

LLOYD'S REGISTER OF SHIPPING

UNITED WITH THE BRITISH CORPORATION REGISTER

SURVEYS FOR FREEBOARD

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER)

Received 8 JUN 1956

Index No.

Govt. Copy

Owners C11

Ship's Name "MOBIL BRILLIANT"	Official Number 2445 - 50	Nationality and Port of Registry PANAMA PANAMA R.P.	Gross Tonnage 17,598	Date of Build 1949	Port of Survey PALERMO.
Moulded Dimensions: Length 600 ft Breadth 82 ft 6 ins Depth 42 ft 6 ins.					Date of Survey 30th March, 1956 & subsequently.
Freeboard Length 600 ft					Surveyor's Signature Lloyd's Register.
Moulded displacement at moulded draught = 85 per cent. of moulded depth 39590 tons					Particulars of Classification +100 A1
Coefficient of fineness for use with Tables .773					

DEPTH FOR FREEBOARD (D). Moulded depth ... 42.5 Stringer plate 1.42"12 Wood Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ - Depth for Freeboard (D) = 42.62	DEPTH CORRECTION. (a) Where D is greater than Table depth (D-Table depth) R = 7.86" $(42.62 - 40.00) 3 = 2.62$ (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) 82.5 Standard Round of Beam = $\frac{B \times 12}{50} =$ 19.8 Ship's Round of Beam = 20.0 Difference 0.2 Restricted to Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{0.2}{4} \times .5705 = .03$
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DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...	133.39 129.25	133.39	8.5'-10.5'	✓	133.39 133.77
" overhang ...	-	-	-	-	-
R.Q.D. enclosed ...	-	-	-	-	-
" overhang ...	47.07 38.66	47.07	8.5'	✓	47.07 45.85
Bridge enclosed ...	2.5 76.18	-	-	-	2.5 76.18
" overhang forward ...	81.75 2.15	76.18	8.5'-14.08'	✓	81.75 1.08
F'cle enclosed ...	-	-	-	-	-
" overhang ...	-	-	-	-	-
Trunk aft ...	-	-	-	-	-
" forward ...	-	-	-	-	-
Tonnage opening aft ...	-	-	-	-	-
" " forward ...	-	-	-	-	-
Total ...	258.79	257.72			257.72

Standard Height of Superstructure **7.50**

" " R.Q.D. **✓**

Deduction for complete superstructure **42.00**

Percentage covered $\frac{S}{L} =$ **43.13**

" " $\frac{S_1}{L} =$ **42.95**

Percentage from Table, Line A. Tanker **33.95**
(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 = **42.00 x .3395 = 14.26**

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	70.00	1	70.00	14	50.00	✓	1	50.00	50.00
1/4 L from A.P. ...	31.35	4	125.40	2	3.84	✓	4	15.36	15.36
1/2 L " ...	7.70	2	15.40	0	0	✓	2	0	0
Amidships ...	0	4	0	0	0	✓	4	0	0
3/4 L from F.P. ...	15.40	2	20.80	0.5	.50	✓	2	1.00	1.00
1/4 L " ...	62.70	4	250.80	4.3	4.30	✓	4	17.20	17.20
F.P. ...	140.00	1	140.00	20	20.00	✓	1	20.00	20.00
Total ...			632.40					103.56	

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{528.84}{18} (.75 - .2157) = +15.70$

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 " =

Tanker

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = **42.62**
 Summer freeboard = **10.42**
 Moulded draught (d) = **32.20**
 Keel allowance = **-**
 Extreme draught = **-**

Deduction for Tropical freeboard and addition for =

Winter freeboard = $\frac{d}{4}$ inches = **8.05" = 204 mm**Addition for Winter North Atlantic Freeboard (if required) = **8.05 + 6 = 14.05" = 357 mm**

Deduction for Fresh Water.

Displacement in salt water at summer load water line
 $\Delta =$ **35175**
 Tons per inch immersion at summer load water line
 $T =$ **98.25**

Deduction = $\frac{\Delta}{40 T}$ inches
 = **8.95"**
 = **227 mm**

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient **.773 + .68 = 1.453 / 1.36 = 108.40**

Depth Correction ... **7.86** -
 Deduction for superstructures ... **14.26** -
 Sheer correction ... **15.70** -
 Round of Beam correction ... **.03** -
 Correction for Thickness of Deck amidships ... **-** -
 Other corrections, scantlings, etc. ... **-** -

23.56 14.29 + 9.27

Summer Freeboard = **125.08" = 10'-5" = 3175 mm**

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

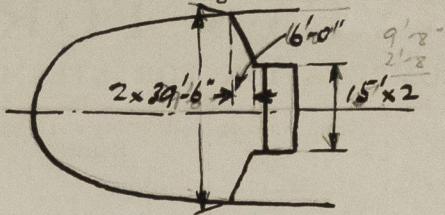
A.B. freeboard re-assigned

Tropical Fresh Water Line above Centre of Disc ... **432 mm**
 Fresh Water Line " " ... **229**
 Tropical Line " " ... **203**
 Winter Line below " " ... **203**
 Winter North Atlantic Line " " ... **356**

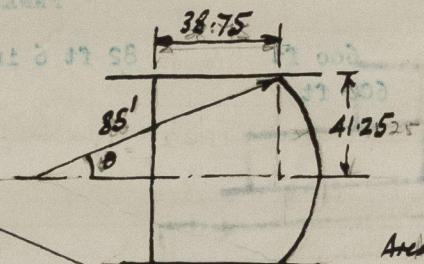
Tropical Fresh Water Freeboard ... **2730**
 Fresh Water " " ... **2433**
 Tropical " " ... **2459**
 Winter " " ... **3365**
 Winter North Atlantic " " ... **3518**

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
 Equiv. length = $129.25 + \frac{39.5 + 15}{2} \times 6 = 133.399$



Bridge
 Equiv. length = $38.75 + 38.32 = 87.07$



$\sqrt{85^2 - 41.25^2} = 74.32'$

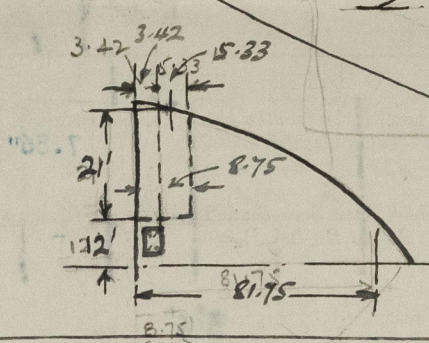
$\sin \theta = \frac{41.25}{85} = .4959$
 $\theta = 29.75^\circ$
 $2\theta = 59.50^\circ$

Area of Sector = $\pi \times 85^2 \times \frac{59.5}{360} = 3752$

Area of Segment = $3752 - 2 \times \frac{1}{2} \times 41.25 \times 74.32 = 686$

Equiv. length = $\frac{686}{82.5} = 8.32'$

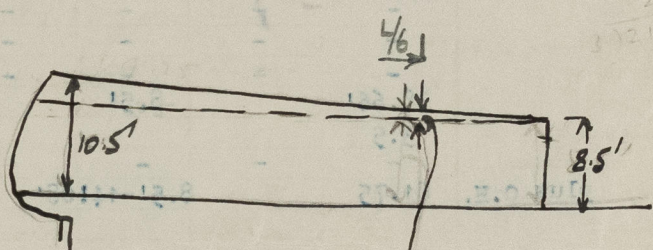
Forecastle
 Equiv. length = $81.75 - \frac{21 \times 8.75}{33} = 76.18'$
 $O/H = 5.57 - 3.42 = 2.15'$



Sheets aft

Actual Height of Poop Tween Dk = $8'6''$
 Standard Height of Poop Tween Dk = $7'6''$
 Actual Height of Poop Tween Deck = $8'6''$
 Standard = $7'6'' = 12''$
 Shear at $\frac{1}{4}$ of Rudder Stock = $14 + 12 + 24 = 50$
 Shear at $\frac{1}{6}$ from aft = $2 + 1.23 + 12 \left(\frac{29.25}{129.25} \right)^2 = 3.84$

$\frac{1}{6} = 100'$
 $\frac{1}{3} = 200'$



$24 \left(\frac{29.25}{129.25} \right)^2 = 1.23$

Trade of ship Carrying petroleum in bulk.

Names of sister ships "Mobil Radiant" "Modil Daylight" - etc

Builder's name and yard number Sun Shipbuilding & Dry Dock Co. Chester, P.A.

Owners Measrs Tankers Navigation CO Inc.

Fee \$150.000.

MM

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



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