

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ann. Rpt. No. 22799.

Ship's Name LANARKBROOK.	Official Number 183210	Nationality and Port of Registry British London.	Gross Tonnage 982 940	Date of Build 1950.	Port of Survey London.
Moulded Dimensions: Length 200.5 Breadth 31.5 Depth 14.25					Date of Survey Whilst building.
Moulded displacement at moulded draught = 85 per cent. of moulded depth 1629 tons					Surveyor's Signature J. S. Milne.
Coefficient of fineness for use with Tables 745					Particulars of Classification 100 A.1. <i>(Class contemplated)</i>

DEPTH FOR FREEBOARD (D).				
Moulded depth	...	...	...	14.3
Stringer plate	...	...	...	.35
Sheathing on exposed deck	...	...	...	.03
$T \left(\frac{L-S}{L} \right) = \text{None.}$				
Depth for Freeboard (D) = 14.28				

DEPTH CORRECTION.	
(a) Where D is greater than Table depth (D - Table depth) R =	$(14.28 - 13.36) \times 0.92 = +1.42"$
(b) Where D is less than Table depth (if allowed) (Table depth - D) R =	0.92
If restricted by superstructures <input checked="" type="checkbox"/>	

ROUND OF BEAM CORRECTION.	
Moulded Breadth (B)	31.5'
Standard Round of Beam = $\frac{B \times 12}{50}$	$\frac{31.5 \times 12}{50} = 7.56"$
Ship's Round of Beam	8"
Difference	.44
Restricted to	
Correction = $\frac{\text{Diff.}}{4} \times \left(1 - \frac{S_1}{L} \right)$	$\frac{.44}{4} \times .2528 = .03"$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed <i>AT SIDE.</i>	51.48		7.3		
" overhang <i>AT E.</i>	54.8				
R.Q.D. enclosed	112.9	112.75	4.0	✓	112.75
" overhang	14.97				
Bridge enclosed <i>AT SIDE</i>	12.9	14.97	7.0	✓	14.97
" overhang					
" overhang forward	17.72				
F'cle enclosed	SEE	17.72	7.0	✓	17.72
" overhang	SKETCH	4.37			4.37
Trunk aft	5.78				
" forward					
Tonnage opening aft					
" " forward					
Total	151.22	149.81			149.81

Standard Height of Superstructure	6.00'
" " R.Q.D.	3.670'
Deduction for complete superstructure	26.05"
Percentage covered $\frac{S}{L} =$	75.42
" " $\frac{S_1}{L} =$	74.72
" " $\frac{E}{L} =$	
Percentage from Table, Line A. AB	68.80
(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 = $26.05 \times .6880 =$	17.92"

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P.	30.05	1	30.05	20.14	83.25	1	83.25
$\frac{1}{2}$ L from A.P.	13.37	4	53.48	7.14	18.50	4	74.00
$\frac{3}{8}$ L	3.31	2	6.62	2.34	3.22	2	6.44
Amidships	✓	4	✓	✓	✓	4	✓
$\frac{3}{8}$ L from F.P.	6.61	2	13.22	9	9.00	2	18.00
$\frac{1}{2}$ L	26.74	4	106.96	32.12	32.50	4	130.00
F.P.	60.10	1	60.10	75.14	75.25	1	75.25
Total			270.43				387.94

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{117.51}{18} \left(.75 - \frac{3771}{7529} \right) = -2.43"$

If limited on account of midship superstructure.

Mean actual sheer aft =
Mean standard sheer aft =

Mean actual sheer forward =
Mean standard sheer forward =

Length of enclosed superstructure forward of amidships =
" " aft of " =

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to ~~Freeboard~~ Deck = **18.28** Ft.
Summer freeboard = **4.44**
Moulded draught (d) = **13.84**

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = **3.46** $\frac{3}{4}$ "Addition for Winter North Atlantic Freeboard (if required) = **5 1/2"**

Deduction for Fresh Water.

Displacement in salt water at summer load water line
 $\Delta = 1894$
Tons per inch immersion at summer load water line
 $T = 12.77$
Deduction = $\frac{\Delta}{40 T}$ inches
= **3.71**
= **3 3/4"**

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

	+	-
Depth Correction	1.42	✓
Deduction for superstructures	✓	17.92
Sheer correction	✓	2.43
Round of Beam correction	✓	.03
Correction for Thickness of Deck amidships	48.00	✓
Other corrections, scantlings, etc.	✓	✓

49.422038 + 29.04
Summer Freeboard = **53.33**

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 " "

4.5 1/4"
3.10 1/4"
4.1 1/2"
4.2 3/4" (Limited)
4.1 3/4"
4.10 1/4"
Lloyd's Register Foundation

Sanarkbrook.

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.

Bridge at centre = 16.08 ✓
 side = $\frac{12.75}{3.33 \times \frac{2}{3}} = \frac{12.75}{2.22} = 5.74$ ✓
 14.97 = Equiv. Load. ✓

Natural shear at A.P. : 20.25
 Height of R.O.Dth : 48.00
 Height of Poop : 87.00

 155.25
 Standard Height of Poop = 72.00

 83.25

(A) Shear at Peep Funt. : 3.00 "
 Excess Ht of R.O.D. , 3.96 "
6.96"
 Virtual shear at A.P. = $6.96 \times \left(\frac{100.25}{48.87} \right)^2$
 = 29.29 "
 $\frac{1}{6} L$ = 13.03 "
 $\frac{1}{3} L$ = 3.22 "

Allowing shear at A.P. = 83.25" the initial
shear was at $\frac{1}{6}$ from A.P. by a curve
running from A.P. tangential to pericardial
shear line (P)

- Virtual shear $\phi_t = 83.25^\circ, 18.50^\circ, 3.22^\circ$.

File $\frac{1}{10} = 20.05$

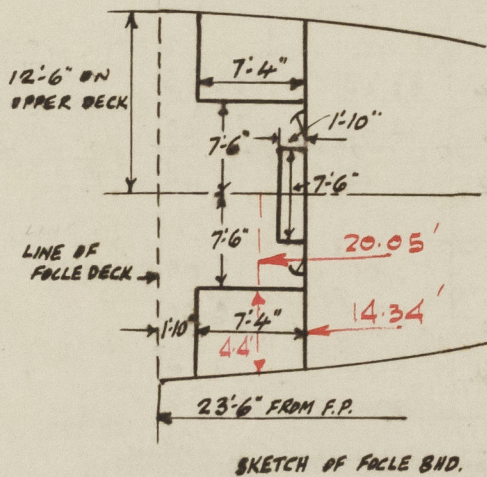
① within $\frac{1}{10}$.

Length to bulkhead: $14.34'$

$$\begin{array}{r} 5.71 \times 4.4 \\ \hline 12 \end{array} = 2.09'$$
$$\begin{array}{r} 1.83 \times 7.5 \\ \hline 2 \times 10.5 \end{array} = .65$$
$$\begin{array}{r} 17.08 \\ \hline 2.97 \end{array}$$

② Weight $\frac{1}{10}$.

$$\begin{array}{r} 1.62 \times 5 \\ \hline 12.6 \end{array} = .64$$
$$\begin{array}{r} 17.72 \\ \hline 2.81 \end{array}$$
$$\begin{array}{r} 2.97 \\ 2.81 \\ \hline 5.78 \end{array}$$



Trade of ship boasting.

Names of sister ships Leicesterbrook, Lancasterbrook.

Builder's name and yard number *Messrs J. Lewis & Sons Ltd N° 223.*

Owners Masses Longstaff (bombers) & Co.

Fee £ 14 . 0 . 0 .