

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

B.T. COPY.

Ship's Name **"TRADER"** Official Number **166310** Nationality and Port of Registry **BRITISH LIVERPOOL.** Gross Tonnage **6089** Date of Build **1940**

Port of Survey **GLASGOW**

Date of Survey **WHILE BUILDING**

Surveyor's Signature **R. Dunsmeir**

Particulars of Classification **+100A1 (CONTEMPLATED)**

Moulded Dimensions: Length **419.04** Breadth **54.29** Depth **32.58**
to centre of middle stow.

Moulded displacement at moulded draught = 85 per cent. of moulded depth **13640** tons

Coefficient of fineness for use with Tables **.758**

Depth for Freeboard (D).	Depth correction.	Round of Beam correction.
Moulded depth ... 32.58	(a) Where D is greater than Table depth (D-Table depth) R = $(32.62 - 27.13) \times 3 = +14.07$	Moulded Breadth (B) 54.29
Stringer plate ... 0.44	(b) Where D is less than Table depth (if allowed) (Table depth-D) R =	Standard Round of Beam = $\frac{B \times 12}{50} = 13.03$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) = N/L.$	If restricted by superstructures	Ship's Round of Beam = 16 1/2
Depth for Freeboard (D) = 32.62		Difference 3.47
		Restricted to
		Correction = $\frac{\text{Diff}^2}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{3.47^2}{4} \times \frac{4803}{4} = -1.42$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...	37.88	37.88	7'-11 1/2"	-	37.88
" overhang ...					
R.Q.D. enclosed					
" overhang					
Bridge enclosed (see sketch)	127.97	127.97	7'-11 1/2"	-	127.97
" overhang aft	7.40	7.40			7.40
" overhang forward	1.75	.87			.87
Fore enclosed	43.67	43.67	7'-11 1/2"	-	43.67
" overhang					
Trunk aft					
" forward					
Tonnage opening aft					
" forward					
Total	221.13	217.79			217.79

Standard Height of Superstructure **7.5'**

" " R.Q.D. **✓**

Deduction for complete superstructure **42"**

Percentage covered $\frac{S}{L} = 52.77$

" " $\frac{S_1}{L} = 51.97$

" " $\frac{E}{L} = 51.97$

Percentage from Table, Line A. **✓**
(corrected for absence of forecastle (if required))

Percentage from Table, Line B. **37.97**
(corrected for absence of forecastle (if required))

Interpolation for bridge less than 2L (if required) **✓**

Deduction = $42 \times 37.97 = -15.95$

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	51.90	1	51.90	66.25	66.25	1	66.25		66.25
1/2 L from A.P. ...	23.10	4	92.40	29.38	29.38	4	117.52		117.52
1/2 L " ...	57.1	2	114.2	8.12	8.12	2	16.24		16.24
Amidships ...	-	4	-	0	-	4	-		-
1/2 L from F.P. ...	11.42	2	22.84	16.50	16.50	2	33.00		33.00
1/2 L " ...	46.20	4	184.80	60.75	60.75	4	243.00		243.00
F.P. ...	103.81	1	103.81	138.0	138.00	1	138.00		138.00
Total			467.17				614.01		

Mean actual sheer aft =
Mean standard sheer aft = } *excess*

Mean actual sheer forward =
Mean standard sheer forward = }

Length of enclosed superstructure forward of amidships = **> 1**

" " aft of " = **> 1**

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{75-S}{2L} \right) = \frac{146.84}{18} \left(\frac{75-2638}{4862} \right) = -3.97$

If limited on account of midship superstructure.

If limited to maximum allowance of 1 1/2 ins. per 100 ft.

Deduction for Tropical Freeboard.	Deduction for Fresh Water.	TABULAR FREEBOARD corrected for Flush Deck (if required)
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient $\frac{758+68}{1.36} = \frac{1.438}{1.36}$
Depth to Freeboard Deck = 32.62	$\Delta = 12979$	Depth Correction ... 14.07
Summer freeboard = 6.31	Tons per inch immersion at summer load water line	Deduction for superstructures ... 15.95
Moulded draught (d) = 26.31	T = 45.7	Sheer correction ... 3.97
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 6.58 = 6 1/2	Deduction = $\frac{\Delta}{40T}$ inches = 7.10 = 7"	Round of Beam correction42
Addition for Winter North Atlantic Freeboard (if required) =	Full Dr ² 26'-6" Disp ^(S.W) 12979 T.P.I. 45.7	Correction for Thickness of Deck amidships ...
		Other corrections, scantlings, etc. ...
		Summer Freeboard = 75.67

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"	Tropical Fresh Water Freeboard ...	6'-3 3/4"
Fresh Water Line " " ...	7"	Fresh Water " " ...	5'-2 1/4"
Tropical Line " " ...	6 1/2"	Tropical " " ...	5'-8 3/4"
Winter Line below " " ...	6 1/2"	Winter " " ...	5'-9 1/4"
Winter North Atlantic Line " " ...		Winter North Atlantic " " ...	6'-10 1/4"

12 NOV 1940

Trader.

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.

$$\begin{array}{rcl}
 \text{For'd bhd. to after end of sidehouses} & 137.25' & \checkmark \\
 \text{Less } \frac{15.75 \times 32}{54.29} & = & \frac{- 9.28}{127.97} \checkmark \\
 & & \text{equivalent endow} \\
 \text{Equivalent Overhang aft.} & \frac{9.28}{.58} & \checkmark \\
 & 9.86 & \checkmark
 \end{array}$$

Trade of ship International Trade.
 Names of sister ships Similar in design to "SETTLER"
 Builder's name and yard number Charles Connell & Co. Ltd. No. 30
 Owners Charente S. S. Co. Ltd. (L. J. Harrison)

Est Fee £ 16 : 0 : 0
 Preliminary Freeb^d assigned 17.29.8.39.
 Freeboard request attached.

Approved Plans Mid Section, Profile, Decks & Hatch Webs
 Forwarded for reference.

