

# LLOYD'S REGISTER OF SHIPPING

UNITED WITH THE BRITISH CORPORATION REGISTER

## SURVEYS FOR FREEBOARD

(COMPUTATION FOR STEAMER; ~~XXXXXXXXXXXXXXXXXXXX~~)

Received .....  
 Index No. ....  
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 Owners C11 .....

Ship's Name <b>"PAMIR"</b>	Official Number <b>-</b>	Nationality and Port of Registry <b>Russian Leningrad</b>	Gross Tonnage <b>1500</b>	Date of Build <b>10.58</b>	Port of Survey <b>Gavle</b>
Moulded Dimensions: Length <b>71,800</b> Breadth <b>12,500</b> Depth <b>5,200</b> to main deck <b>✓</b>					Date of Survey <b>Whilst building</b>
Freeboard Length <b>72,000</b> <b>TO E OF RUDDERSTOCK</b>					Surveyor's Signature <b>H.O. Collinson</b>
Moulded displacement at moulded draught = 85 per cent. of moulded depth <b>2207 m<sup>3</sup></b>					Particulars of Classification <b>+100A1 for Towing Service</b>
Coefficient of fineness for use with Tables <b>.555 use .680</b>					Class contemplated.

DEPTH FOR FREEBOARD (D). mm	DEPTH CORRECTION.	ROUND OF BEAM CORRECTION. mm
Moulded depth ... 5200	(a) Where D is greater than Table depth (D-Table depth) R = $\frac{72}{414} = +63$	Moulded Breadth (B) 12500
Stringer plate ... 14	(b) Where D is less than Table depth (if allowed) (Table depth-D) R =	Standard Round of Beam = $\frac{B \times B}{50} = 250$
Wood Sheathing on exposed deck $T \left( \frac{L-S}{L} \right) =$	If restricted by superstructures	Ship's Round of Beam = 244
Depth for Freeboard (D) = <b>5214</b>		Difference = 6
		Restricted to
		Correction = $\frac{\text{Diff}^{\circ}}{4} \times \left( 1 - \frac{S_1}{L} \right) = \frac{6(1-5324)}{4} = +1 \text{ mm}$

## DEDUCTION FOR SUPERSTRUCTURES.

See sketch overleaf

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ...					
" overhang ...					
R.Q.D. enclosed ...					
" overhang ...					
Bridge enclosed ...					
" overhang aft ...					
" overhang forward ...					
F'cle enclosed <i>Equiv.</i> ...	38202	38202	2300	-	38202
" overhang 4. ...	173	130			130
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" " forward ...					
Total ...	38375	38332			38332

Standard Height of Superstructure **1830**" " R.Q.D. **/**Deduction for complete superstructure **753 mm**Percentage covered  $\frac{S}{L} = 53.29$ 
 $\frac{S_1}{L} = 53.24$   
 $\frac{E}{L} =$ 
Percentage from Table, Line A. **36.54**

(corrected for absence of forecastle (if required))

Percentage from Table, Line B. **39.24**

(corrected for absence of forecastle (if required))

Interpolation for bridge less than -2L (if required) **37.41**Deduction =  $753 \times .3741 = 282$ 

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	854	1		854	763	763	1		763
$\frac{1}{8}L$ from A.P. ...	379	4		1516	224	224	4		896
$\frac{2}{8}L$ " ...	95	2		190	13	13	2		26
Amidships ...	0	4		0	0	0	4		0
$\frac{2}{8}L$ from F.P. ...	190	2		380	362	240	2		480
$\frac{1}{8}L$ " ...	759	4		3036	1005	959	4		3836
F.P. ...	1708	1		1708	2003	2158	1		2158
Total ...				7684					8159

Mean actual sheer aft = **Deficient .6476**Mean actual sheer forward = **Excess**Length of enclosed superstructure forward of amidships = **7.1L**" " aft of " = **3.24%**Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{475}{18} \left( .75 - .2665 \right) = -13$ If limited on account of midship superstructure.  $13 \times 13.24/20 = -9$  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.

Depth to Freeboard Deck = **5214**  
 Summer freeboard = **1214**  
 Moulded draught (d) = **4000**  
 Keel allowance =  
 Extreme draught =

Deduction for Tropical freeboard and addition for = **83**Winter freeboard =  $\frac{d \text{ mm}}{48 \text{ inches}} = 83 = 3\frac{1}{4}$ Addition for Winter North Atlantic Freeboard (if required) = **83 + 51 = 134 = 5\frac{1}{4}**

## Deduction for Fresh Water.

Displacement in salt water at summer load water line  
 $\Delta = 1984 \text{ met. tons}$   
 Tons per inch immersion at summer load water line  
 $T = 6.738 \text{ met. tons/cm}$   
 Deduction =  $\frac{\Delta}{40 T} \text{ inches} = 7.36 \text{ cm} = 74 \text{ mm} = 3"$

## TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

Depth Correction ... **63**  
 Deduction for superstructures ... **282**  
 Sheer correction ... **9**  
 Round of Beam correction ... **1**  
 Correction for Thickness of Deck amidships ...  
 Other corrections, scantlings, *to a summer mid draft of 4.000m* **686**

Summer Freeboard = **1214**SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, ~~W~~, Steel, Deck :-

Tropical Fresh Water Line above Centre of Disc	157 mm	6 $\frac{1}{4}$ "	Tropical Fresh Water Freeboard	1057 mm	3'-11 $\frac{3}{4}$ "
Fresh Water Line	74 mm	3"	Fresh Water	1149 mm	3'-8 $\frac{3}{4}$ "
Tropical Line	83 mm	3 $\frac{1}{4}$ "	Tropical	1131 mm	3'-8 $\frac{1}{2}$ "
Winter Line below	83 mm	3 $\frac{1}{4}$ "	Winter	1297 mm	4'-3"
Winter North Atlantic Line	134 mm	5 $\frac{1}{4}$ "	Winter North Atlantic	1348 mm	4'-5"

4 NOV 1958



# "PAMIR"

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.

## DISPLACEMENT

## DISPLACEMENT ON SHELL, TON (METRIC) IN SALT WATER

## TON/CM ON SHELL METRIC TON

100 % of mould. depth  
95 % " " "  
85 % " " "  
75 % " " "  
76.92% ✓ " "

2830  
2660  
2276  
1914  
1984 ✓

7.00  
7.00  
6.90  
6.70  
6.738 ✓

## SHEER AFT

Standard	SM	Product
854	1	854
379	3	1137
95	3	285
0	1	0
		2276

Actual	SM	Product
763	1	763
224	3	672
13	3	39
0	1	0
		1474

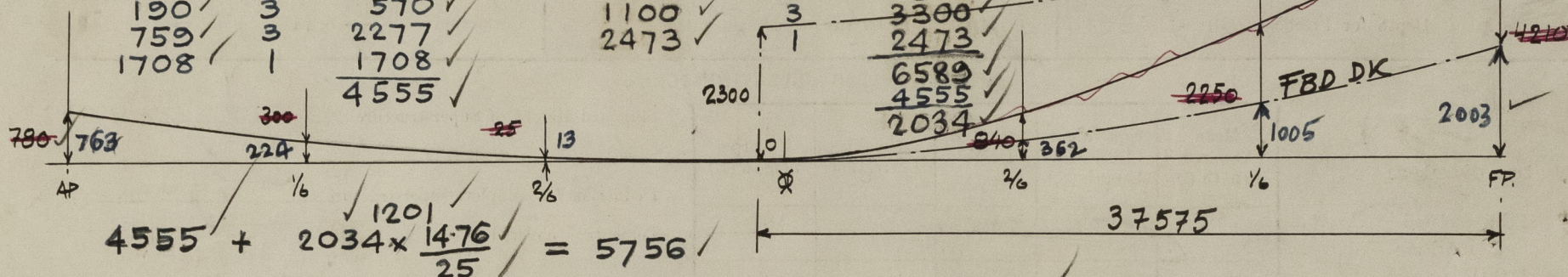
$$\frac{\text{Actual}}{\text{Standard}} = \frac{1474}{2276} = 64.76\%$$

Actual Deck Twee Db Height 2300 ✓  
Standard " " " 1830 ✓  
Excess 470

$$\text{allowed sheer at F.P.} = 470 + 2003 = 2473$$

## SHEER DIAGRAM

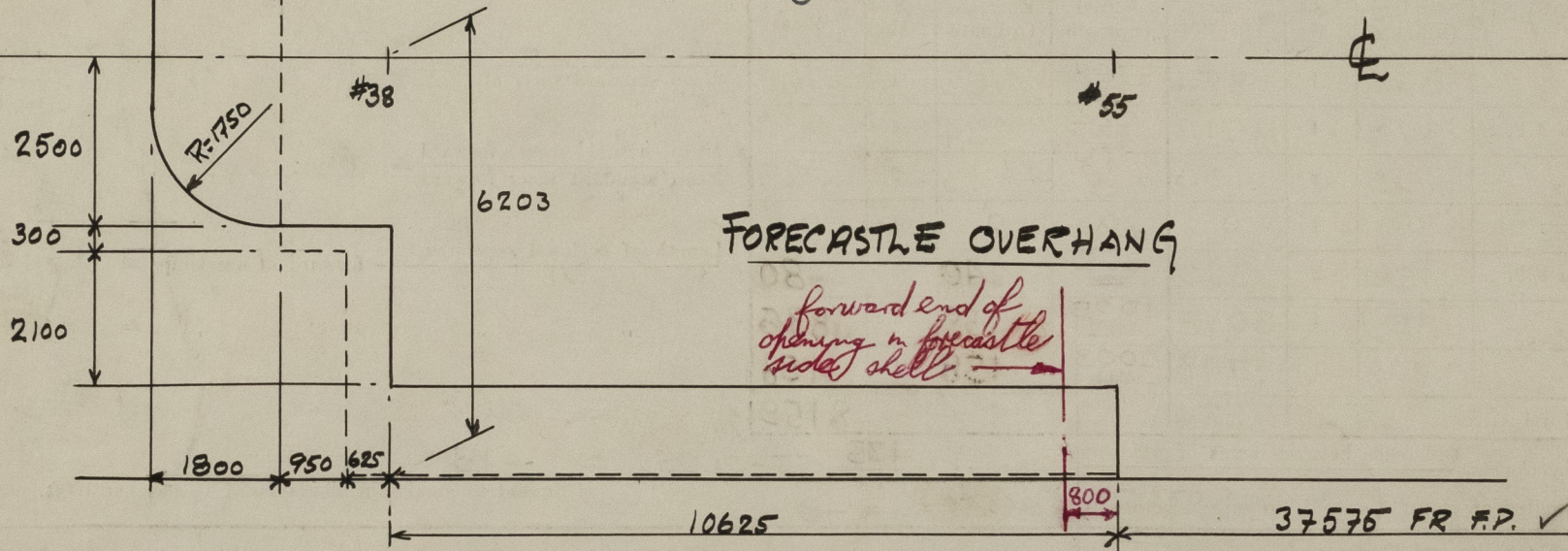
Actual	SM	Product
0	1	0
272	3	816
1100	3	3300
2473	1	2473
		6589
		4555
		2034



$$\text{Allowed sheer ordinates fwd} = \text{standard ordinate} \times \frac{5756}{4555}$$

## OVERHANG

$$\begin{aligned} \text{F.C.L.E. Length at side} &= 37.575 \checkmark \\ \text{Plus } 4.900 \times 800 &= 627 \checkmark \\ \text{Eqvnt.} &= 38.202 \checkmark \\ \text{Overhang} = 800 - 627 &= 173 \checkmark \end{aligned}$$



## FORECASTLE OVERHANG

forward end of  
opening in forecastle  
side shell

Trade of ship International

Names of sister ships -

Builder's name and yard number A/B Gävle Varv, Yard No. 99.

Owners U.S.S.R.

Fee 525: -

omit

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

1. Longitudinal section and plans.
2. Midship section.



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