

LLOYD'S REGISTER OF SHIPPING

SURVEYS FOR FREEBOARD

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

For LONDON OFFICE ONLY

Received
 Index No.
 Govt. Copy
 Owners C11

Ship's Name "LEBEDIN" Official Number Nationality and Port of Registry RUSSIAN ODESSA Gross Tonnage 22200 (APPROX) 22226.24 Date of Build JULY 1962

Port of Survey HIROSHIMA, JAPAN
 Date of Survey DURING CONSTRUCTION.

Moulded Dimensions: Length 195.000 M (TO CR OF R.S.) Breadth 27.000 M Depth 14.250 M
 Freeboard Length
 Moulded displacement at moulded draught = 85 per cent. of moulded depth 51836 METRIC tons (excluding bossing)
 Coefficient of fineness for use with Tables .793

Surveyor's Signature J.F.K. TOBIN
 Particulars of Classification * 100 AI OIL TANKER. [CONTEMPLATED]

DEPTH FOR FREEBOARD (D).	DEPTH CORRECTION.	ROUND OF BEAM CORRECTION.
Moulded depth ... 14250	(a) Where D is greater than Table depth (D-Table depth) R =	Moulded Breadth (B) 27.000 M
Stringer plate ... 25.5	833(14.276-13.0)30 = +319 mm	Standard Round of Beam = $\frac{B \times 12}{50} = \frac{540}{50} = 10.8$
Wood Sheathing on exposed deck	(b) Where D is less than Table depth (if allowed) (Table depth-D) R =	Ship's Round of Beam = 4.38
$T \left(\frac{L-S}{L} \right) =$	If restricted by superstructures	Difference -102
Depth for Freeboard (D) = 14.276		Restricted to
		Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S}{L} \right) = \frac{102}{4} \times \left(1 - \frac{10.8}{27} \right) = 27.6$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed Equiv...	44.784	44.784	2.600		44.784
" overhang ...					
R.Q.D. enclosed ...					
" overhang ...					
Bridge enclosed ...					
" overhang aft ...					
" overhang forward ...					
F'cle enclosed ...	23.270	23.270	2.500		23.270
" overhang ...					
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" " forward ...					
Total ...	68.054	68.054			68.054

Standard Height of Superstructure 2.270 m
 " " R.Q.D.
 Deduction for complete superstructure 1067 mm
 Percentage covered $\frac{S}{L} =$
 $\frac{S_1}{L} =$ } 34.90
 $\frac{E}{L} =$
 Percentage from Table, Line A (Tanker) 25.90.
 (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 x 25.90 = 276 mm

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P. ...	1878	1	1878	1500	1500	1	1500
$\frac{1}{4}$ L from A.P. ...	835	4	3340	426	426	4	1704
$\frac{2}{4}$ L " ...	209	2	418	0	0	2	0
Amidships ...	0	4	0	0	0	4	0
$\frac{3}{4}$ L from F.P. ...	417	2	834	0	0	2	0
$\frac{1}{4}$ L " ...	1669	4	6676	33	33	4	132
F.P. ...	3757	1	3757	1500	1500	1	1500
Total ...			16903				4836

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{S}{2L} \right) = \frac{(12067 - 524)(.75 - .1765)}{18} = +355 \text{ mm}$
 If limited on account of midship superstructure.

File Excess Lt. 2.800 Actual Poop T/D Lt. 2.700
 $\frac{2.290}{610}$ Standard - - $\frac{2.290}{410 \text{ mm}}$
 Mean actual sheer aft
 Mean standard sheer aft =
 Mean actual sheer forward } Deficient $\frac{410}{3} \times \frac{43.18}{195} = 30.$
 Mean standard sheer forward = $\frac{610}{3} \times \frac{23.270}{195} = 24.$
 Length of enclosed superstructure forward of amidships =
 " " aft of " = Nil.

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = 14.276
 Summer freeboard = 3.579
 Moulded draught (d) = 10.677
 Keel allowance =
 Extreme draught =
 Deduction for Tropical freeboard and addition for =
 Winter freeboard = $\frac{d}{48}$ inches = 222 mm

Addition for Winter North Atlantic Freeboard (if required) = 222 + 162 = 384 mm

Deduction for Fresh Water.

Displacement in salt water at summer load water line
 $\Delta = 45470$ METRIC TONS
 Tons per cm immersion at summer load water line
 $T = 46.04$ METRIC TONS
 Deduction = $\frac{\Delta}{40 T}$ inches = 247 mm

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

793 + 68 = 1.473 / 1.36
 Depth Correction ... 319
 Deduction for superstructures ... 276
 Sheer correction ... 355
 Round of Beam correction ... 17
 Correction for Thickness of Deck amidships ...
 Other corrections, scantlings, etc. ...

Summer Freeboard = 3599 mm

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

Tropical Fresh Water Line above Centre of Disc ... 469 mm
 Fresh Water Line " " ... 247 mm
 Tropical Line " " ... 222 mm
 Winter Line below " " ... 222 mm
 Winter North Atlantic Line " " ... 384 mm

Tropical Fresh Water Freeboard 3130 mm
 Fresh Water " 3252 mm
 Tropical " 3277 mm
 Winter " 3221 mm
 Winter North Atlantic " 3783 mm

22 MAY 1962

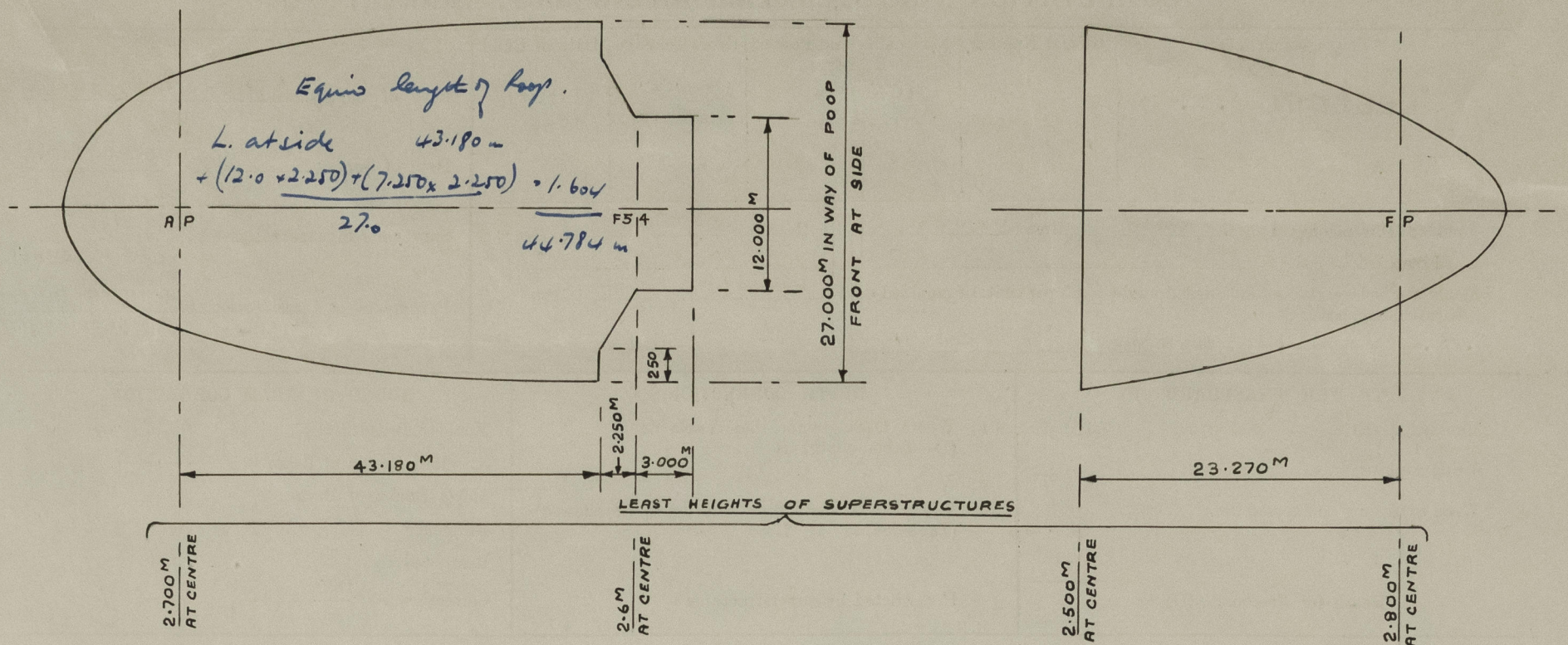
A new form should be prepared if any alterations that affect the freeboard have been made. If no such alterations have been made,

the Surveyor should endorse the form on this side with his signature and the date.

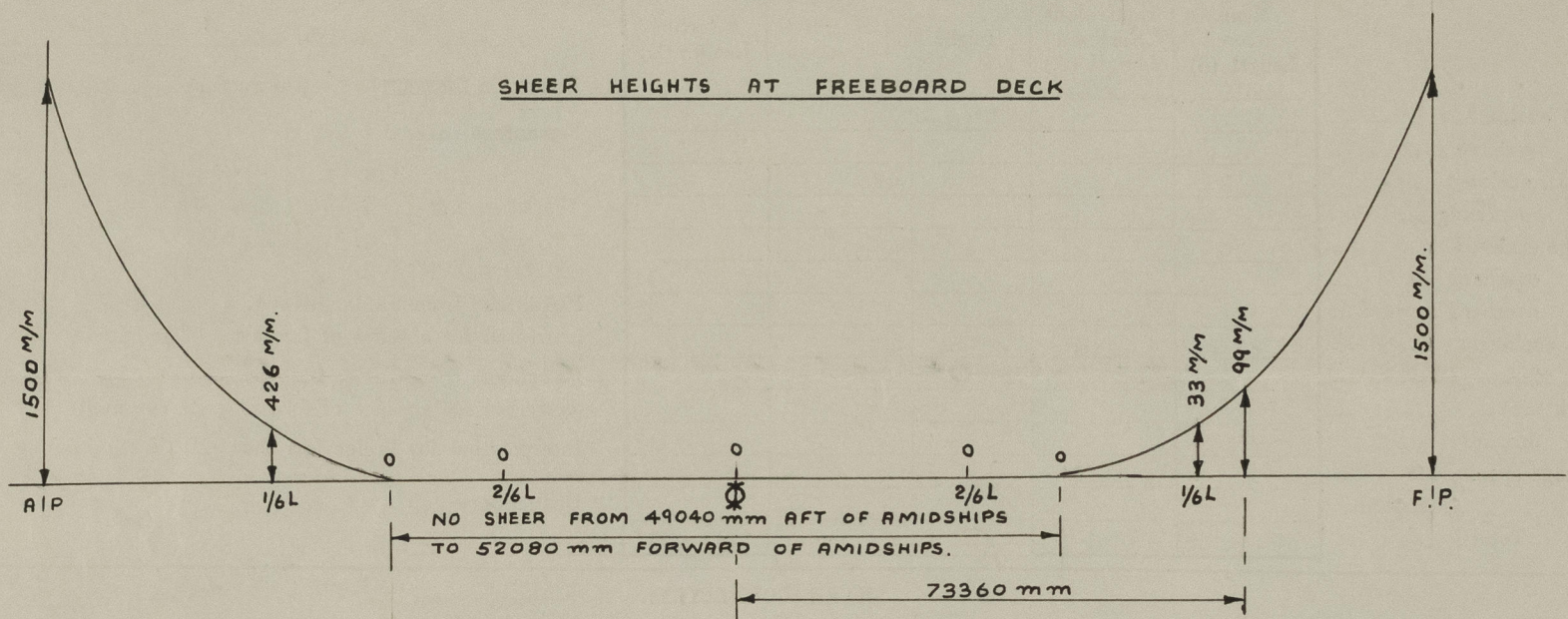
DISPOSITION OF SUPERSTRUCTURES

POOP DECK

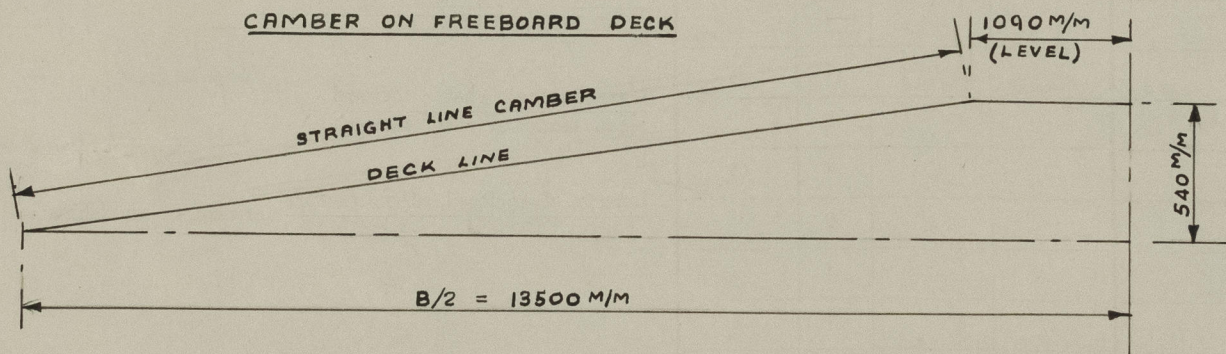
FORECASTLE DECK



SHEER HEIGHTS AT FREEBOARD DECK



CAMBER ON FREEBOARD DECK



Equis camber.

$$540 \left(1.090 + \frac{12.410}{2} \right)^3$$

$$13.50 \times 2$$

$$= 438 \text{ mm.}$$

Trade of ship..... INTERNATIONAL

Names of sister ships..... "LUGANSK"

Builder's name and yard number..... MITSUBISHI SHIPBUILDING & ENGINEERING CO LTD., HIROSHIMA, SHIP NO 146

Owners..... V/O SUDOIMPORT, MOSCOW, U.S.S.R.

Fee £.....

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



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