

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name "NARVA"	Official Number	Nationality and Port of Registry Russian	Gross Tonnage About 1100	Date of Build 8.1952.	Port of Survey Norrköping.
Moulded Dimensions: Length 62.280 m. Breadth 10.360 m. Depth 4.520 m. To CL of Rudder stock					Date of Survey Whilst building.
Moulded displacement at moulded draught = 85 per cent. of moulded depth 1735 metric tons					Surveyor's Signature <i>H. O. Albertson</i>
Coefficient of fineness for use with Tables 683					Particulars of Classification +100A1
					Carrying Petroleum in Bulk.

DEPTH FOR FREEBOARD (D). mm.	
Moulded depth	4.520
Stringer plate	10
Sheathing on exposed deck	
$T \left(\frac{L-S}{L} \right) =$	
Depth for Freeboard (D) =	4.530

DEPTH CORRECTION.	
(a) Where D is greater than Table depth	
$(D - \text{Table depth}) R =$	$8.33(4.530 - 4.152) = +50 -/-$
(b) Where D is less than Table depth (if allowed)	
$(\text{Table depth} - D) R =$	
If restricted by superstructures	✓

ROUND OF BEAM CORRECTION. mm.	
Moulded Breadth (B)	10.360
Standard Round of Beam = $\frac{B \times 12}{50}$	207/-
Ship's Round of Beam Main deck	207 ✓
Difference	Trunk top 25
Restricted to	N.L.
Correction = $\frac{\text{Diff.}}{4} \times \left(1 - \frac{S_1}{L} \right)$	N.L.

DEDUCTION FOR SUPERSTRUCTURES. mm.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed	17600	17.600	2190	-	17.600
" overhang					
R.Q.D. enclosed					
" overhang					
Bridge enclosed					
" overhang aft					
" overhang forward					
Fore enclosed	7686	7.686	2150	-	7.686
" overhang	230	0.115	1360	1343/1830	0.115
Trunk aft	33964	16.757	1360	1343	12.298
" forward					
Tonnage opening aft					
" forward					
Total	25.516	42.158			37.699

Standard Height of Superstructure	1830 -/-
" " R.Q.D.	-
Deduction for complete superstructure	672 -/-
Percentage covered $\frac{S}{L} =$	40.97
" $\frac{S_1}{L} =$	67.69
" $\frac{E}{L} =$	60.53
Percentage from Table, Line A. TANKER	52.58
(corrected for absence of fore-castle (if required))	-
Percentage from Table, Line B.	-
(corrected for absence of fore-castle (if required))	-
Interpolation for bridge less than 2L (if required)	-
Deduction = $672 \times 52.58 =$	-353 -/-

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	773	1	773	824	824	1	824		824
$\frac{1}{2}L$ from A.P.	343	4	1372	355	355	4	1420		1420
$\frac{3}{4}L$ "	86	2	172	100	100	2	200		200
Amidships	-	4	-	0	-	4	-		-
$\frac{3}{4}L$ from F.P.	172	2	344	203	203	2	406		406
$\frac{1}{2}L$ "	687	4	2748	771	771	4	3084		3084
F.P.	1546	1	1546	1928	1928	1	1928		1928
Total			6955				7862		

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 " =

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{75-S}{2L} \right) = \frac{907(75-2049)}{18} = -27 -/-$
If limited to maximum allowance of $1\frac{1}{2}$ ins. per 100 ft. ✓

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = 4530
Summer freeboard = 276
Moulded draught (d) = 4254

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{48} = 89 -/-$ Addition for Winter North Atlantic Freeboard (if required) = $51 + 89 = 140 -/-$

Deduction for Fresh Water.

Displacement in salt water at summer load water line 2014
 $\Delta =$ See overleaf
Tons per inch immersion at summer load water line 4.45
 $T =$ See overleaf

Deduction = $\frac{\Delta}{40 T}$ inches
= 89 -/-

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

Depth Correction ... 50
Deduction for superstructures ... 353
Sheer correction ... 27
Round of Beam correction ...
Correction for Thickness of Deck amidships ...
Other corrections, scantlings, etc. ...

605
606

	+	-
50		
- 353		
- 27		
-		
-		
50	380	- 330

Summer Freeboard = 276

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

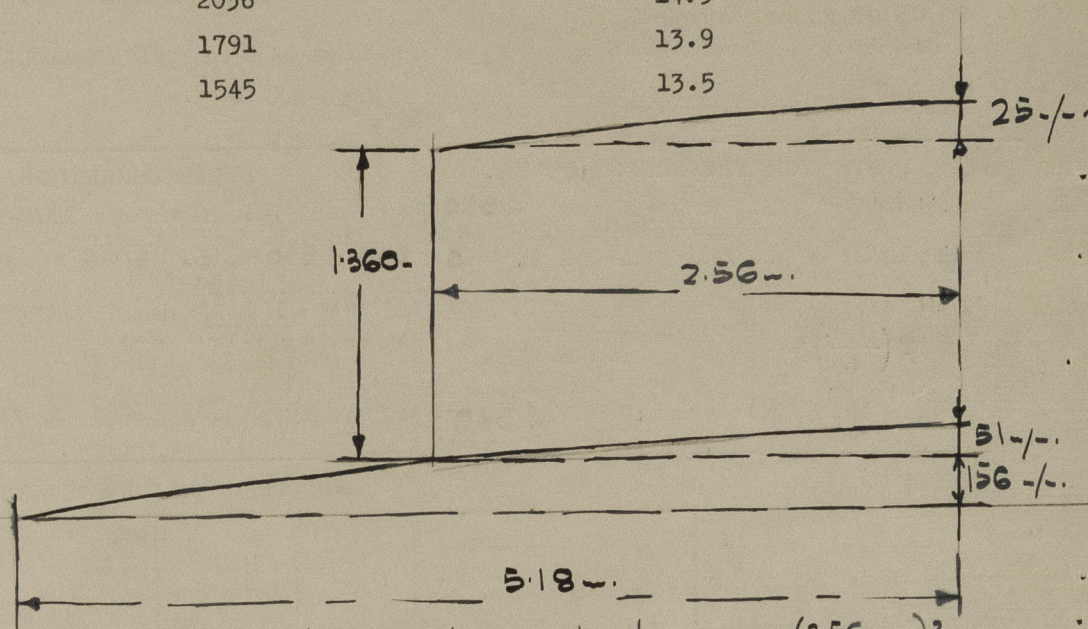
Tropical Fresh Water Line above Centre of Disc	178 -/-
Fresh Water Line	89 -/-
Tropical Line	89 -/-
Winter Line below	89 -/-
Winter North Atlantic Line	140 -/-

Tropical Fresh Water Freeboard	276 -/-
Fresh Water	89 -/-
Tropical	89 -/-
Winter	89 -/-
Winter North Atlantic	140 -/-

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.

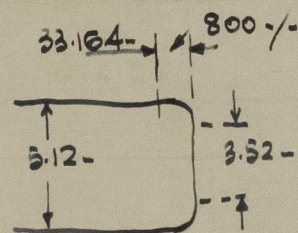
Displacement

Moulded draught	Displacement on shell plating in salt water tons	Tons per inch
95 %	2036	14.5
85 %	1791	13.9
75 %	1545	13.5



$$\begin{aligned} \text{Reduction in camber at trunk side} &= 207 \times \left(\frac{2.56}{5.18} \right)^2 \\ &= 51/- \\ \text{mean} &= \frac{2}{3} \times 51 = 34/- \end{aligned}$$

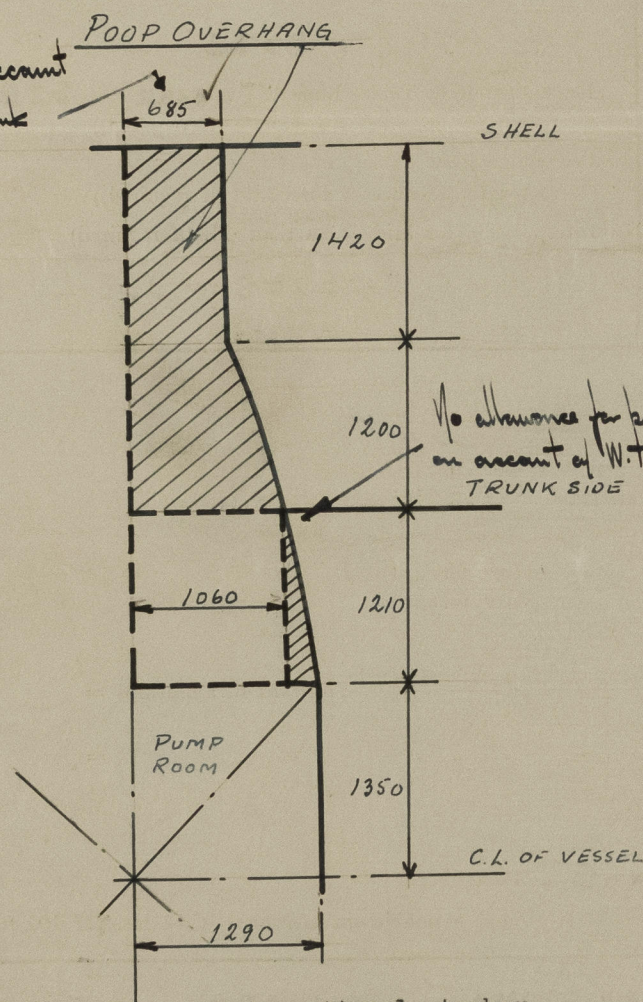
$$\begin{aligned} \text{1/2 cam of trunk top camber} &= \frac{2}{3} \times 25 = 17/- \\ \therefore \text{Virtual height of trunk} &= 1360 - 17 \\ &= 1343/- \end{aligned}$$



$$\begin{aligned} \text{Length at side} &= 33.164 \\ + (3.52 \times 8) + \frac{(3.14 \times 1.6^2)}{8} &= 74.5 \\ \hline &= 33.909 \end{aligned}$$

$$\begin{aligned} \therefore \text{Eq. Trunk} &= 33.909 \times \frac{5.12}{10.36} \\ &= 16.757 \end{aligned}$$

No allowance on account of scupper in bulkhead plating.



No allowance for bunkers on account of W.T. Door entrance.

Trade of ship International, tanker.

Names of sister ships A/B Norrköpings Varv Yards Nos. 135 "ISHIM" and 136 "IRTISH", 137 "SUNGARI"

Builder's name and yard number A/B Norrköpings Varv Yard No. 138.

Owners U.S.S.R.

Fee £



© 2021

Lloyd's Register
Foundation