

Lloyd's Register of Shipping.
SURVEYS FOR FREEBOARD.

BIRKER FORCE

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having a R.Q.D - BRIDGE & FORECASTLE.

(Type of Superstructures.)

Port of Survey

Cardiff

Date of Survey

30th Dec 1932 & 3rd Jan 1933

Ship's Name

ELLOUGHTON

Nationality and Port of Registry

British
Llanwale

Official Number

142761

Gross Tonnage

954

Date of Build

1919-1/10

Name of Surveyor

Wm. Rennie.

Particulars of Classification

+100A1

S.S. Act. No. 3-12-31.

Moulded Dimensions: Length 200' 6" Breadth 32' 6" Depth 15' 08 3/4"
Moulded displacement at moulded draught = 85 per cent. of moulded depth 1776 tons
Coefficient of fineness for use with Tables .758

Depth for Freeboard (D)

Moulded depth ... 15' 08 3/4"

Stringer plate ... 42"

Sheathing on exposed deck

$$T \left(\frac{L-S}{L} \right) =$$

Depth for Freeboard (D) = 15' 12"

Depth correction

(a) Where D is greater than Table depth

$$(D - \text{Table depth}) R = (15.12 - 13.33) 1.538 = +2.75$$

(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) 32' 00"

$$\text{Standard Round of Beam} = \frac{B \times 12}{50} = 7.68$$

$$\text{Ship's Round of Beam} = 8"$$

$$\text{Difference} = .32$$

$$\text{Restricted to}$$

$$\text{Correction} = \frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.32}{4} \times .2252 = .0181$$

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 ...	118' 12 1/2"	118' 12 1/2"	4' 2 1/2"		118' 12 1/2"
" overhang ...					
Bridge enclosed ...	13' 12 1/2"	13' 12 1/2"	7' 5 1/2"		13' 12 1/2"
" overhang aft ...					
" overhang forward ...	22' 4 1/2"	22' 4 1/2"	6' 7 1/2"		22' 4 1/2"
F'cle enclosed ...	25' 00"	25' 00"	1' 2 1/2"		25' 00"
" overhang ...	2' 5 1/2"	1' 2 1/2"	+2' 3 1/2" wood		1' 2 1/2"
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" forward ...					
Total ...	156' 2 1/2"	154' 9 1/2"			154' 9 1/2"

Standard Height of Superstructure

6' 0"

R.Q.D. 3' 6 1/2"

Deduction for complete superstructure 26' 00"

Percentage covered $\frac{S}{L} = 78.13\%$ $\frac{S_1}{L} = 77.48\%$ $\frac{E}{L} = 77.48\%$

Percentage from Table, Line A. 72.20%

(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 = 26' 00" x .722 = - 18' 7 1/2"

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	30' 00"	1		30' 00"	36' 00"	42' 9 1/2"	1		42' 9 1/2"
1/4 L from A.P. ...	13' 35"	4		53' 40"	15' 60"	19' 12"	4		76' 48"
3/4 L " ...	3' 30"	2		6' 60"	3' 90"	4' 73"	2		9' 46"
Amidships ...		4		0' 0"	0' 0"		4		
3/4 L from F.P. ...	6' 60"	2		13' 20"	7' 21"	7' 21"	2		14' 42"
1/4 L " ...	26' 70"	4		106' 80"	28' 83"	28' 83"	4		115' 32"
F.P. ...	60' 00"	1		60' 00"	66' 00"	66' 00"	1		66' 00"
Total ...				270' 00"					324' 64"

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{54' 64"}{18} \times (.75 - .3906) = -1' 09"$$

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 = 19' 37"

Summer freeboard = 4' 8 1/2"

Moulded draught (d) = 14' 5 1/2"

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = 3' 6 3/4"

Addition for Winter North Atlantic Freeboard (if required) = 2'

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

= 3 3/4"

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{.758 + .68}{1.36} = 1.438$

Depth Correction ... 2' 7 1/2"

Deduction for superstructures ... 18' 7 1/2"

Sheer correction ... 1' 09"

Round of Beam correction02"

Correction for Thickness of Deck amidships ... 51' 00"

Other corrections, scantlings, etc. ...

53' 75" 19' 88" + 33' 87"

Summer Freeboard = 58' 29"

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

Tropical Fresh Water Line above Centre of Disc ... 7 1/2"

Fresh Water Line " " ... 3 3/4"

Tropical Line " " ... 3 3/4"

Winter Line below " " ... 3 3/4"

Winter North Atlantic Line " " ... 5 3/4"

Tropical Fresh Water Freeboard ... 4' - 10 1/4"

Fresh Water " " ... 4' - 2 3/4"

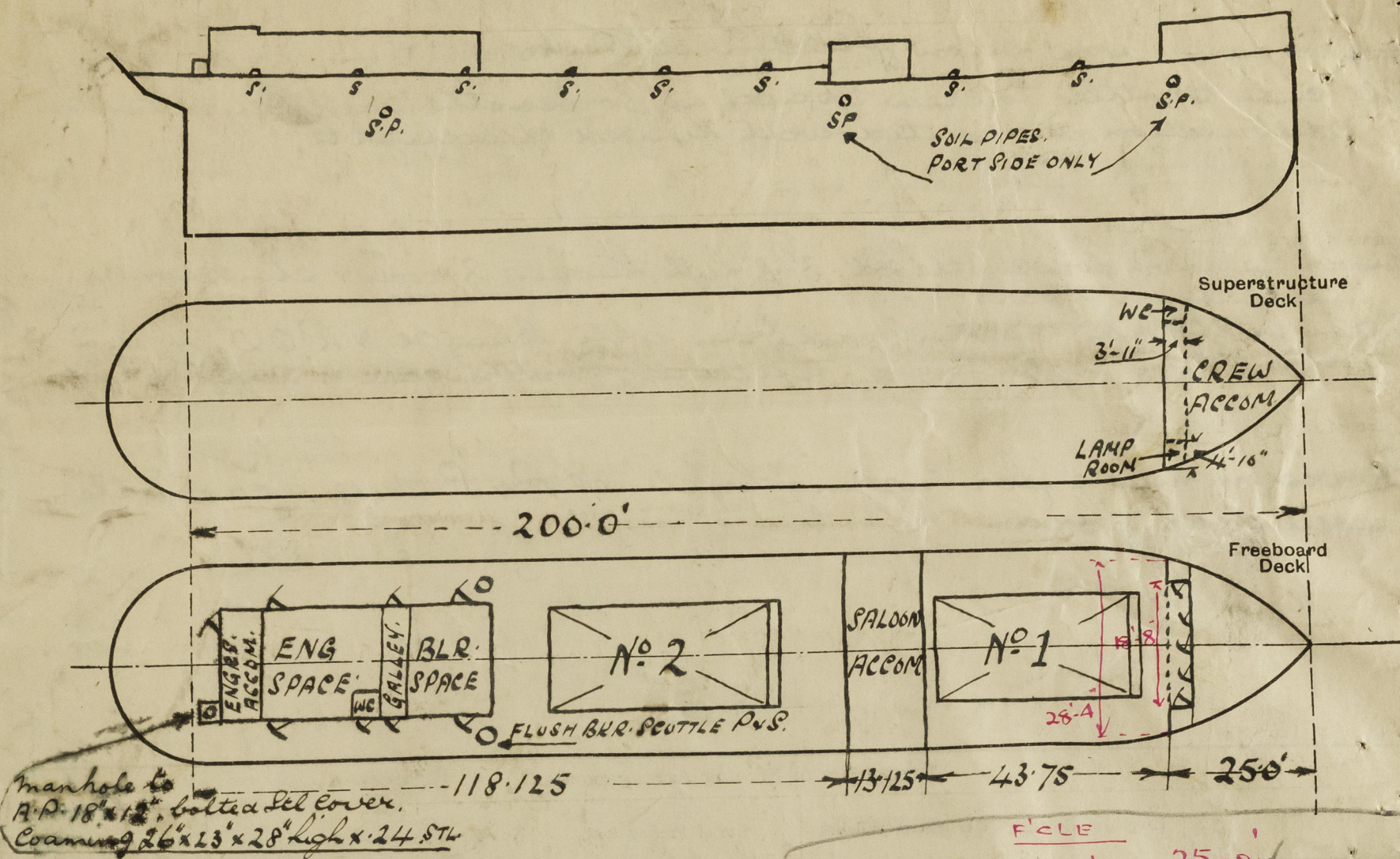
Tropical " " ... 4' - 6 1/2"

Winter " " ... 4' - 6 1/2"

Winter North Atlantic " " ... 5' - 2"

Winter North Atlantic " " ... 5' - 4"

Superstructure bulkheads, trunks, deckhouses, casings, cargo and coaling hatchways, extent and thickness of sheathing of the freeboard deck, gangway, cargo and coaling ports, and any other openings, etc., which would affect the seaworthiness of the ship are to be shewn on the following sketches:—



$$\begin{aligned} \text{F.C.L.E.} &= 25.0' \\ \text{DEDUCT } \frac{18.67 \times 3.92}{28.33} &= \frac{2.58}{22.42} \text{ Equiv.} \end{aligned}$$

State any special features in the construction of the ship:—

The following information was taken from the displacement scale:

Draft	Long Displacement
14-5 3/4"	2015
14-3"	1980
14-0"	1942
13-9"	1907.

Vessel measured whilst in dry dock.

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$$\begin{aligned} 8' 6'' \text{ wld} &= 12.82 \checkmark \\ \text{Keel} &= .14 \checkmark \\ &= 12.96 \checkmark \\ \text{at } 11.40 &= 1548 \checkmark \\ 1.56 \times 12.6 \times 12 &= 236 \checkmark \\ &= 1548 \checkmark \\ &= 1784 \checkmark \\ &= 1776 \checkmark \end{aligned}$$

Builder's name and yard number

Goole L.B. & Repairing Co. Ltd.

Names of sister ships

OWNERS

W.A. Phillips.

Fee £

6 : 16 : 0

Received by me

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