

LLOYD'S REGISTER OF SHIPPING

UNITED WITH THE BRITISH CORPORATION REGISTER

SURVEYS FOR FREEBOARD

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

For LONDON OFFICE ONLY

Received **6 MAR 1957**

Index No.

Govt. Copy

Owners C11

| | | | | | |
|---|-----------------------------|--|--|------------------------------|--|
| Ship's Name <i>m.s. RANA</i> | Official Number <i>✓</i> | Nationality and Port of Registry <i>Netherlands</i> <i>Groningen</i> <i>DELFTZIJL</i> | Gross Tonnage <i>500</i> <i>499.47</i> | Date of Build <i>1957</i> | Port of Survey <i>Groningen</i> |
| Moulded Dimensions: Length <i>47700</i> Breadth <i>8500</i> Depth <i>3584</i> amidships | | | | | Date of Survey <i>March 1957</i> |
| Freeboard Length <i>47400</i> | | | | | Surveyor's Signature <i>[Signature]</i> |
| Moulded displacement at moulded draught = 85 per cent. of moulded depth (excluding bossing) <i>901 m³</i> tons | | | | | Particulars of Classification <i>4100 A1</i> <i>(contemplated)</i> |
| Coefficient of fineness for use with Tables <i>.726</i> | | | | | |

| | | |
|---|---|--|
| DEPTH FOR FREEBOARD (D). Moulded depth ... <i>3584</i> Stringer plate ... <i>(9.4)</i> ... <i>10</i> Wood Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ <i>X</i> Depth for Freeboard (D) = <i>3594</i> | DEPTH CORRECTION. (a) Where D is greater than Table depth (D-Table depth) R = <i>8.33(3.594-3.193) 12.096 = 40</i> (b) Where D is less than Table depth (if allowed) (Table depth-D) R = <i>40</i> If restricted by superstructures | ROUND OF BEAM CORRECTION. Moulded Breadth (B) <i>8500</i> Standard Round of Beam = $\frac{B \times 12}{50} =$ <i>170</i> Ship's Round of Beam = <i>200</i> Difference <i>30</i> Restricted to Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S}{L} \right) = \frac{30}{4} \times .5626 = -4$ |
|---|---|--|

| DEDUCTION FOR SUPERSTRUCTURES. | | | | | |
|--------------------------------|-------------------------|--|------------------|-------------------|----------------------|
| | Mean Covered Length (S) | Equivalent Enclosed Length (S ₁) | Height | Height Correction | Effective Length (E) |
| Poop enclosed ... | <i>11750</i> | <i>11750</i> | <i>2050</i> | <i>✓</i> | <i>11750</i> |
| " overhang ... | <i>—</i> | <i>—</i> | <i>—</i> | <i>—</i> | <i>—</i> |
| R.Q.D. enclosed ... | <i>2200</i> | <i>2200</i> | <i>1000</i> | <i>1028</i> | <i>2140</i> |
| " overhang ... | <i>—</i> | <i>—</i> | <i>—</i> | <i>—</i> | <i>—</i> |
| Bridge enclosed ... | <i>—</i> | <i>—</i> | <i>—</i> | <i>—</i> | <i>—</i> |
| " overhang aft ... | <i>—</i> | <i>—</i> | <i>—</i> | <i>—</i> | <i>—</i> |
| " overhang forward ... | <i>—</i> | <i>—</i> | <i>—</i> | <i>—</i> | <i>—</i> |
| F'cle enclosed ... | <i>7000</i> | <i>7000</i> | <i>2055-1882</i> | <i>✓</i> | <i>7000</i> |
| " overhang ... | <i>—</i> | <i>—</i> | <i>—</i> | <i>—</i> | <i>—</i> |
| Trunk aft ... | <i>—</i> | <i>—</i> | <i>—</i> | <i>—</i> | <i>—</i> |
| " forward ... | <i>—</i> | <i>—</i> | <i>—</i> | <i>—</i> | <i>—</i> |
| Tonnage opening aft ... | <i>—</i> | <i>—</i> | <i>—</i> | <i>—</i> | <i>—</i> |
| " " forward ... | <i>—</i> | <i>—</i> | <i>—</i> | <i>—</i> | <i>—</i> |
| Total ... | <i>20.950</i> | <i>20.950</i> | | | <i>20.890</i> |

Standard Height of Superstructure *1830*
 " " R.Q.D. *1028*
 Deduction for complete superstructure *552*
 Percentage covered $\frac{S}{L} =$ *43.74*
 " " $\frac{S_1}{L} =$ *43.74*
 " " $\frac{E}{L} =$ *43.61*
 Percentage from Table, Line A. *26.57*
 (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 = *552 × .2657 = 147*

| SHEER CORRECTION. | | | | | | | |
|-------------------------------|-------------------|----------|-------------|-----------------|--------------------|----------|-------------|
| Station | Standard Ordinate | S | Product | Actual Ordinate | Effective Ordinate | S | Product |
| A.P. ... | <i>653</i> | <i>1</i> | <i>653</i> | <i>585</i> | <i>805</i> | <i>1</i> | <i>805</i> |
| $\frac{1}{2}$ L from A.P. ... | <i>290</i> | <i>4</i> | <i>1160</i> | <i>188</i> | <i>211</i> | <i>4</i> | <i>844</i> |
| $\frac{3}{4}$ L " ... | <i>73</i> | <i>2</i> | <i>146</i> | <i>-3</i> | <i>-3</i> | <i>2</i> | <i>-6</i> |
| Amidships ... | <i>0</i> | <i>4</i> | <i>0</i> | <i>0</i> | <i>0</i> | <i>4</i> | <i>0</i> |
| $\frac{3}{4}$ L from F.P. ... | <i>145</i> | <i>2</i> | <i>290</i> | <i>182</i> | <i>182</i> | <i>2</i> | <i>364</i> |
| $\frac{1}{2}$ L " ... | <i>580</i> | <i>4</i> | <i>2320</i> | <i>572</i> | <i>572</i> | <i>4</i> | <i>2288</i> |
| F.P. ... | <i>1306</i> | <i>1</i> | <i>1306</i> | <i>1389</i> | <i>1389</i> | <i>1</i> | <i>1389</i> |
| Total ... | | | <i>5875</i> | | | | <i>5634</i> |

Mean actual sheer aft = *> .75 standard*
 Mean standard sheer aft =
 Mean actual sheer forward = *> 1.0*
 Mean standard sheer forward =
 Length of enclosed superstructure forward of amidships = } *28*
 " " aft of " = }
 Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{1911}{18} \left(.75 - .2187 \right) = +6$
 If limited on account of midship superstructure. If limited to maximum allowance of 1½ ins. per 100ft.

| Deduction for Tropical Freeboard. Addition for Winter and Winter North Atlantic Freeboard. Depth to Freeboard Deck = <i>3594</i> Summer freeboard = <i>330</i> Moulded draught (d) = <i>3.264</i> Keel allowance = Extreme draught = Deduction for Tropical freeboard and addition for = Winter freeboard = $\frac{d}{48} = \frac{3264}{48} = 68 \text{ mm} = 7 \text{ cm}$ Addition for Winter North Atlantic Freeboard (if required) = <i>68 + 51 = 119 = 12 cm</i> | Deduction for Fresh Water. Displacement in salt water at summer load water line <i>979 m³</i> Tons per inch immersion at summer load water line $T = 3.455$ Deduction = $\frac{\Delta}{40 T} \text{ inches} = \frac{979}{40 \times 3.455} = 7 \text{ mm} = 7 \text{ cm}$ | TABULAR FREEBOARD corrected for Flush Deck (if required) Correction for coefficient $\frac{.726 + .68}{1.36} = \frac{1.406}{1.36}$ <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th></th> <th>+</th> <th>-</th> </tr> <tr> <td>Depth Correction</td> <td><i>40</i></td> <td><i>—</i></td> </tr> <tr> <td>Deduction for superstructures</td> <td><i>—</i></td> <td><i>147</i></td> </tr> <tr> <td>Sheer correction</td> <td><i>6</i></td> <td><i>—</i></td> </tr> <tr> <td>Round of Beam correction</td> <td><i>—</i></td> <td><i>4</i></td> </tr> <tr> <td>Correction for Thickness of Deck amidships</td> <td><i>—</i></td> <td><i>—</i></td> </tr> <tr> <td>Other corrections, scantlings, etc.</td> <td><i>—</i></td> <td><i>—</i></td> </tr> <tr> <td></td> <td><i>46</i></td> <td><i>151</i></td> </tr> </table> Summer Freeboard = <i>328</i> | | + | - | Depth Correction | <i>40</i> | <i>—</i> | Deduction for superstructures | <i>—</i> | <i>147</i> | Sheer correction | <i>6</i> | <i>—</i> | Round of Beam correction | <i>—</i> | <i>4</i> | Correction for Thickness of Deck amidships | <i>—</i> | <i>—</i> | Other corrections, scantlings, etc. | <i>—</i> | <i>—</i> | | <i>46</i> | <i>151</i> |
|---|--|---|--|---|---|------------------|-----------|----------|-------------------------------|----------|------------|------------------|----------|----------|--------------------------|----------|----------|--|----------|----------|-------------------------------------|----------|----------|--|-----------|------------|
| | + | - | | | | | | | | | | | | | | | | | | | | | | | | |
| Depth Correction | <i>40</i> | <i>—</i> | | | | | | | | | | | | | | | | | | | | | | | | |
| Deduction for superstructures | <i>—</i> | <i>147</i> | | | | | | | | | | | | | | | | | | | | | | | | |
| Sheer correction | <i>6</i> | <i>—</i> | | | | | | | | | | | | | | | | | | | | | | | | |
| Round of Beam correction | <i>—</i> | <i>4</i> | | | | | | | | | | | | | | | | | | | | | | | | |
| Correction for Thickness of Deck amidships | <i>—</i> | <i>—</i> | | | | | | | | | | | | | | | | | | | | | | | | |
| Other corrections, scantlings, etc. | <i>—</i> | <i>—</i> | | | | | | | | | | | | | | | | | | | | | | | | |
| | <i>46</i> | <i>151</i> | | | | | | | | | | | | | | | | | | | | | | | | |

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, ~~Wood~~, Steel, Deck ~~Count~~ at side

| | | | | | |
|--|-----|--------------|--------------------------------|-----|--------------|
| Tropical Fresh Water Line above Centre of Disc | ... | <i>14 cm</i> | Tropical Fresh Water Freeboard | ... | <i>33 cm</i> |
| Fresh Water Line | " | <i>7 cm</i> | Fresh Water | " | <i>26 cm</i> |
| Tropical Line | " | <i>7 cm</i> | Tropical | " | <i>26 cm</i> |
| Winter Line below | " | <i>7 cm</i> | Winter | " | <i>40 cm</i> |
| Winter North Atlantic Line | " | <i>12 cm</i> | Winter North Atlantic | " | <i>45 cm</i> |

Rana.

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.

At moulded draught 3230mm, displacement 962.5 m^3 (moulded) = $3,455 \text{ m}^3/\text{cm}$

SHEERS AFT.

Standard

| | | |
|-----|---|-------------|
| 653 | 1 | 653 |
| 290 | 3 | 870 |
| 73 | 3 | 219 |
| | | <u>1742</u> |

Actual

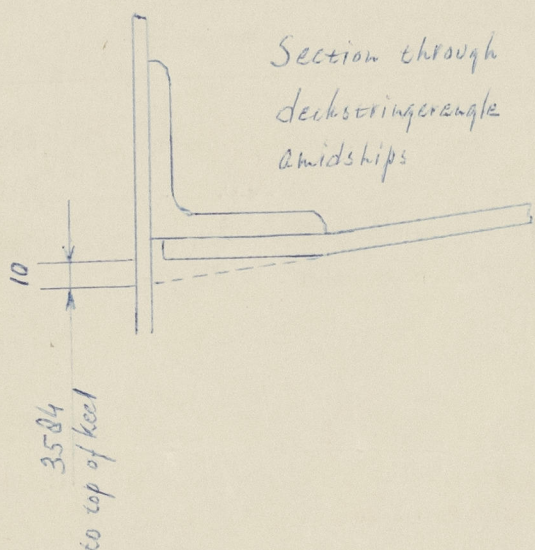
| | | |
|-----|---|-------------|
| 805 | 1 | 805 |
| 211 | 3 | 633 |
| - 3 | 3 | - 9 |
| | | <u>1429</u> |

- 82.01% Standard

Actual height of poop = 2050
 Stand. = 1830
 Excess = 220

Sheer at A.P.P. = $585 + 220 = 805$

Sheer at 4/6 = $188 + 220 \left(\frac{3.76}{11.75} \right) = 211$



Trade of ship Unrestricted trade.

Names of sister ships No sisterships.

Builder's name and yard number Scheepswerf Appingedam no 178.

Owners N.V. Motorschip "JRENE"

Fee £ fl. 190,-

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

Midship section.
Profile and decks.



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 Foundation