

LLOYD'S REGISTER OF SHIPPING
UNITED WITH THE BRITISH CORPORATION REGISTER
SURVEYS FOR FREEBOARD
(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER)

Received _____
Index No. **27 MAY 1960**
Govt. Copy _____
Owners C11 _____

Ship's Name	Official Number	Nationality and Port of Registry	Gross Tonnage	Date of Build
"FRATERNITY"		Liberian Monrovia	17,597 Tons	1960

Port of Survey Rijeka
Date of Survey whilst Building

Moulded Dimensions: Length 180.0 m Breadth 25.0 m Depth 13.077 m
Freeboard Length 180.0 m to cr of Rudder Stock
Moulded displacement at moulded draught = 85 per cent. of moulded depth 38537 metric tons
(excluding bossing)
Coefficient of fineness for use with Tables 0.752

Surveyor's Signature [Signature]
Particulars of Classification + 100A1 Oil tanker
Class contemplated

DEPTH FOR FREEBOARD (D).

Moulded depth ... 13.077 mm
Stringer plate ... 26
Wood Sheathing on exposed deck
 $T \left(\frac{L-S}{L} \right) =$
Depth for Freeboard (D) = 13.103

DEPTH CORRECTION.

(a) Where D is greater than Table depth
(D - Table depth) R = 833(13.103 - 12.00)30 = + 276 mm
(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) 25.00 m
Standard Round of Beam = $\frac{B \times 12}{50} =$ See 500 mm sketch
Ship's Round of Beam = 480
Difference 20 mm
Restricted to
Correction = $\frac{\text{Diff}^{\circ}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{20}{4} \times 0.6435 = + 3.2175$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed <u>Equis...</u>	<u>39.977</u>	<u>39.977</u>	<u>2600</u>		<u>39.977</u>
" overhang ...					
R.Q.D. enclosed ...					
" overhang ...					
Bridge enclosed ...					
" overhang aft ...					
" overhang forward ...					
F'cle enclosed ...	<u>24.185</u>	<u>24.185</u>	<u>2852</u>		<u>24.185</u>
" overhang ...					
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" " forward ...					
Total ...	<u>64.162</u>	<u>64.162</u>			<u>64.162</u>

Standard Height of Superstructure 2.290 m

" " R.Q.D. _____

Deduction for complete superstructure 1067 mm

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

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

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

Percentage from Table, Line A. Tanker 26.65

(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)

Deduction = 1067 mm x 0.2665 = 284 mm

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	<u>1753</u>	1		<u>1753</u>	<u>417</u>	<u>1368</u>	1		<u>1368</u>
$\frac{1}{2}$ L from A.P. ...	<u>779</u>	4		<u>3116</u>	<u>25</u>	<u>99</u>	4		<u>396</u>
$\frac{2}{3}$ L " ...	<u>175</u>	2		<u>390</u>	<u>0</u>	<u>0</u>	2		<u>0</u>
Amidships ...	<u>0</u>	4		<u>0</u>	<u>0</u>	<u>0</u>	4		<u>0</u>
$\frac{2}{3}$ L from F.P. ...	<u>390</u>	2		<u>780</u>	<u>0</u>	<u>0</u>	2		<u>0</u>
$\frac{1}{2}$ L " ...	<u>1558</u>	4		<u>6232</u>	<u>86</u>	<u>86</u>	4		<u>344</u>
F.P. ...	<u>3507</u>	1		<u>3507</u>	<u>488</u>	<u>488</u>	1		<u>488</u>
Total ...				<u>15778</u>					<u>2596</u>

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{15778}{18} \left(.75 - 0.1783 \right) = 419 \text{ mm}$
If limited on account of midship superstructure.

Mean actual sheer aft =
Mean standard sheer aft =

Mean actual sheer forward =
Mean standard sheer forward =

Length of enclosed superstructure forward of amidships =

" " aft of " = } Deficient sheers.

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = 42.97 Ft.
Summer freeboard = 10.71
Moulded draught (d) = 32.26
Keel allowance =
Extreme draught =

Deduction for Tropical freeboard and addition for =

Winter freeboard = $\frac{d}{4}$ inches = 8.07 = 8"

Addition for Winter North Atlantic Freeboard (if required) = 8.07 + 5.91 = 13.98 = 14"

Deduction for Fresh Water.

Displacement in salt water at summer load water line
 $\Delta =$ 33,668
Tons per inch immersion at summer load water line
T = 38.44

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

DCm = 219 mm = 8 1/2"

9.0 30510 37.69
9.5 32400 38.15
10.0 34310 38.59

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient 0.752 + 0.68 = 1.432
1.36

Depth Correction ... 276
Deduction for superstructures ... 284
Sheer correction ... 419
Round of Beam correction ... 3
Correction for Thickness of Deck amidships ...
Other corrections, scantlings, etc. ...

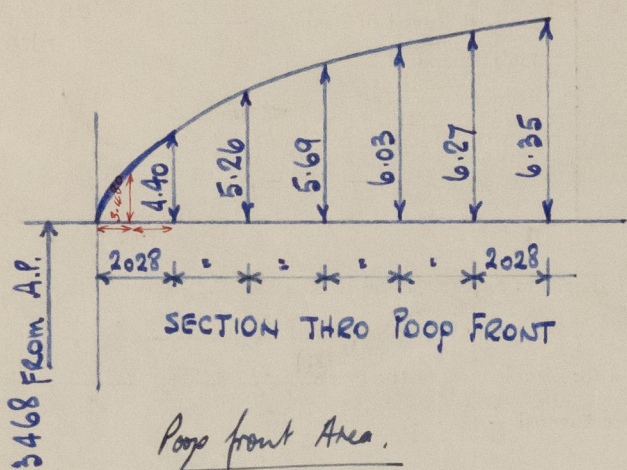
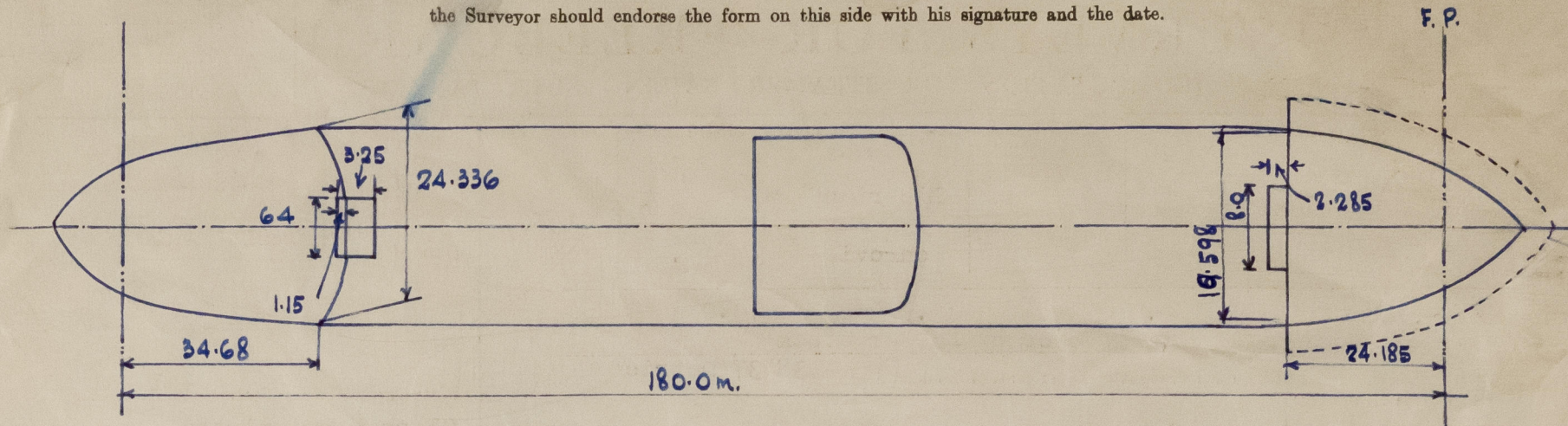
Summer Freeboard = 3267 mm = 128.62"

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

Tropical Fresh Water Line above Centre of Disc 16 1/2"
Fresh Water Line " 8 1/2"
Tropical Line " 8"
Winter Line below " 8"
Winter North Atlantic Line " 14"

Tropical Fresh Water Freeboard 9' 0 1/2"
Fresh Water " 10' 0 1/2"
Tropical " 10' 0 1/2"
Winter " 11' 0 1/2"
Winter North Atlantic " 11' 0 1/2"

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.



POOP front Area.

Pt. I.	6350	1	6350
	6270	3	18810
	6030	3	18090
	5690	1	5690

$$48.940 \times 2.028 \times \frac{3}{8} = 37.219$$

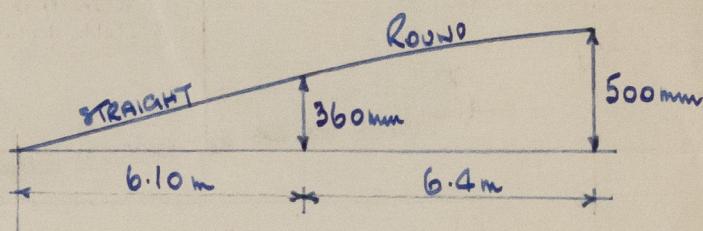
Pt. II.	5.690	1	5690
	5.260	4	21040
	4.400	1/2	6600
	3.480	2	6960
	0.	1/2	0

$$40.290 \times \frac{1}{3} \times 2.028 = 27.236$$

64.455 m².

$$\text{Equiv length of front} = \frac{64.455}{24.336} \times 2 = 5.297 \text{ m}$$

Length of loop at side	34.680
Loop front	5.297
Equiv.	39.977



CAMBER

$$\begin{aligned} \text{Area under curve} &= \left(\frac{0.360 \times 6.1}{2} \right) + \left(6.40 \times 0.360 \right) + \left(\frac{2}{3} \times 0.140 \times 6.40 \right) \\ &= (1.098 + 2.304 + 0.597) \\ &= 3.999 \text{ m}^2. \end{aligned}$$

$$\text{Equiv. Camber} = \frac{3.999}{12.50} \times \frac{3}{2} = 480 \text{ mm}$$

After shears

	Area	%
Main deck shear	417	25
Poop deck shear	523	66
Excess Poop ht.	428 $\left(\frac{428 \times 4.68}{34.68} \right)$	8
	1368	99

Trade of ship International Tanker

Names of sister ships "Petar Zoranic"

Builder's name and yard number Brodogradiliste 3. Maj-Rijeka, Yard No. 460

Owners G. Lemos & Co. London

Fee £ : :

List of plans forwarded for reference. (See "Instructions to Surveyors, Part 4, 1950," paragraph 11.)



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Foundation