

LLOYD'S REGISTER OF SHIPPING

SURVEYS FOR FREEBOARD

(COMPUTATION FOR ~~STEAMER, SAILING SHIP, TANKER~~)

Received ☒
Index No.
Govt. Copy
Owners C11

Ship's Name RAPHAEL.	Official Number 261.	Nationality and Port of Registry RUSSIAN. NOVOROSSISK ODESSA.	Gross Tonnage 31133.	Date of Build 4/1965.	Port of Survey GENOA.
Moulded Dimensions: Length 215.033. Breadth 31.000. Depth 15.527.					Date of Survey DURING CONSTRUCTION.
Freeboard Length 215.033 TO CENTRE OF RUDDER STOCK.					Surveyor's Signature E. H. Winter.
Moulded displacement at moulded draught = 85 per cent. of moulded depth 72324 M. tons (excluding bossing)					Particulars of Classification +100 A1 OIL TANKER. "ICE CLASS 3"
Coefficient of fineness for use with Tables .802					

DEPTH FOR FREEBOARD (D).	DEPTH CORRECTION.	ROUND OF BEAM CORRECTION.
Moulded depth 15.527	(a) Where D is greater than Table depth (D - Table depth) R = 8.33(15.561 - 14.336) 30 = +306MM	Moulded Breadth (B) 31000.
Stringer plate 33.5 34	(b) Where D is less than Table depth (if allowed) (Table depth - D) R =	Standard Round of Beam = $\frac{B \times D}{50} = \frac{31000 \times 15}{50} = 620$
Wood Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$	If restricted by superstructures	Ship's Round of Beam = 635.
Depth for Freeboard (D) = 15.561		Difference 15
		Restricted to
		Correction = $\frac{\text{Diff}^2}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{15^2}{4} \times .5817 = -2MM$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed <i>See sketch.</i>	46.636	46.636	2570/3210 AT AP.		46.636
" overhang	NIL.				
R.Q.D. enclosed	-				
" overhang	-				
Bridge enclosed <i>See sketch.</i>	14.832	14.832	3000.		14.832
" overhang aft	NIL.				
" overhang forward	NIL.				
Fore enclosed <i>See sketch.</i>	28.428	28.428	2717/4248 AT FR.		28.428
" overhang093	.047			.047
Trunk aft	-				
" forward	-				
Tonnage opening aft	-				
" forward	-				
Total	89.989	89.943			89.943

Standard Height of Superstructure	2.290 m
" " R.Q.D.	-
Deduction for complete superstructure	1067MM
Percentage covered $\frac{S}{L} =$	41.85
" " $\frac{S_1}{L} =$	41.83
" " $\frac{E}{L} =$	41.83
Percentage from Table, Line A. (TANKER)	32.83
(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 = $1067 \times .3283 =$	350MM

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	2045	1		2045	518.	518	1		518
$\frac{1}{4}$ L from A.P.	909	4		3636	78.	78	4		312
$\frac{2}{4}$ L "	227	2		454	0	0	2		0
Amidships	0	4		0	0	0	4		0
$\frac{3}{4}$ L from F.P.	454	2		908	0	0	2		0
$\frac{1}{4}$ L "	1817	4		7268	112.	112	4		448
F.P.	4090	1		4090	828.	828	1		828
Total				18401					2106

Mean actual sheer aft =
Mean standard sheer aft = } **deficient**

Mean actual sheer forward =
Mean standard sheer forward = }

Length of enclosed superstructure forward of amidships =
" " aft of " = } **tanker**

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \left(\frac{16295}{18} - 146 \right) (.75 - .2093) = 759 \times .5407 = +410MM$
If limited on account of midship superstructure. If limited to maximum allowance of $1\frac{1}{2}$ ins. per 100ft.

Deduction for Tropical Freeboard. Addition for Winter and Winter North Atlantic Freeboard.	Deduction for Fresh Water. <i>See over.</i> Displacement in salt water at summer load water line $\Delta = 64277 \text{ Tms}$ Tons per inch immersion at summer load water line $T = 58.92$ Deduction = $\frac{\Delta}{40 T}$ inches 273MM	TABULAR FREEBOARD corrected for Flush Deck (if required) Correction for coefficient 1.482/1.360	3128 3409
Depth to Freeboard Deck = 15561 Summer freeboard = 3773 Moulded draught (d) = 11788 Keel allowance = Extreme draught = Deduction for Tropical freeboard and addition for = 246MM Winter freeboard = $\frac{d}{48}$ inches = 246MM Addition for Winter North Atlantic Freeboard (if required) = 246 + 179 = 425MM		Depth Correction 306 Deduction for superstructures - 350 Sheer correction 410 Round of Beam correction - 2 Correction for Thickness of Deck amidships - Other corrections, scantlings, etc. - 716 352 + 364 Summer Freeboard = 3773	3773MM 3254MM 3506MM 3521MM 4019MM 4198MM

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

Tropical Fresh Water Line above Centre of Disc	.519MM
Fresh Water Line " "	.273MM
Tropical Line " "	.246MM
Winter Line below " "	.246MM
Winter North Atlantic Line " "	.425MM

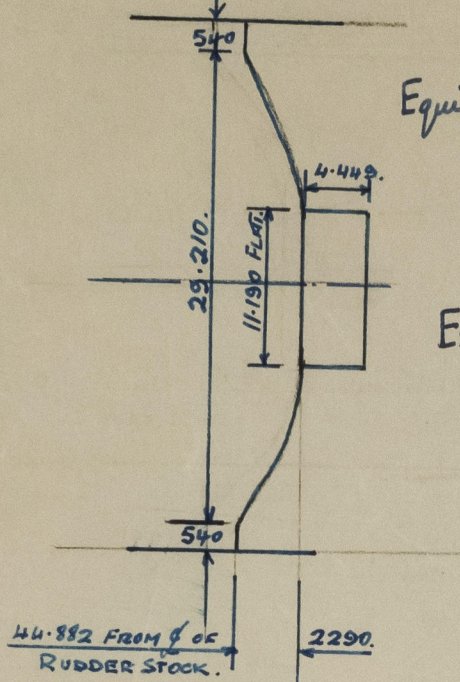
Tropical Fresh Water Freeboard	3773MM
Fresh Water " "	3254MM
Tropical " "	3506MM
Winter " "	3521MM
Winter North Atlantic " "	4019MM

POOP FRONT: CLASS I CLOSING.

NB. THESE DOORS LEAD ONLY INTO
FOAM & CO₂ ROOMS. OTHERWISE BWD INTACT.

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.

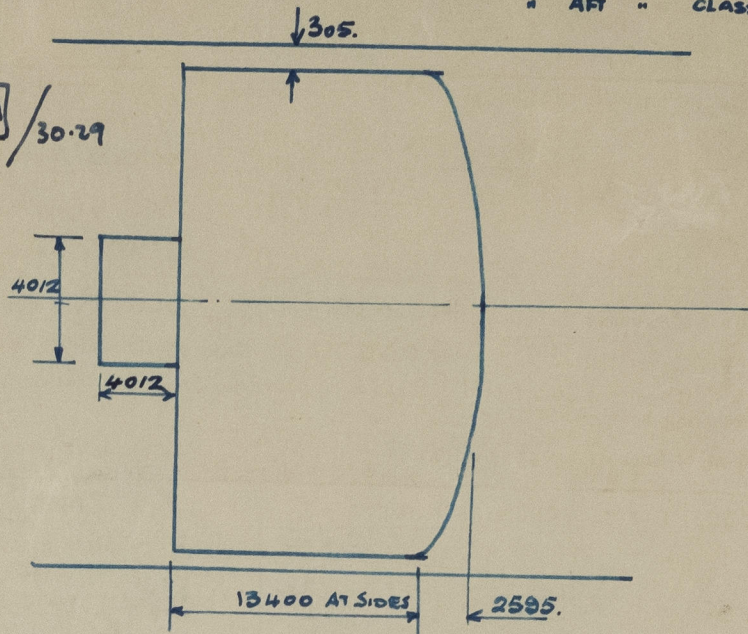
BR. FR. BND. CLASS I
" AFT " CLASS II



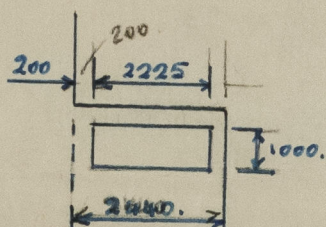
$$\begin{aligned} \text{Equiv. Length} &= 2.29 \left[\frac{2}{3} (29.21 - 11.19) + 11.19 \right] / 30.29 \\ &= 1.754 + 44.882 \\ &= 46.636 \end{aligned}$$

Excess height of poop.

$$\begin{aligned} &= \frac{3210 - 2290}{3} \times \frac{44.882}{215.033} \\ &= 64. \end{aligned}$$



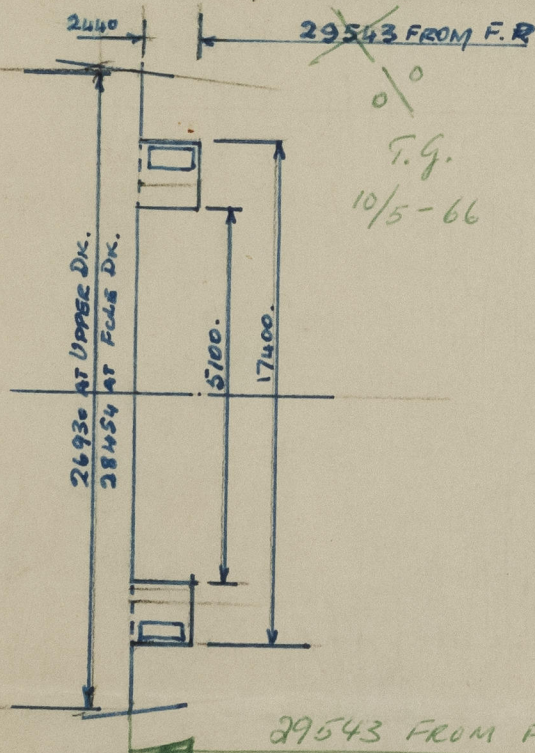
$$\begin{aligned} \text{Equivalent Length} &= (13.400 + \frac{2}{3} \times 2595) \times \frac{15.195}{15.500} \\ &= 14.832 \text{ M} \end{aligned}$$



$$\begin{aligned} \text{Equiv. Length} &= 29.543 - [(17.400 - 5.100) \times 2.440 / 26.930] \\ &= 29.543 - 1.115 = 28.428 \text{ M} \end{aligned}$$

$$\begin{aligned} \text{Equiv. Length of O/H} &= [.200 + (2440 - 2425)] \frac{12.300}{26.930} \\ &= .093 \text{ M} \end{aligned}$$

$$\text{Sleer correction} = \frac{4249 - 2290}{3} \times \frac{27.103}{215.033} = 82 \text{ MM.}$$



Δ. S.L.W.

DR. MLD.
11.787.

M. TONS.

M. TONS / CM.

Δ SLW + 75MM.

64220.

38.92.

Δ SLW - 75MM.

64662.

38.96.

63778.

58.87.

Trade of ship

INTERNATIONAL - TANKER.

Names of sister ships

"LEONARDO DA VINCI", "FEDOR POLETAEV", "GIORDANO BRUNO", "GALILEO GALILEI", "GIUSEPPE VERDI"

Builder's name and yard number

ANSALDO SPA. GENOA - SESTRI.

YARD N° 1598.

Owners

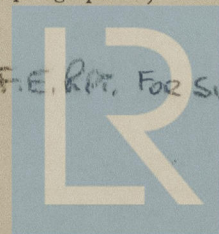
BLACK SEA STATE STEAMSHIP LINES.

Fee £

(will be sent later)

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

PLANS AT PRESENT IN H.O. IN CONNECTION WITH F.E.R.M. FOR SISTER VESSELS



© 2021

Lloyd's Register
Foundation