

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, ~~SAILING SHIP, TANKER.~~)

Ship's Name BOLTONHALL.	Official Number 160775	Nationality and Port of Registry British, West Hartlepool	Gross Tonnage 1935	Date of Build 12 mo.	Port of Survey
Moulded Dimensions: Length 408.00' Breadth 54.54' Depth 36.08'					Date of Survey 21.4.41
Moulded displacement at moulded draught = 85 per cent. of moulded depth tons					Surveyor's Signature
Coefficient of fineness for use with Tables .775 estimated					Particulars of Classification +100A1 with freeboard.

Depth for Freeboard (D).		Depth correction.		Round of Beam correction.	
Moulded depth ...	36.08'	(a) Where D is greater than Table depth (D - Table depth) R = $(36.13 - 27.20) \times 3 = +26.79''$		Moulded Breadth (B)	54.54'
Stringer plate58	(b) Where D is less than Table depth (if allowed) (Table depth - D) R =		Standard Round of Beam = $\frac{B \times 12}{50}$	13.09''
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$	✓			Ship's Round of Beam	13.50''
Depth for Freeboard (D) =	36.13'	If restricted by superstructures	✓	Difference Excess	.41''
				Restricted to	
				Correction = $\frac{\text{Diff}^*}{4} \times \left(1 - \frac{S_1}{L} \right)$	= $\frac{.41}{4} \times \frac{4154}{100} = -.09$

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 ...					
Fore enclosed ...	34.50	34.50	7.0'	7.94.5	32.40
.. overhang ...					
Trunk aft ...					
.. forward ...					
Tonnage opening aft ...					
.. forward ...					
Total ...	34.50	34.50			32.40

Standard Height of Superstructure **7.5'**
" " R.Q.D. **✓**
Deduction for complete superstructure **42.00''**
Percentage covered $\frac{S}{L} = 8.46$
" " $\frac{S_1}{L} = 8.46$
" " $\frac{E}{L} = 7.89$
Percentage from Table, Line A. **3.94**
(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 = **42.00 x .0394 = -1.65''**

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	50.80	1		50.80	52.50	50.80	1		50.80
$\frac{1}{4}$ L from A.P. ...	22.61	4		90.44	22.50	22.61	4		90.44
$\frac{2}{4}$ L " ...	5.59	2		11.18	5.80	5.59	2		11.18
Amidships ...	-	4		-	-	-	4		-
$\frac{3}{4}$ L from F.P. ...	11.17	2		22.34	11.30	11.30	2		22.60
$\frac{1}{4}$ L " ...	45.21	4		180.84	43.50	43.50	4		174.00
F.P. ...	101.60	1		101.60	99.70	99.70	1		99.70
Total ...				457.20					448.72

Mean actual sheer aft = **Excess**
Mean standard sheer aft
Mean actual sheer forward = **Defc.**
Mean standard sheer forward
Length of enclosed superstructure forward of amidships = **Nie.**
" " aft of " = **Nie.**

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{8.48}{18} (.75 - .0423) = .33$
If limited on account of midship superstructure. **✓**
If limited to maximum allowance of $1\frac{1}{2}$ 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 $\frac{775 + .68}{1.36} = 1.455/1.36$
Depth to Freeboard Deck = 36.13'	$\Delta =$	Depth Correction ... 26.79
Summer freeboard = 10.54'	Tons per inch immersion at summer load water line	Deduction for superstructures ... 1.65
Moulded draught (d) = 25.59'	T =	Sheer correction33
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 6.40 = 6\frac{1}{2}''	Deduction = $\frac{\Delta}{40T}$ inches = 7''	Round of Beam correction09
Addition for Winter North Atlantic Freeboard (if required) = ✓		Correction for Thickness of Deck amidships ... 20.64
		Other corrections, scantlings, etc. to correct to a summer moulded draught of 25'-7" (25'-7\frac{1}{2}'' actual)
		Summer Freeboard = 126.54

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

Tropical Fresh Water Line above Centre of Disc	...	13\frac{1}{2}''
Fresh Water Line	"	7''
Tropical Line	"	6\frac{1}{2}''
Winter Line	below	6\frac{1}{2}''
Winter North Atlantic Line	"	✓

Tropical Fresh Water Freeboard	...	10'-6\frac{1}{2}''
Fresh Water	"	9'-5''
Tropical	"	9'-11\frac{1}{2}''
Winter	"	10'-0''
Winter North Atlantic	"	✓

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