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Rpt. C.11 (Comp.).

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Lloyd's Register of Shipping.

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SURVEYS FOR FREEBOARD.

GRON. N° 74.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name M.V. "BUG"	Official Number 169830	Nationality and Port of Registry BRITISH POLISH Gdynia LONDON	Gross Tonnage 499.40	Date of Build 1939/8	Port of Survey GRONINGEN
Moulded Dimensions: Length 47.000 Breadth 8.320 Depth 3.500					Date of Survey 1-8-39
Moulded displacement at moulded draught = 85 per cent. of moulded depth 797 1/3 tons					Surveyor's Signature <i>V. F. Hehrnuy</i>
Coefficient of fineness for use with Tables .685					Particulars of Classification T100A1 "STRENGTHENED FOR NAVIGATION IN ICE" CLASS CONTEMPLATED.

Depth for Freeboard (D).	Depth correction.	Round of Beam correction.
Moulded depth ... 3.500	(a) Where D is greater than Table depth (D - Table depth) R = 8.33(3.508 - 3.133) 11.87 = + 37 mm	Moulded Breadth (B) 8.320
Stringer plate ... 82	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = 375	Standard Round of Beam = $\frac{B \times 12}{50} =$ 166 mm
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ ✓	If restricted by superstructures ✓	Ship's Round of Beam = 250 mm
Depth for Freeboard (D) = 3.508		Difference 84 mm
		Restricted to
		Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{84}{4} \times \frac{2643}{4} = -6 mm$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed ...	12180	12180	1990	✓	12180	Standard Height of Superstructure 1830 mm
" overhang ...			940	✓		" " R.Q.D. 1022 mm
R.Q.D. enclosed ...	16200	16200	1050	✓	16200	Deduction for complete superstructure 544 mm
" overhang ...						Percentage covered $\frac{S}{L} = 74.72$
Bridge enclosed ...						" $\frac{S_1}{L} = 73.57$
" overhang aft ...						" $\frac{E}{L} = 73.57$
" overhang forward ...						Percentage from Table, Line A. 67.39
F'cle enclosed ...	5660	5660	2200	✓	5660	(corrected for absence of forecastle (if required))
" overhang ...	1000	540			540	Percentage from Table, Line B. ✓
Trunk aft ...						(corrected for absence of forecastle (if required)) ✓
" forward ...						Interpolation for bridge less than 2L (if required) ✓
Tonnage opening aft ...						Deduction = 544 × .6739 = 367 mm
" forward ...						
Total ...	35120	34580			34580	

SHEER CORRECTION.

Station	Standard Ordinate	S	Product	Actual Ordinate	Effective Ordinate	S	Product	
A.P. ...	646	1	646	715	948	1	948	Mean actual sheer aft = Express
1/2 L from A.P. ...	287	4	1148	345	422	4	1688	Mean actual sheer forward = Express
2/3 L " ...	72	2	144	90	104	2	208	Mean standard sheer aft = Express
Amidships ...	-	4	-	0	-	4	-	Mean standard sheer forward = Express
2/3 L from F.P. ...	143	2	286	200	200	2	400	Length of enclosed superstructure forward of amidships = > .1
1/2 L " ...	574	4	2296	667	667	4	2668	" " aft of " = .5 L
F.P. ...	1291	1	1291	1006	1006	1	1006	
Total ...			5811	4406	400		6918	

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - S}{2L} \right) = \frac{1107(1.75 - .3736)}{18} = 37.64 = 23 mm$

If limited on account of midship superstructure.

Deduction for Tropical Freeboard. Addition for Winter and Winter North Atlantic Freeboard. RAISED QUARTER Depth to Freeboard Deck = 4.558 Summer freeboard = 1.101 Moulded draught (d) = 3.457 Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{48} = 72 mm$ Addition for Winter North Atlantic Freeboard (if required) = 122 mm	Deduction for Fresh Water. Displacement in salt water at summer load water line AT 3.400 M. $\Delta = 955 \text{ Tons. (1.064)}$ Tons per inch immersion at summer load water line $T = 8.21 \text{ Tons.}$ Deduction = $\frac{\Delta}{40T} = 76 mm$	TABULAR FREEBOARD corrected for Flush Deck (if required) Correction for coefficient $\frac{.685 + .68}{1.36} = 1.365$ Depth Correction ... 37 Deduction for superstructures ... 367 Sheer correction ... 23 Round of Beam correction ... 6 Correction for Thickness of Deck amidships ... 1050 Other corrections, scantlings, etc. ... 1087 396 + 691 = 1101 RAISED QUARTER Summer Freeboard = 1101
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SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, ~~Wood~~ Steel Deck:

Tropical Fresh Water Line above Centre of Disc ... 3" 77 mm	Tropical Fresh Water Freeboard ... 3' 4 1/4" 1024 "
Fresh Water Line " " ... 3" 76 "	Fresh Water " " ... 3' 4 1/4" 1025 "
Tropical Line " " ... NIL 1 "	Tropical " " ... 3' 7 1/4" 1100 " (LIMITED)
Winter Line below " " ... 3" 72 "	Winter " " ... 3' 10 1/4" 1173 "
Winter North Atlantic Line " " ... 5" 122 "	Winter North Atlantic " " ... 4' 0 1/4" 1223 "

M/V. BUG

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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.

Virtual Sheer Aft Sheer at Poop front = 192^{mm}
 Excess height of Raised Quarter Deck over standard = 28^{mm}
 220^{mm}

Virtual Sheer at A.P. = $220 \times \frac{23.5^2}{11.32^2} = 948^{mm}$

Trade of ship. SEA GOING TRADE

Names of sister ships.

Builder's name and yard number. N.V. E.J. SMIT & ZN. AT WESTERBROEK YARD NO 660.

Owners. Messrs ROTHERT & KILACZYSKI, LTD AT Gdynia.

Fee £ fl. 72.00.



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