

Assurance 36362
Diligent 36391

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER)

Shd. 1526.

NOV -8 1940

Index. No. 36410
(For London Office only).

B.T. COPY.

Ship's Name CAUTIOUS PRUDENT Admiralty Tug	Official Number Not assigned 18 2199	Nationality and Port of Registry British Not assigned HARWICH	Gross Tonnage 597.	Date of Build 1940.	Port of Survey Hull.
Moulded Dimensions: Length 142'-6" Breadth 33'-0" Depth 16'-0"					Date of Survey While building
Moulded displacement at moulded draught = 85 per cent. of moulded depth 1010. tons					Surveyor's Signature J. Macleod
Coefficient of fineness for use with Tables .68 (553 actual)					Particulars of Classification * 100 A-1. "FOR TOWING SERVICES". Contemplated.

Depth for Freeboard (D).	Depth correction.	Round of Beam correction.
Moulded depth ... 16'-0"	(a) Where D is greater than Table depth $(D - \text{Table depth}) R = (16-03 - 9-50) \times 1.096 = +7.16"$	Moulded Breadth (B) 33'-0"
Stringer plate03	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = 6.53	Standard Round of Beam = $\frac{B \times 12}{50} = 7.92"$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ ✓	If restricted by superstructures ✓	Ship's Round of Beam = 9"
Depth for Freeboard (D) = 16'-03"		Difference 1.08"
		Restricted to ✓
		Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{1.08}{4} \times 72.13 = .19$

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 ...	27.08	27.08	7'-0"	✓	27.08
F'cle enclosed Equival	SEE SKETCH				
" overhang ...	25.25	12.62		✓	12.62
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" forward ...					
Total ...	52.33	39.70			39.70

Standard Height of Superstructure	6'-00"
" " R.Q.D.	✓
Deduction for complete superstructure	20.25
Percentage covered $\frac{S}{L} =$	36.73
" " $\frac{S_1}{L} =$	27.87
" " $\frac{E}{L} =$	27.87
Percentage from Table, Line A.	13.94
(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 = $20.25 \times 13.94 =$	-2.82"

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P.	14.25	1	24.25	19.50	29.50	1	29.50
$\frac{1}{4}$ L from A.P. ...	10.79	4	43.16	12.33	12.33	4	49.32
$\frac{3}{8}$ L " ...	2.67	2	5.34	2.92	2.92	2	5.84
Amidships ...	—	4	—	—	—	4	—
$\frac{3}{4}$ L from F.P. ...	5.34	2	10.68	8.08	8.08	2	16.16
$\frac{1}{8}$ L " ...	11.58	4	86.32	29.67	29.67	4	118.68
F.P.	48.50	1	48.50	73.75	73.75	1	73.75
Total ...			118.25				293.25

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{75-S}{2L} \right) = \frac{75-00}{18} \left(\frac{75-1836}{2} \right) = -236$
If limited on account of midship superstructure. **Yes, no allowance**

Sheer measured from a line parallel to the designed-twin waterline

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

Mean actual sheer forward =
Mean standard sheer forward = } **Nie.**

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

Deduction for Tropical Freeboard.	Deduction for Fresh Water.	TABULAR FREEBOARD corrected for Flush Deck (if required)	14.53
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient Nie	14.53
Depth to Freeboard Deck = 16'-03"	$\Delta = 1078$	Depth Correction ... 7.16	
Summer freeboard = 1'-57"	Tons per inch immersion at summer load water line	Deduction for superstructures ... 2.82	
Moulded draught (d) = 14'-16"	$T = 8.69$	Sheer correction19	
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 3'-54" = 3 1/2"	Deduction = $\frac{\Delta}{40 T}$ inches = 3"	Round of Beam correction19	
Addition for Winter North Atlantic Freeboard (if required) = 5 1/2"	MLO DRAFT. EXT DISP. T.P.I.	Correction for Thickness of Deck amidships ... 3.82	
	14'-4 1/2" 1100 8.75	Other corrections, scantlings, etc. to be compared to the position of the lowest side scuttles	
	13'-4 1/2" 996 8.45		
	12'-4 1/2" 892 8.30		
		Summer Freeboard = 22.50	

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

Tropical Fresh Water Line above Centre of Disc ...	3"	Tropical Fresh Water Freeboard ...	1'-10 1/2"
Fresh Water Line " " ...	3"	Fresh Water " " ...	1'-7 1/2"
Tropical Line " " ...	Nie	Tropical " " ...	1'-10 1/2"
Winter Line below " " ...	Nie	Winter " " ...	1'-10 1/2"
Winter North Atlantic Line " " ...	2"	Winter North Atlantic " " ...	2'-0 1/2"

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Prudent.

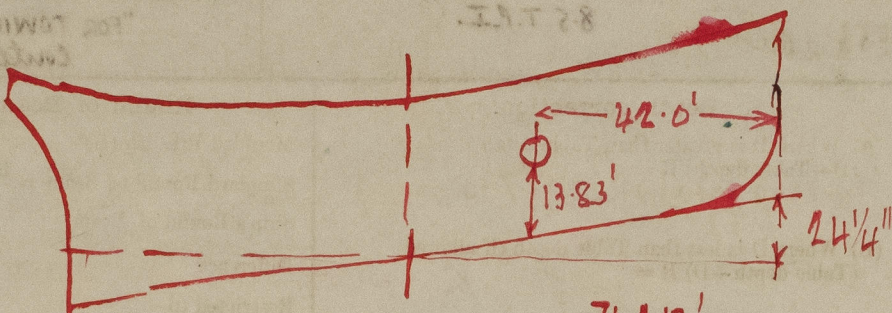
A new form should be prepared if any alterations that affect the freeboard have been made. If no such alterations have been made, the Surveyor should endorse the form on this side with his signature and the date.

Forecastle $28 + 24.33 = 52.33$

Heels $8.25 \times 16.5 = 136.125$
 $\frac{136.125}{24.75} = 5.50$

24.33
 + 8.25
 32.58
 Heels 5.50
 27.08

52.33
 27.08
 25.25



71.25'
 - 42.00'
 29.25'

$\frac{2.02}{71.25} \times 29.25 = .83$
 13.83

14.66
 - .50
 14.16'

Height limited
 to

Trade of ship for towing services.

Names of sister ships "ASSURANCE" - "DILIGENT"

Builder's name and yard number Messrs Lochrane & Sons Ltd. yard No 1218.

Owners The Admiralty

Fee £ To be charged with first entry.

[Handwritten signature and stamp]



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