

# LLOYD'S REGISTER OF SHIPPING

UNITED WITH THE BRITISH CORPORATION REGISTER

## SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

F-11838

|                                                                                                 |                               |                                                                |                                   |                                                                         |                                      |
|-------------------------------------------------------------------------------------------------|-------------------------------|----------------------------------------------------------------|-----------------------------------|-------------------------------------------------------------------------|--------------------------------------|
| Ship's Name<br><b>"LOZOVAYA"</b>                                                                | Official Number<br><b>983</b> | Nationality and Port of Registry<br><b>Russian,<br/>Odessa</b> | Gross Tonnage<br><b>23,138.63</b> | Date of Build<br><b>Sept.,<br/>1963</b>                                 | Port of Survey<br><b>Aioi, Japan</b> |
| Moulded Dimensions: Length <b>639.78'</b> Breadth <b>88.58'</b> Depth <b>47.25'</b>             |                               |                                                                |                                   | Date of Survey<br><b>Whilst Building</b>                                |                                      |
| Freeboard Length <b>639.78'</b> to centre of stock                                              |                               |                                                                |                                   | Surveyor's Signature <b>Hector McLean</b><br>H. McLean                  |                                      |
| Moulded displacement at moulded draught = 85 per cent. of moulded depth <b>52,380</b> Eng. tons |                               |                                                                |                                   | Particulars of Classification <b>+100A1 Oil Tanker<br/>Contemplated</b> |                                      |
| Coefficient of fineness for use with Tables <b>0.805</b>                                        |                               |                                                                |                                   |                                                                         |                                      |

|                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                |
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| <b>DEPTH FOR FREEBOARD (D).</b><br>Moulded depth ... <b>47.25'</b><br>Stringer plate ... <b>27mm</b> ... <b>.09'</b><br>Sheathing on exposed deck <b>None</b><br>$T \left( \frac{L-S}{L} \right) =$<br>Depth for Freeboard (D) = <b>47.34</b> | <b>DEPTH CORRECTION.</b><br>(a) Where D is greater than Table depth<br>(D—Table depth) R =<br>$(47.34 - 42.65) \times 3 = +14.07"$<br>(b) Where D is less than Table depth (if allowed)<br>(Table depth—D) R =<br>If restricted by superstructures | <b>ROUND OF BEAM CORRECTION.</b><br>Moulded Breadth (B) <b>88.58'</b><br>Standard Round of Beam = $\frac{B \times 12}{50} =$ <b>21.26"</b><br>Ship's Round of Beam <b>Equiv.</b> = See Sketch over<br>Difference <b>20.39"</b><br>Restricted to <b>0.87"</b><br>Correction = $\frac{\text{Diff}^2}{4} \times \left( 1 - \frac{S_1}{L} \right) =$ <b>+0.14"</b> |
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## DEDUCTION FOR SUPERSTRUCTURES.

|                     | Mean Covered Length (S) | Equivalent Enclosed Length (S <sub>1</sub> ) | Least Height ft | Height Correction | Effective Length (E) |
|---------------------|-------------------------|----------------------------------------------|-----------------|-------------------|----------------------|
| Poop enclosed ...   | <b>140.59</b>           | <b>140.59</b>                                | <b>8.53</b> at  | <b>cr. -</b>      | <b>140.59</b>        |
| " overhang ...      |                         |                                              |                 |                   |                      |
| R.Q.D. enclosed ... |                         |                                              |                 |                   |                      |
| " overhang ...      |                         |                                              |                 |                   |                      |
| Bridge enclosed ... |                         |                                              |                 |                   |                      |
| " overhang aft ...  |                         |                                              |                 |                   |                      |
| " overhang forward  |                         |                                              |                 |                   |                      |
| F'cle enclosed ...  | <b>75.58</b>            | <b>75.58</b>                                 | <b>7.44</b> at  | <b>side</b>       | <b>74.98</b>         |
| " overhang ...      |                         |                                              |                 |                   |                      |
| Trunk aft... ..     |                         |                                              |                 |                   |                      |
| " forward ...       |                         |                                              |                 |                   |                      |
| Tonnage opening aft |                         |                                              |                 |                   |                      |
| " " forward ...     |                         |                                              |                 |                   |                      |
| Total ...           | <b>216.17</b>           | <b>216.17</b>                                |                 |                   | <b>216.57</b>        |

Standard Height of Superstructure **7.5'**  
 " " R.Q.D. **-**  
 Deduction for complete superstructure **42"**  
 Percentage covered  $\frac{S}{L} =$  **33.79**  
 " "  $\frac{S_1}{L} =$  **33.69**  
 " "  $\frac{E}{L} =$  **33.69**  
 Percentage from Table, Line A. Tanker = **24.69**  
 (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 = **42 x 0.2469 = 10.37"**

## SHEER CORRECTION.

| Station             | Standard Ordinate | S M      | Product       | Actual Ordinate | Effective Ordinate | S M      | Product      |
|---------------------|-------------------|----------|---------------|-----------------|--------------------|----------|--------------|
| A.P. ...            | <b>73.98</b>      | <b>1</b> | <b>73.98</b>  | <b>14.69"</b>   | <b>14.69</b>       | <b>1</b> | <b>14.69</b> |
| 1/6 L from A.P. ... | <b>32.92</b>      | <b>4</b> | <b>131.68</b> | <b>0</b>        | <b>0</b>           | <b>4</b> | <b>0</b>     |
| 2/6 L " ...         | <b>8.14</b>       | <b>2</b> | <b>16.28</b>  | <b>0</b>        | <b>0</b>           | <b>2</b> | <b>0</b>     |
| Amidships ...       | <b>0</b>          | <b>4</b> | <b>0</b>      | <b>0</b>        | <b>0</b>           | <b>4</b> | <b>0</b>     |
| 2/6 L from F.P. ... | <b>16.27</b>      | <b>2</b> | <b>32.54</b>  | <b>0</b>        | <b>0</b>           | <b>2</b> | <b>0</b>     |
| 1/6 L " ...         | <b>65.84</b>      | <b>4</b> | <b>263.36</b> | <b>0.87"</b>    | <b>0.87</b>        | <b>4</b> | <b>3.48</b>  |
| F.P. ...            | <b>147.96</b>     | <b>1</b> | <b>147.96</b> | <b>24.06"</b>   | <b>24.06</b>       | <b>1</b> | <b>24.06</b> |
| Total ...           |                   |          | <b>665.80</b> |                 |                    |          | <b>42.23</b> |

Mean actual sheer aft = **14.69**  
 Mean standard sheer aft = **14.69**  
 Mean actual sheer forward = **0.87**  
 Mean standard sheer forward = **0.87**  
 Length of enclosed superstructure forward of amidships = **140.59**  
 " " aft of " = **74.98**  
 Correction =  $\frac{\text{Difference between sums of products}}{18} \left( 75 - \frac{S}{2L} \right) = \frac{(628.57 - 2.34)}{18} \left( 75 - \frac{1690}{2 \times 639.78} \right) = +18.77"$   
 If limited on account of midship superstructure. **32.31**  
 If limited to maximum allowance of 1 1/2 ins. per 100 ft.

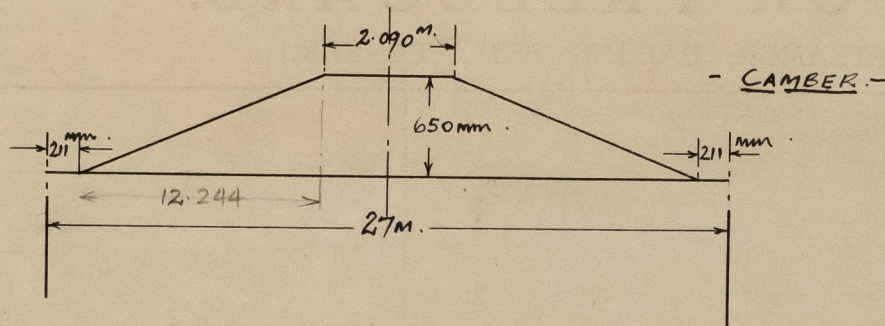
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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| <b>Deduction for Tropical Freeboard.</b><br><b>Addition for Winter and Winter North Atlantic Freeboard.</b><br>Depth to Freeboard deck = <b>47.34</b><br>Summer freeboard = <b>12.20</b><br>Moulded draught (d) = <b>35.05</b><br>Keel allowance = <b>0</b><br>Extreme draught = <b>0</b><br>Deduction for Tropical freeboard and addition for Winter freeboard = <b>8.76 = 8 3/4"</b><br>Addition for Winter North Atlantic Freeboard (if required) = <b>8.76 + 6.40 = 15.16 = 15 1/4"</b> | <b>Deduction for Fresh Water.</b><br>Displacement in salt water at summer load water line <b>45081</b><br>Tons per inch immersion at summer load water line <b>117.03</b><br>Deduction = $\frac{\Delta}{40 T}$ inches = <b>9.63 = 9 3/4"</b><br>See over also "Hydrostatic Curves" | <b>TABULAR FREEBOARD</b> corrected for Flush Deck (if required)<br>Correction for coefficient $\frac{805 + .68}{1.36} = 1.485$<br>Depth Correction ... <b>14.07</b><br>Deduction for superstructures ... <b>10.37</b><br>Sheer correction ... <b>18.77</b><br>Round of Beam correction ... <b>0.14</b><br>Correction for Thickness of Deck amidships... <b>-</b><br>Other corrections, scantlings, etc. ... <b>-</b><br><b>32.98</b> <b>10.37</b> <b>+22.61</b><br>Summer Freeboard = <b>147.59</b> |
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## SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood Steel Deck:—

|                                                | 27 AUG 1963    |                                |                     |
|------------------------------------------------|----------------|--------------------------------|---------------------|
| Tropical Fresh Water Line above Centre of Disc | <b>18 1/2"</b> | Tropical Fresh Water Freeboard | <b>12' - 3 1/2"</b> |
| Fresh Water Line                               | <b>9 3/4"</b>  | Fresh Water                    | <b>10' - 9"</b>     |
| Tropical Line                                  | <b>8 3/4"</b>  | Tropical                       | <b>11' - 5 3/4"</b> |
| Winter Line below                              | <b>8 3/4"</b>  | Winter                         | <b>11' - 6 3/4"</b> |
| Winter North Atlantic Line                     | <b>15 1/4"</b> | Winter North Atlantic          | <b>13' - 0 1/4"</b> |



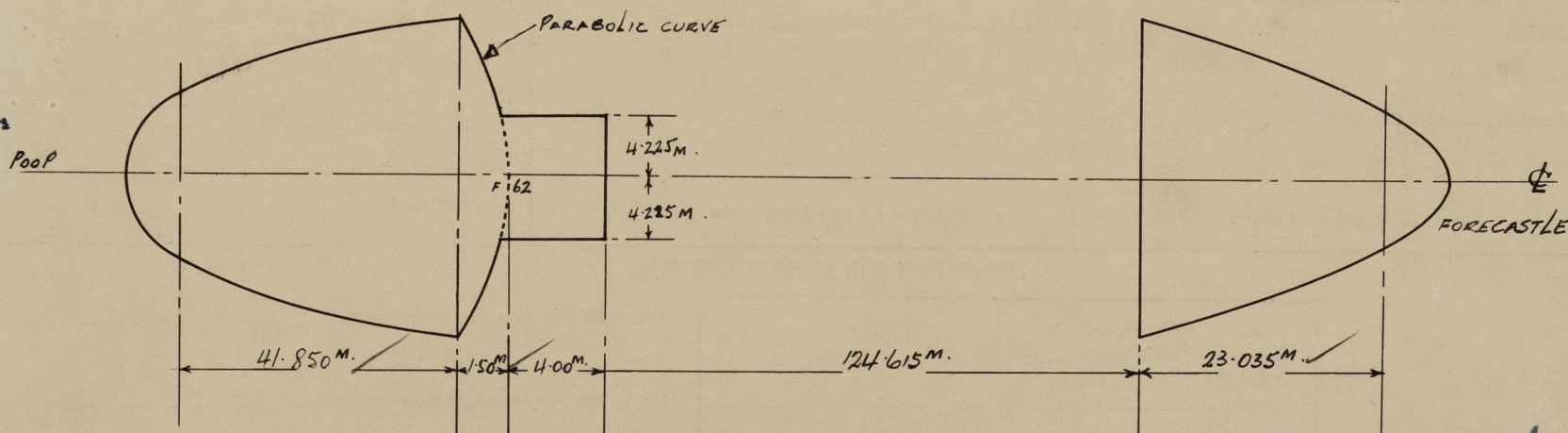
A new form should be prepared if any alterations that affect the freeboard have been made. If no such alterations have been made, the Surveyor should endorse the form on this side with his signature and the date.



Equiv. Camber:

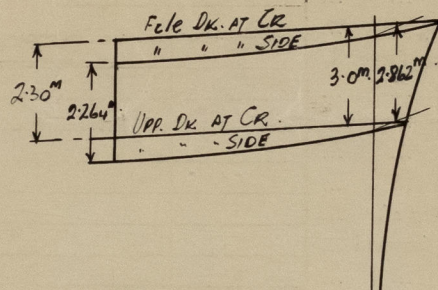
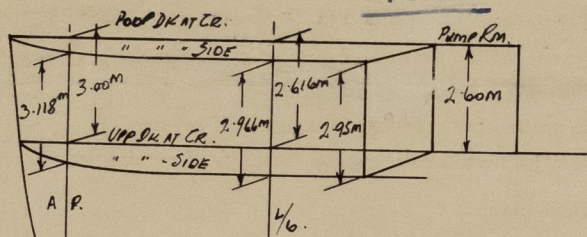
$$\left(\frac{.650}{2} \times 12.244\right) + (.650 \times 1.045) = E \times \frac{2}{3} \times 13.5$$

$$\therefore E = \frac{4.66}{13.5} \times \frac{3}{2} = \frac{518 \text{ mm}}{20.39''}$$



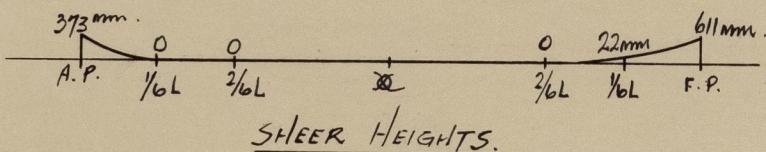
Poop - Mean Cov. Length =  $41.85 + \left(\frac{2}{3} \times 1.5\right)$   
 = 42.85M.  
 = 140.59'

FX. - Mean Covered Length  
 = 23.035 = 75.58'



Sheer Allowance for Poop Excess Ht:

$$\frac{32.76}{3} \times \frac{41.85}{195} = 2.34''$$



SHEER HEIGHTS.

| Mid Draft Feet | Mid Dispt L.Tons | T.P.I. L.Tons |
|----------------|------------------|---------------|
| 37'-0"         | 47,840           | 118.2         |
| 36'-0"         | 46,420           | 117.6         |
| 35'-0"         | 45,010           | 117.0         |
| 34'-0"         | 43,610           | 116.4         |
| 33'-0"         | 42,220           | 115.8         |

35.05'

$$\Delta = 45010 + (.05 \times 1410) = 45081 \text{ T}$$

$$\text{T.P.I.} = 117 + (.05 \times 0.6) = 117.03$$

Trade of ship International, Tanker

Names of sister ships "LISICHANSK" "LENKORAN" "LJUBOTIN" "LIVNY" "YARDNOS" 591, 592, 593, 594

Builder's name and yard number Ishikawajima-Harima Heavy Industries Co., Ltd., Aioi Works, Japan Yard No. 615.

Owners Vsesojuznoje Exportno-Importnoje Objedinenije "SUDOIMPORT", Moscow, U.S.S.R.

Fee £.....

Midship section (approved)  
 Profile & decks (approved)  
 General Arrangement  
 Hydrostatic curves.

