

LLOYD'S REGISTER OF SHIPPING  
UNITED WITH THE BRITISH CORPORATION REGISTER  
SURVEYS FOR FREEBOARD  
(COMPUTATION FOR STEAMER, SAIL SHIP, TANKER)

Received .....  
Index No. ....  
Govt. Copy .....  
Owners C11 .....

Ship's Name <i>Natsekov Skibsværft</i> <i>Yard N.º 150.</i>	Official Number	Nationality and Port of Registry <i>Danish</i>	Gross Tonnage <i>12600</i> <i>Approx.</i>	Date of Build	Port of Survey <i>Copenhagen</i>
Moulded Dimensions: Length <i>535'-4 1/2"</i> Breadth <i>72'-0"</i> Depth <i>39'-3"</i> Freeboard Length <i>535.37'</i> Moulded displacement at moulded draught = 85 per cent. of moulded depth (excluding bossing) ..... tons Coefficient of fineness for use with Tables. <i>(At 85% D.) = .758 Per Builders.</i>					Date of Survey <i>November 1955</i>
Surveyor's Signature .....					Particulars of Classification <i>100 A1. C.P.B.</i> <i>Class contemp.</i>

DEPTH FOR FREEBOARD (D).	DEPTH CORRECTION.	ROUND OF BEAM CORRECTION.
Moulded depth ... .. <i>39.25'</i>	(a) Where D is greater than Table depth (D-Table depth) R = <i>(39.33 - 35.69) 3 = 10.92"</i>	Moulded Breadth (B) <i>72.0'</i>
Stringer plate <i>Assumed abt. .08'</i>	(b) Where D is less than Table depth (if allowed) (Table depth-D) R = <i>3.64</i>	Standard Round of Beam = $\frac{B \times 12}{50}$ = <i>17.28"</i>
Wood Sheathing on exposed deck $T \left( \frac{L-S}{L} \right) =$ .....	If restricted by superstructures	Ship's Round of Beam = <i>17.32"</i>
Depth for Freeboard (D) = <i>39.33'</i>		Difference = <i>.04</i>
		Restricted to
		Correction = $\frac{\text{Diff.}}{4} \times \left( 1 - \frac{S}{L} \right)$ = $\frac{.04}{4} \times .6224 = -.01$

DEDUCTION FOR SUPERSTRUCTURES.					
	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed <i>Equiv.</i>	<i>115.21</i>	<i>115.21</i>	<i>8</i>		<i>115.21</i>
" overhang ... ..	<i>.56</i>	<i>.28</i>			<i>.28</i>
R.Q.D. enclosed ... ..					
" overhang ... ..					
Bridge enclosed <i>Equiv.</i>	<i>40.84</i>	<i>20.42</i>	<i>8</i>		<i>20.42</i>
" overhang aft ... ..					
" overhang forward ... ..					
F'cle enclosed ... ..	<i>60.81</i>	<i>60.81</i>	<i>7.5</i>		<i>60.81</i>
" overhang ... ..	<i>10.83</i>	<i>5.42</i>			<i>5.42</i>
Trunk aft ... ..					
" forward ... ..					
Tonnage opening aft ... ..					
" " forward ... ..					
Total ... ..	<i>228.25</i>	<i>202.14</i>			<i>202.14</i>
Standard Height of Superstructure <i>7.5'</i>					
" " R.Q.D. .....					
Deduction for complete superstructure <i>42"</i>					
Percentage covered $\frac{S}{L} =$ <i>42.63</i>					
" " $\frac{S_1}{L} =$ <i>37.76</i>					
Percentage from Table, Line A. <i>Tanker. 28.76</i>					
(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 = <i>42 x .2876 = 12.08</i>					

SHEER CORRECTION.									
Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ... ..	<i>63.54</i>	<i>1</i>			<i>39.3704</i>	<i>45.37</i>	<i>1</i>		<i>45.37</i>
1/4 L from A.P. ... ..		<i>4</i>			<i>5.118"</i>	<i>5.44</i>	<i>4</i>		<i>21.76</i>
3/4 L " ... ..		<i>2</i>			<i>0"</i>	<i>0</i>	<i>2</i>		
Amidships ... ..	<i>0</i>	<i>4</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>4</i>	<i>0</i>	<i>0</i>
3/4 L from F.P. ... ..		<i>2</i>			<i>0"</i>	<i>0</i>	<i>2</i>		
1/4 L " ... ..		<i>4</i>			<i>9.449"</i>	<i>9.45</i>	<i>4</i>		<i>37.80</i>
F.P. ... ..		<i>1</i>			<i>78.741"</i>	<i>78.74</i>	<i>1</i>		<i>78.74</i>
Total ... ..				<i>571.86</i>					<i>183.67</i>
Correction = $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{388.19}{18} \times .75 - .2132 = + 11.58$									
If limited on account of midship superstructure. <i>-5368</i> If limited to maximum allowance of 1 1/2 ins. per 100ft.									

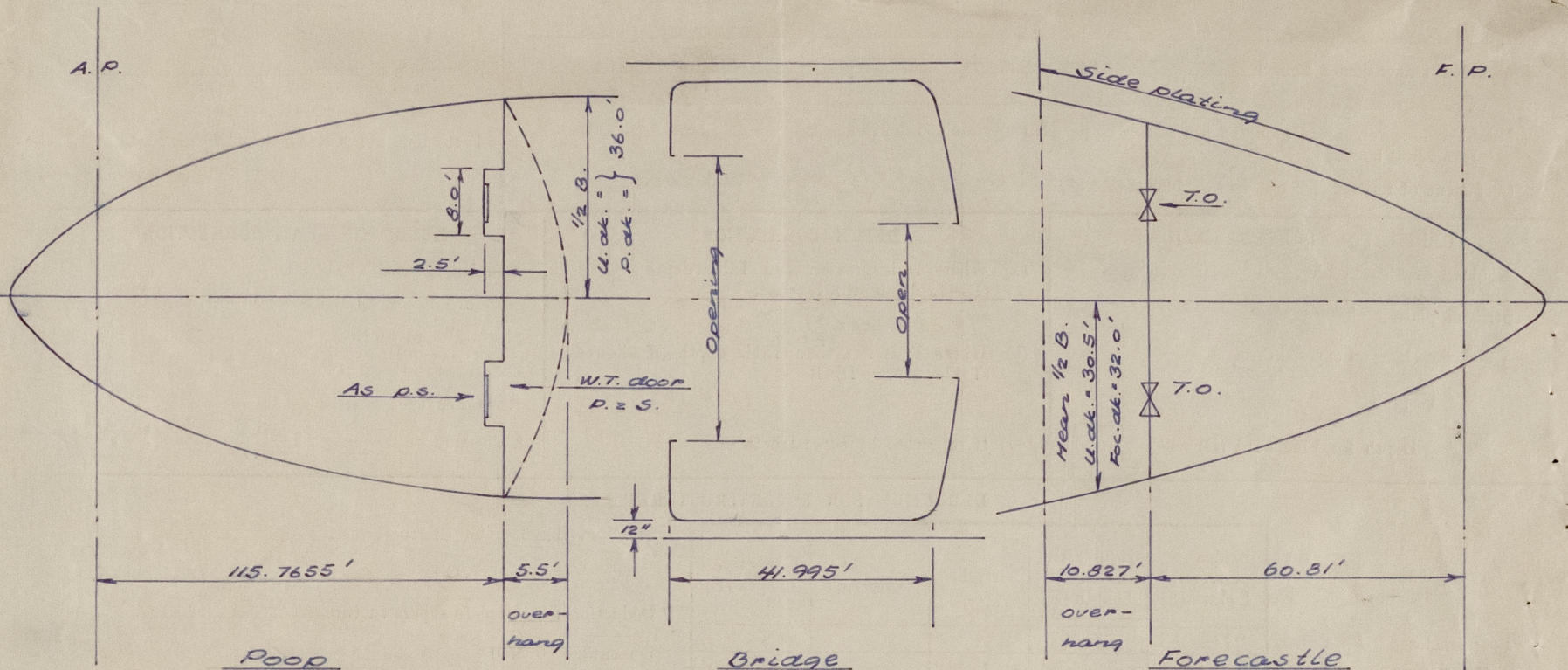
Deduction for Tropical Freeboard.	Deduction for Fresh Water.	TABULAR FREEBOARD corrected for Flush Deck (if required)
Addition for Winter and Winter North Atlantic Freeboard.		Correction for coefficient <i>1.438</i> <i>1.36</i>
Depth to Freeboard Deck = <i>39.33</i>	Displacement in salt water at summer load water line	Depth Correction ... .. <i>10.92</i>
Summer freeboard = <i>9.28</i>	$\Delta =$	Deduction for superstructures ... .. <i>12.08</i>
Moulded draught (d) = <i>30.06</i>	Tons per inch immersion at summer load water line	Sheer correction ... .. <i>11.58</i>
Keel allowance =	T =	Round of Beam correction ... .. <i>.01</i>
Extreme draught =	Deduction = $\frac{\Delta}{40 T}$ inches	Correction for Thickness of Deck amidships ... ..
Deduction for Tropical freeboard and addition for =		Other corrections, scantlings, etc. ... ..
Winter freeboard = $\frac{d}{4}$ inches = <i>7.51 = 191</i>		
Addition for Winter North Atlantic Freeboard (if required) = <i>7.51 + 5.35 = 12.86 = 327</i>		
		Summer Freeboard = <i>111.36 = 2828</i>

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, <i>Wood, Steel, Deck</i> :-			
Tropical Fresh Water Line above Centre of Disc	<i>380</i>	Tropical Fresh Water Freeboard	<i>2450</i>
Fresh Water Line " "	<i>190</i>	Fresh Water " "	<i>2640</i>
Tropical Line " "	<i>190</i>	Tropical " "	<i>2640</i>
Winter Line below " "	<i>190</i>	Winter " "	<i>3020</i>
Winter North Atlantic Line " "	<i>325</i>	Winter North Atlantic " "	<i>3155</i>



No. 150.

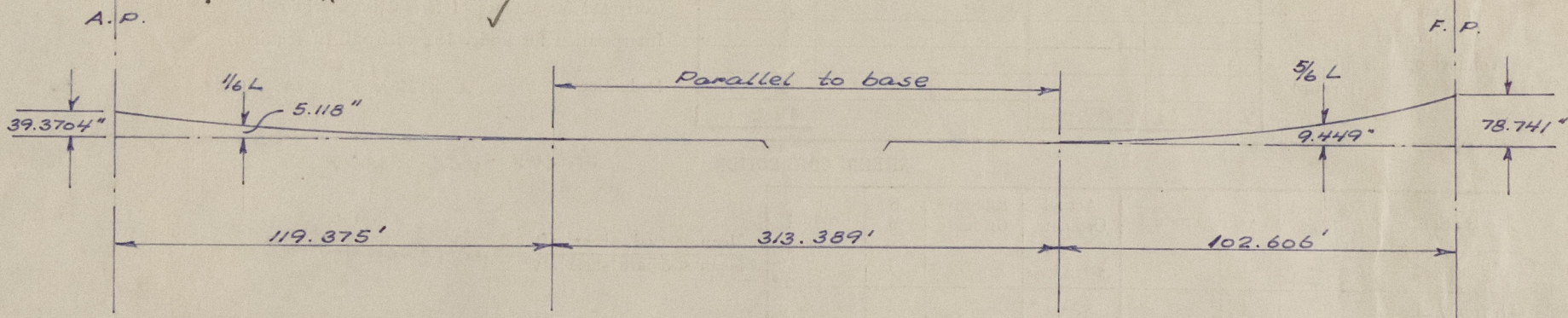
A new form should be prepared if any alterations that affect the freeboard have been made. If no such alterations have been made, the Surveyor should endorse the form on this side with his signature and the date.



Poop  
height 8.0'  
Length at side = 115.77 ✓  
less  $\frac{8 \times 2.5}{36} = .56$  ✓  
Equiv = 115.21 ✓  
Equiv  $\eta_4 = .56$  ✓

Bridge  
height 8.0'  
Equiv length of open  
bridge =  $42 \times \frac{70}{72} = 40.84$  ✓

Forecastle  
height varying due to  
sheer, but nowhere less  
than 7.5'.



Sheer Profile.

Sheer aft (assuming poop deck parallel to upper deck).

Virtual sheer at AP =  $39.37 + 6 = 45.37$  ✓

" "  $\frac{1}{6} = 5.12 + \left[ 6 \times \left( \frac{26.54}{115.77} \right)^2 \right] = 5.44$  ✓

Trade of ship

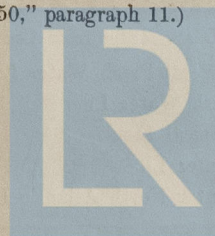
Names of sister ships

Builder's name and yard number

Owners

Fee £

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



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Foundation