

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

MAY 30 1938

Ship's Name FEDERLOCK FEDERAL	Official Number 171162	Nationality and Port of Registry British Shanghai	Gross Tonnage 6868 6607	Date of Build 1918	Port of Survey Osaka
Moulded Dimensions: Length 395.16 ✓ Breadth 55.0 ✓ Depth 34.92 ✓					Date of Survey 13th April to 9th May 1938
Moulded displacement at moulded draught = 85 per cent. of moulded depth 14590 ✓ tons					Surveyor's Signature <i>J. Aspin</i>
Coefficient of fineness for use with Tables .7942 ✓					Particulars of Classification 100 A.1. Shellin DK. with Freeboard (Unimpaired)

Depth for Freeboard (D). Moulded depth ... 34.92 ✓ Stringer plate .4404 ✓ Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ Depth for Freeboard (D) = 34.96 ✓	Depth correction. (a) Where D is greater than Table depth $(D - \text{Table depth}) R =$ $(34.96 - 26.34) \times 3 = 25.86$ ✓ (b) Where D is less than Table depth (if allowed) $(\text{Table depth} - D) R =$ If restricted by superstructures	Round of Beam correction. Moulded Breadth (B) 55.00 ✓ Standard Round of Beam = $\frac{B \times 12}{50} = 13.20$ ✓ Ship's Round of Beam = 10.89 (initial) ✓ Difference 2.31 ✓ Restricted to Correction = $\frac{\text{Diff}^{\circ}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{2.31}{4} \times \frac{55.61}{395.16} = .32$ ✓
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DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...	44.75 ✓	44.75 ✓	7.92	-	44.75 ✓
„ overhang ...					
R.Q.D. enclosed ...					
„ overhang ...					
Bridge enclosed ...	109.5 ✓	109.5 ✓	7.92	-	109.50 ✓
„ overhang aft ...					
„ overhang forward ...					
F'cle enclosed ...	38.00 ✓	21.28 ✓	7.92	-	21.28 ✓
„ overhang ...					
Trunk aft ...					
„ forward ...					
Tonnage opening aft ...					
„ forward ...					
Total ...	192.25 ✓	175.53 ✓			175.53 ✓

Standard Height of Superstructure	7.451 ✓
„ „ R.Q.D.	
Deduction for complete superstructure	41.68 ✓
Percentage covered $\frac{S}{L} =$	48.65 ✓
„ „ $\frac{S_1}{L} =$	44.839 ✓
„ „ $\frac{E}{L} =$	44.839 ✓
Percentage from Table, Line A. (corrected for absence of forecastle (if required))	2 ✓
Percentage from Table, Line B. (corrected for absence of forecastle (if required))	31.33 ✓
Interpolation for bridge less than .2L (if required)	
Deduction =	13.05 ✓

SHEER CORRECTION.

Station	Standard Ordinate	S	Product	Actual Ordinate	Effective Ordinate	S	Product
A.P. ...	49.52	1	49.52	37.75 ✓	37.75 ✓	1	37.75 ✓
1/4 L from A.P. ...	21.03	4	84.12	8.50 ✓	8.50 ✓	4	34.00 ✓
1/2 L „ ...	5.445	2	10.89	-	-	2	-
Amidships ...	0	4	-	-	-	4	-
3/4 L from F.P. ...	10.89	2	21.78	-	-	2	-
1/4 L „ ...	44.06	4	176.24	19.00 ✓	19.00 ✓	4	76.00 ✓
F.P. ...	99.03	1	99.03	90.00 ✓	90.00 ✓	1	90.00 ✓
Total ...			445.58				237.75 ✓

Mean actual sheer aft = **deficient**
 Mean standard sheer aft =

Mean actual sheer forward = $\frac{18.4}{33} = 56\%$ DEFICIENT
 Mean standard sheer forward = $\frac{55.71\% \text{ OF STANDARD.}}$

Length of enclosed superstructure forward of amidships = L
 „ „ aft of „ =

FORWARD SHEER
 STANDARD ACTUAL
 10.89 3 32.67 ✓ 19.00 3 57.00 ✓
 44.06 3 132.18 ✓ 90.00 1 90.00 ✓
 99.03 1 99.03 ✓ 263.88 ✓ 147.00 ✓
 55.71% ✓

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{207.83}{18} \left(.75 - \frac{2432}{2 \times 395.16} \right) = +5.85$ ✓
 If limited on account of midship superstructure. If limited to maximum allowance of 1 1/2 ins. per 100 ft.

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = **34.96** ✓
 Summer freeboard = **7.90** ✓
 Moulded draught (d) = **27.06** ✓

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = $\frac{27.06}{4} = 6.77 = 6 \frac{3}{4}$ ✓

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 = $\frac{\Delta}{40T}$ inches = $\frac{6.77}{40 \times 14.59} = 6 \frac{3}{4}$ ✓

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{.7942 \times 68}{1.26} \times 70 = 70.00$ ✓

Depth Correction ... **25.86** ✓
 Deduction for superstructures ... **13.05** ✓
 Sheer correction ... **5.85** ✓
 Round of Beam correction ... **.32** ✓
 Correction for Thickness of Deck amidships ...
 Other corrections, scantlings, etc. ...

Summer Freeboard = **94.787** ✓

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

Tropical Fresh Water Line above Centre of Disc ... **13 1/2** ✓
 Fresh Water Line „ „ ... **6 3/4** ✓
 Tropical Line „ „ ... **6 3/4** ✓
 Winter Line below „ „ ... **6 3/4** ✓
 Winter North Atlantic Line „ „ ...

Tropical Fresh Water Freeboard ... **7.10 3/4** ✓
 Fresh Water „ „ ... **6.9 1/2** ✓
 Tropical „ „ ... **7.4** ✓
 Winter „ „ ... **7.4** ✓
 Winter North Atlantic „ „ ... **8.5 1/2** ✓

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 RECEIVED

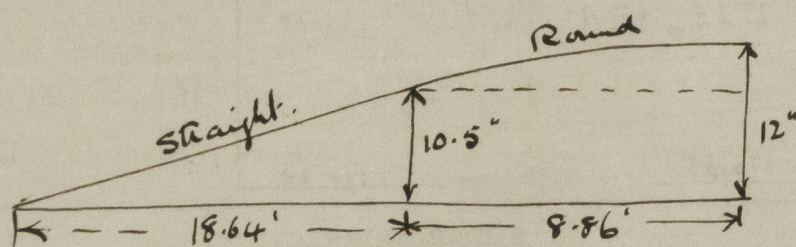
Federlock.

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.

IS: REGISTER.



Camber



$$\begin{aligned}
 \text{Round of Beam } & \frac{18.64 \times 12 \times 10.5}{2} = 1174 \\
 & 8.86 \times 12 \times 10.5 = 1116 \\
 & 8.86 \times 12 \times 1.5 \times \frac{2}{3} = \frac{106}{2396} \\
 & \frac{2396}{\frac{2}{3} \times 27.5 \times 12} = 10.89''
 \end{aligned}$$

Trade of ship

Clean going.

Names of sister ships

Builder's name and yard number

The Federal Shipbuilding Co. yard N^o. 2.

Owners

G.E. Marden, Shanghai.

Fee

£ 437.14.



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