IN BULK) (CONTEMPLATED)

DEPTH FOR FREEBOARD (D). Moulded depth ... 36'-31 1/2" ... 36-31 Stringer plate ... 49 ... 07 Sheathing on exposed deck — $T \left(\frac{L-S}{L} \right) =$ ✓ Depth for Freeboard (D) = 36-38	DEPTH CORRECTION. (a) Where D is greater than Table depth (D—Table depth) R = $(36-38 - 32-06) 3 = +12-96$ $4-32$ (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) 67'-00" ✓ Standard Round of Beam = $\frac{B \times 12}{50} =$ 16-08" ✓ Ship's Round of Beam = 16-3/4 ✓ Difference 0-67 ✓ Restricted to ✓ Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) =$ $\frac{67}{4} \times 5705 =$ -10" ✓
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DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed <i>equiv.</i>	103-94 ✓	103-94 ✓	8'-0" ✓	✓	103-94 ✓	Standard Height of Superstructure 7-5' ✓
" overhang ...	—	—	—	—	—	" " R.Q.D. ✓
R.Q.D. enclosed ...	—	—	—	—	—	Deduction for complete superstructure 42-00 ✓
" overhang ...	—	—	—	—	—	Percentage covered $\frac{S}{L} =$ 43-26 ✓
Bridge enclosed <i>equiv.</i>	47-33 ✓	47-33 ✓	8'-0" ✓	✓	47-33 ✓	" " $\frac{S_1}{L} =$ 42-95 ✓
" overhang aft ...	6-00 ✓	4-50 ✓	—	—	4-50 ✓	" " $\frac{E}{L} =$ 33-95 ✓
" overhang forward ...	—	—	—	—	—	Percentage from Table, Line ± TANKER , 33-95 ✓ (corrected for absence of forecastle (if required))
Fore enclosed ...	50-79 ✓	50-79 ✓	7-5' ✓	✓	50-79 ✓	Percentage from Table, Line B. ✓ (corrected for absence of forecastle (if required))
" overhang ...	—	—	—	—	—	Interpolation for bridge less than .2L (if required) ✓
Trunk aft ...	—	—	—	—	—	Deduction = 42-00 × 33-95 = -14-26 ✓
" forward ...	—	—	—	—	—	
Tonnage opening aft ...	—	—	—	—	—	
" " forward ...	—	—	—	—	—	
Total ...	208-06 ✓	206-56 ✓	—	—	206-56 ✓	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P. ...	58-09 ✓	1	✓	58-09 ✓	44-562 ✓	44-56 ✓	1	✓	44-56 ✓	Mean actual sheer aft
1/2 L from A.P. ...	25-85 ✓	4	✓	103-40 ✓	12-375 ✓	12-375 ✓	4	✓	49-50 ✓	Mean standard sheer aft =
1/2 L " ...	6-39 ✓	2	✓	12-78 ✓	—	✓	2	✓	—	Mean actual sheer forward
Amidships ...	✓	4	✓	—	—	✓	4	✓	—	Mean standard sheer forward =
1/2 L from F.P. ...	12-78 ✓	2	✓	25-56 ✓	—	✓	2	✓	—	Length of enclosed superstructure forward of amidships =
1/2 L " ...	51-70 ✓	4	✓	206-80 ✓	34-125 ✓	37-125 ✓	4	✓	148-50 ✓	" " aft of " =
F.P. ...	116-18 ✓	1	✓	116-18 ✓	104-00 ✓	104-00 ✓	1	✓	104-00 ✓	
Total ...	—	—	—	522-81 ✓	—	—	—	—	346-56 ✓	

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - S}{2L} \right) = \frac{176-25}{18} \left(\frac{.75 - 2163}{18} \right) =$ **+5-23** ✓
 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 = **36-38** ✓
 Summer freeboard = **7-67** ✓
 Moulded draught (d) = **28-71** ✓

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = **7-18 = 7 1/4"** ✓

Addition for Winter North Atlantic Freeboard (if required) = **7-18 + 4-81 = 11-99 = 12"** ✓

Deduction for Fresh Water.

Displacement in salt water at summer load water line
 $\Delta =$ **20146** ✓
 Tons per inch immersion at summer load water line
 $T =$ **65-87** ✓

Deduction = $\frac{\Delta}{40 T}$ inches
 $= \frac{20146}{40 \times 65-87} =$ **7-65 = 7 3/4"** ✓

$\Delta @ 30-0 = 21100$ T.P.I. = **66-34**
 $\Delta @ 27-0 = 18715$ T.P.I. = **65-16**

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{766 + 68}{1-36} = \frac{1-446}{1-36} =$ **82-92** ✓
88-16 ✓

Depth Correction ... **12-96** ✓
 Deduction for superstructures ... **14-26** ✓
 Sheer correction ... **5-23** ✓
 Round of Beam correction ... **10** ✓
 Correction for Thickness of Deck amidships ...
 Other corrections, scantlings, etc. ...

18-19 **14-36** **+3-83** ✓

Summer Freeboard = **91-99** ✓

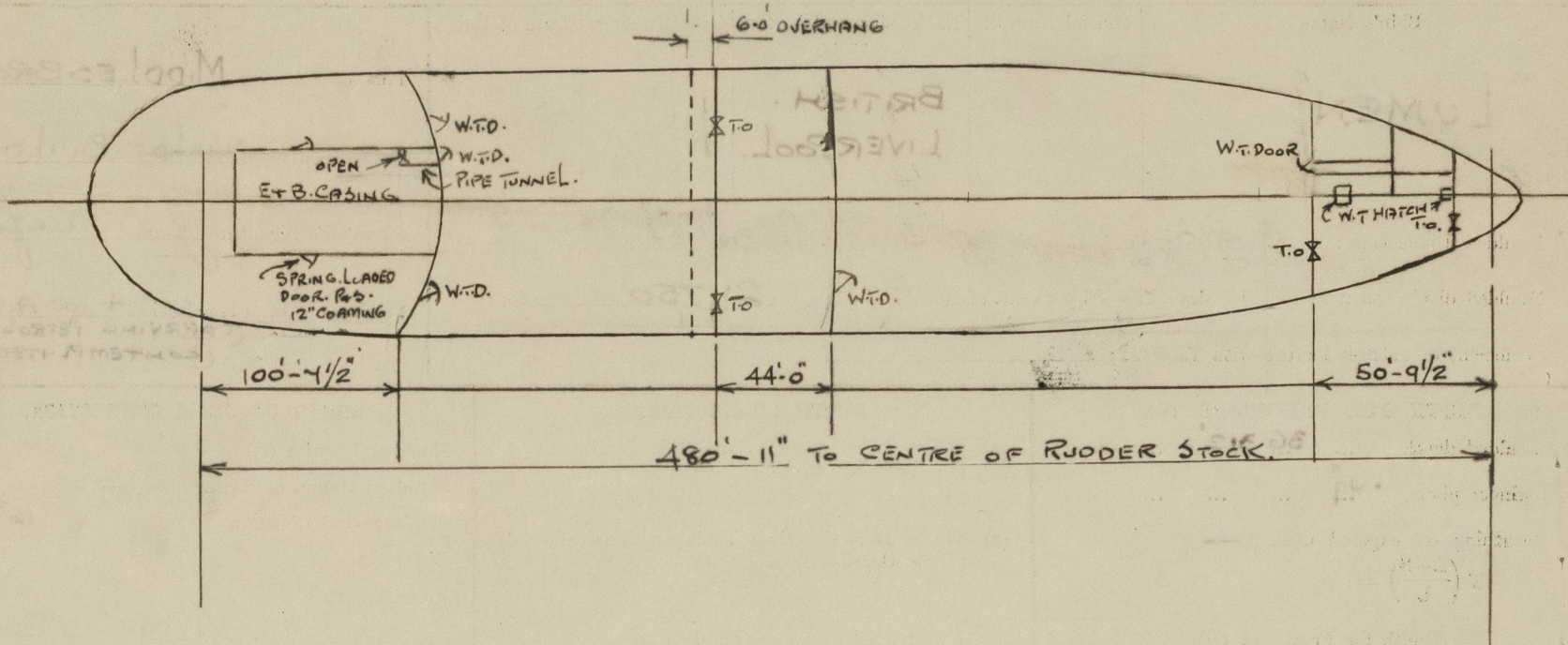
SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck:—

Tropical Fresh Water Line above Centre of Disc ... **15"** ✓
 Fresh Water Line " " ... **7 3/4"** ✓
 Tropical Line " " ... **7 1/4"** ✓
 Winter Line below " " ... **7 1/4"** ✓
 Winter North Atlantic Line " " ... **12"** ✓

Tropical Fresh Water Freeboard **6'-5"** ✓
 Fresh Water " **7'-0 1/4"** ✓
 Tropical " **7'-0 3/4"** ✓
 Winter " **8'-3 1/4"** ✓
 Winter North Atlantic " **8'-8"** ✓

Lumen.

A new form should be prepared if any alterations that affect the freeboard have been made. If no such alterations have been made, the Surveyor should endorse the form on this side with his signature and the date.



Poof. Front. Plating .44. Stiffeners $10 \times 3\frac{1}{2} \times 50$ B.A. @ $2'-9"$ spacing Rugged at top welded at keel.

Openings 2 @ $5'-3 \times 2'-6$ W.T. Door. 18" coaming. 1 @ $4'-6 \times 2'-0$ W.T. Door. 24" coaming

Bridge Front:- Plating .44 Stiffeners $10 \times 3\frac{1}{2} \times 42$ B.A. @ $2'-6"$ spacing Welded at head & keel.

Openings. 1 @ $5'-3 \times 2'-6$ W.T. Door. 18" coaming.

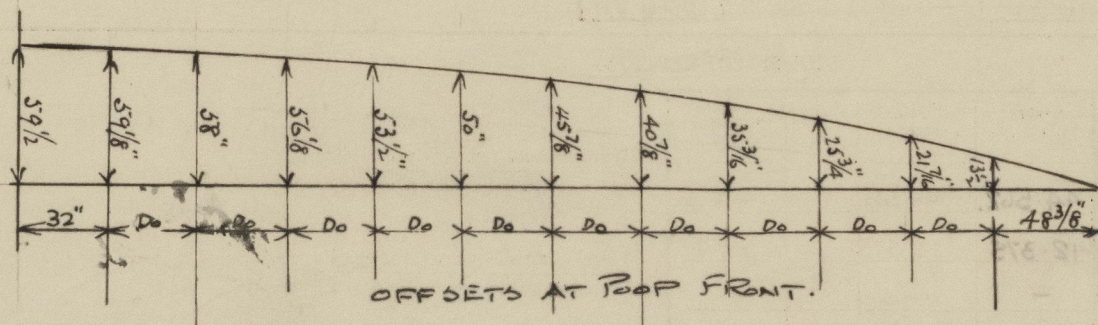
Bridge End:- Plating .30 Stiffeners $4 \times 3 \times 40$ T.T.P.Ls. @ $2'-9"$ spacing (max) ✓

Openings = 2 @ $4'-1 \times 3'-1$ ✓ Steel plates with hooked bolts. coaming 24" ✓

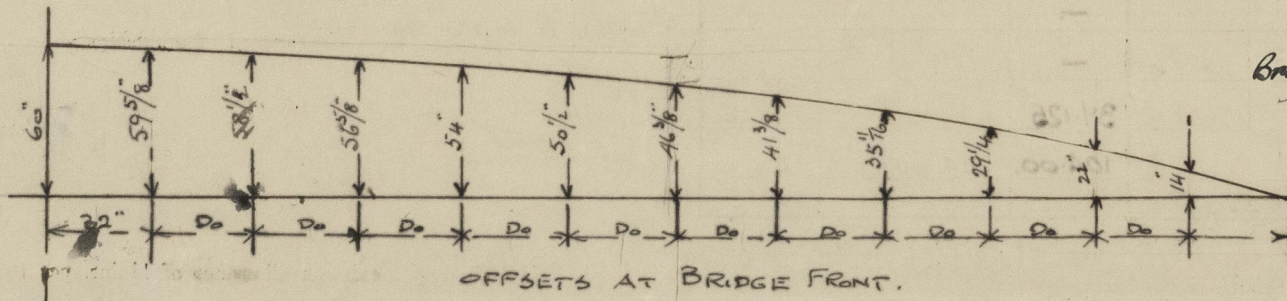
Forecastle End Plating .30 Stiffeners $4 \times 3 \times 32$ Ls. spacing 33" max ✓

Openings 1 @ $5'-1 \times 4'-1$ Steel plate with hooked bolts. coaming 23" 1 @ $5'-3 \times 3'-0$

W.T. Door coaming 18" ✓



$$\begin{aligned} \text{Poof length at side} &= 100.63 \checkmark \\ \frac{2}{3} \times 4.96 &= \frac{3.31}{103.94} \checkmark \end{aligned}$$



$$\begin{aligned} \text{Bridge length at side} &= 44.00 \checkmark \\ \frac{2}{3} \times 5 &= \frac{3.33}{47.33} \checkmark \end{aligned}$$

Trade of ship Ocean Going Tanker.

Names of sister ships _____

Builder's name and yard number Smiths Dock Co Ltd South Bank, on Tees. No 1197.

Owners H. E. Moss & Co. (Tankers Ltd)

Fee £ With F.E.



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