

PRELIMINARY
SCANTLING

LLOYD'S REGISTER OF SHIPPING

UNITED WITH THE BRITISH CORPORATION REGISTER

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name <u>NAGOYA N^o 120.</u>	Official Number	Nationality and Port of Registry	Gross Tonnage	Date of Build	Port of Survey
Moulded Dimensions: Length <u>427.57'</u> Breadth <u>58.40'</u> Depth <u>38.39'</u>					Date of Survey <u>1/12/54</u>
Moulded displacement at moulded draught = 85 per cent. of moulded depth (excluding bossing) <u>17,830</u> tons					Surveyor's Signature
Coefficient of fineness for use with Tables <u>.766</u>					Particulars of Classification <u>F100A1</u> <u>contemplation</u>

DEPTH FOR FREEBOARD (D).	DEPTH CORRECTION.	ROUND OF BEAM CORRECTION.
Moulded depth <u>38.39'</u>	(a) Where D is greater than Table depth (D - Table depth) R = <u>(38.47 - 28.50) 3 = +29.91</u>	Moulded Breadth (B) <u>58.40'</u>
Stringer plate <u>.08</u>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = <u>9.97</u>	Standard Round of Beam = $\frac{B \times 12}{50} = \frac{58.40 \times 12}{50} = 14.02$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$	If restricted by superstructures	Ship's Round of Beam = <u>14.25</u> <u>14.17</u>
Depth for Freeboard (D) = <u>38.47</u>		Difference = <u>+0.23</u> <u>.15</u>
		Restricted to
		Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{0.23}{4} \times \left(1 - \frac{9}{15} \right) = -0.05$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed					
" overhang					
R.Q.D. enclosed					
" overhang					
Bridge enclosed					
" overhang aft					
" overhang forward					
F'cle enclosed	<u>29.05</u>	<u>29.05</u>	<u>7.55</u>	<u>✓</u>	<u>29.05</u>
" overhang	<u>3.33</u>	<u>3.05</u>	<u>7.55</u>	<u>✓</u>	<u>3.05</u>
Trunk aft					
" forward					
Tonnage opening aft					
" forward					
Total	<u>32.38</u>	<u>32.10</u>			<u>32.10</u>

Standard Height of Superstructure 7.5

" " R.Q.D. ✓

Deduction for complete superstructure 42.00

Percentage covered $\frac{S}{L} = \frac{7.57}{100} = 7.57$

" " $\frac{S_1}{L} = \frac{7.51}{100} = 7.51$

" " $\frac{E}{L} = \frac{3.76}{100} = 3.76$

Percentage from Table, Line A. (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 = 42.00 \times 1.0376 = -1.58

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	<u>52.76</u>	<u>1</u>	<u>✓</u>	<u>52.76</u>	<u>39.84</u>	<u>39.84</u>	<u>1</u>	<u>✓</u>	<u>39.84</u>
$\frac{1}{4}$ L from A.P.	<u>23.48</u>	<u>4</u>	<u>✓</u>	<u>93.92</u>	<u>14.06</u>	<u>14.06</u>	<u>4</u>	<u>✓</u>	<u>56.24</u>
$\frac{3}{4}$ L "	<u>5.80</u>	<u>2</u>	<u>✓</u>	<u>11.60</u>	<u>✓</u>	<u>✓</u>	<u>2</u>	<u>✓</u>	<u>✓</u>
Amidships	<u>✓</u>	<u>4</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>4</u>	<u>✓</u>	<u>✓</u>
$\frac{3}{4}$ L from F.P.	<u>11.61</u>	<u>2</u>	<u>✓</u>	<u>23.22</u>	<u>17.56</u>	<u>17.56</u>	<u>2</u>	<u>✓</u>	<u>35.12</u>
$\frac{1}{4}$ L "	<u>46.96</u>	<u>4</u>	<u>✓</u>	<u>187.84</u>	<u>42.05</u>	<u>42.05</u>	<u>4</u>	<u>✓</u>	<u>168.20</u>
F.P.	<u>105.51</u>	<u>1</u>	<u>✓</u>	<u>105.51</u>	<u>78.82</u>	<u>78.82</u>	<u>1</u>	<u>✓</u>	<u>78.82</u>
Total				<u>474.85</u>					<u>378.22</u>

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{75-S}{2L} \right) = \frac{96.63}{18} \left(\frac{75-0.0379}{2 \times 427.57} \right) = +3.82$

If limited on account of midship superstructure. ✓

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 = 38.47 Ft.

Summer freeboard = 9.92

Moulded draught (d) = 28.55

Keel allowance = ✓

Extreme draught = ✓

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = ✓

Addition for Winter North Atlantic Freeboard (if required) = ✓

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta =$

Tons per inch immersion at summer load water line

T =

Deduction = $\frac{\Delta}{40 T}$ inches = ✓

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

Depth Correction 29.91 ✓

Deduction for superstructures ✓ 1.58 ✓

Sheer correction 3.82 ✓

Round of Beam correction ✓ .05 .03

Correction for Thickness of Deck amidships ✓ ✓

Other corrections, scantlings, etc. ✓ ✓

80.15 + 1.59

76.6 + 6.8 = 1.446

1.36

81.74 ✓

86.92 ✓

33.73 1.63 + 32.10

Summer Freeboard = 119.02 4

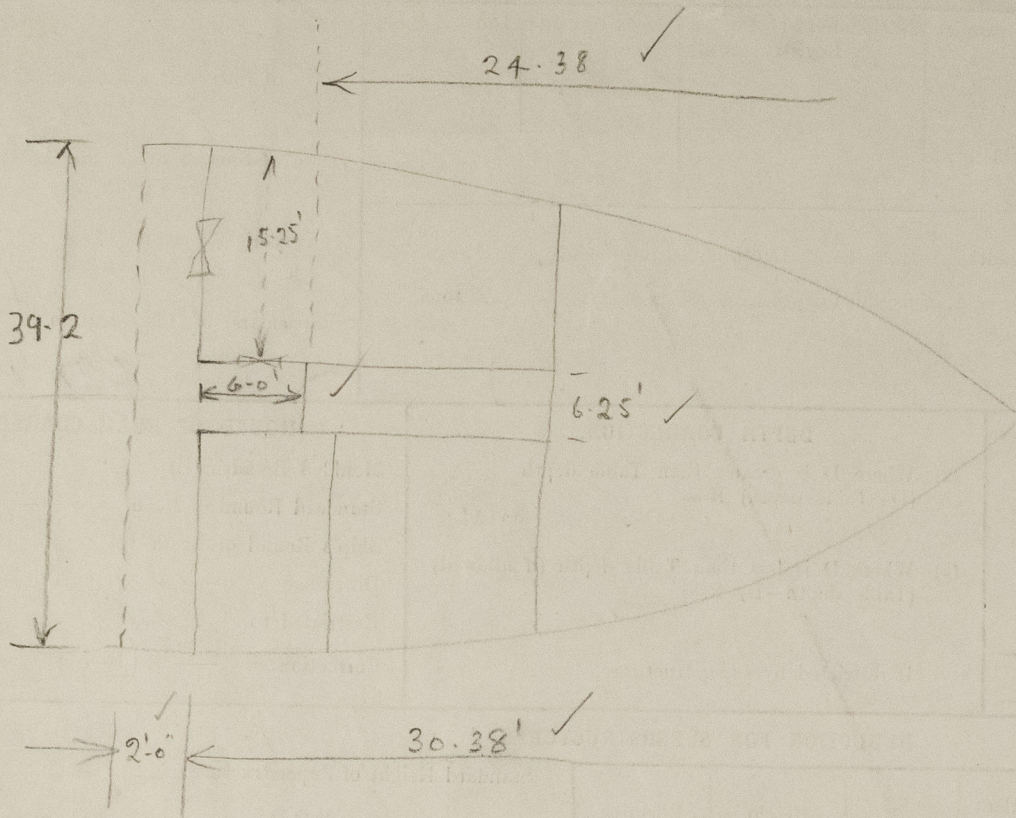
SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck:—

Tropical Fresh Water Line above Centre of Disc
Fresh Water Line	"	...
Tropical Line	"	...
Winter Line below	"	...
Winter North Atlantic Line	"	...

Tropical Fresh Water Freeboard	...
Fresh Water	"
Tropical	"
Winter	"
Winter North Atlantic	"

No. 120.

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.



$$\begin{aligned} \text{Endored length} &= 24.38 \checkmark \\ + \frac{6.0 \times 15.25}{19.6} &= \frac{4.67}{29.05} = \text{equiv length} \checkmark \end{aligned}$$

$$\begin{aligned} O/H &= 2.0 + 1.33 \checkmark \\ &= 3.33 \checkmark \end{aligned}$$

$$\begin{aligned} \text{for column } S_1 &= 3.33 \times 1.9162 \checkmark \\ &= 3.05 \checkmark \end{aligned}$$

$$\begin{aligned} \text{FLUSH DECK PENALTY} &= (4.2757 \times \frac{3}{2}) - \left[\frac{32.10}{42.757} \times (4.2757 \times \frac{3}{2}) \right] \\ &= 6.41 - 4.82 \\ &= \underline{\underline{1.59''}} \end{aligned}$$

Trade of ship _____

Names of sister ships _____

Builder's name and yard number _____

Owners _____

Fee £ _____



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Foundation