

LLOYD'S REGISTER OF SHIPPING

UNITED WITH THE BRITISH CORPORATION REGISTER

SURVEYS FOR FREEBOARD

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER)

Received
Index No.
Govt. Copy
Owners C11

Ship's Name "SHETLAND"	Official Number ---	Nationality and Port of Registry DANISH COPENHAGEN	Gross Tonnage 10670	Date of Build 1952	Port of Survey
Moulded Dimensions: Length 156.970 M Breadth 19.510 M Depth 11.730 M ✓ Freeboard Length 157.275 metres 16 E of Rudder Block ✓ Moulded displacement at moulded draught = 85 per cent. of moulded depth 23.100 M³ ✓ (excluding bossing) Coefficient of fineness for use with Tables .755 ✓					Date of Survey 15th June, 1954
					Surveyor's Signature
					Particulars of Classification +100 A1 (C.P.I.B.)

DEPTH FOR FREEBOARD (D).	
Moulded depth	11.730
Stringer plate	.021
Wood Sheathing on exposed deck	
$T \left(\frac{L-S}{L} \right) =$	
Depth for Freeboard (D) =	11.751

DEPTH CORRECTION.	
(a) Where D is greater than Table depth (D-Table depth) R =	8.33 (11.751 - 10.484) 30 = +317mm
(b) Where D is less than Table depth (if allowed) (Table depth-D) R =	✓
If restricted by superstructures	✓

ROUND OF BEAM CORRECTION.	
Moulded Breadth (B)	19.51 M. ✓
Standard Round of Beam = $\frac{B \times 12}{50}$	390 ✓
Ship's Round of Beam	475 ✓
Difference	+85 ✓
Restricted to	
Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right)$	$\frac{85}{4} \times .5917 = -13 \frac{1}{2} \text{mm}$ ✓

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed <i>Equival.</i>	34852	34852	2440		34852
" overhang					
R.Q.D. enclosed					
" overhang					
Bridge enclosed <i>Equival.</i>	11522	11522	2440		11522
" overhang aft					
" overhang forward					
F'cle enclosed	17840	17840	2440		17840
" overhang					
Trunk aft					
" forward					
Tonnage opening aft					
" forward					
Total	64.214	64.214			64.214

Standard Height of Superstructure	2290 mm ✓
" " R.Q.D.	✓
Deduction for complete superstructure	1067 mm ✓
Percentage covered $\frac{S}{L} =$	
" " $\frac{S_1}{L} =$	40.83 ✓
" " $\frac{E}{L} =$	
Percentage from Table, Line A. TANKER	31.83 ✓
(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 =	1067 x .3183 = -340 mm ✓

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	1564	1	1564	1016	1016	1	1016		
$\frac{1}{4}$ L from A.P.	695	4	2780	91	91	4	364		
$\frac{2}{4}$ L	174	2	348	-	-	2	-		
Amidships	0	4	0	0	0	4	0		
$\frac{3}{4}$ L from F.P.	347	2	694	-	-	2	-		
$\frac{1}{4}$ L	1390	4	5560	555	555	4	2220		
F.P.	3128	1	3128	2440	2440	1	2440		
Total			14074				6040		

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 " =

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{8034}{18} \left(.75 - \frac{2042}{2 \times 156.97} \right) = +244 \text{ mm}$ ✓

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.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck	11.751
Summer freeboard	2.650
Moulded draught (d)	9.101
Keel allowance	
Extreme draught	
Deduction for Tropical freeboard and addition for	

Winter freeboard = $\frac{d}{48}$ inches = 190 mm ✓

Addition for Winter North Atlantic Freeboard (if required) = 190 + 129 = 319 mm ✓

Deduction for Fresh Water.

Displacement in salt water at summer load water line	$\Delta = 21033$
Tons per inch immersion at summer load water line	T = 66.69 ✓
Deduction = $\frac{\Delta}{40 T}$ inches	= 7.88" ✓
	= 200 mm ✓

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{.755 + .68}{1.36} = \frac{1.435}{1.36}$ ✓

	+	-
Depth Correction	317	✓
Deduction for superstructures	340	✓
Sheer correction	244	✓
Round of Beam correction	13	✓
Correction for Thickness of Deck amidships	✓	
Other corrections, scantlings, etc.	✓	
	561	353

Summer Freeboard = 2652 mm ✓

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

Tropical Fresh Water Line above Centre of Disc	390 mm ✓
Fresh Water Line	200 " ✓
Tropical Line	190 " ✓
Winter Line below	190 " ✓
Winter North Atlantic Line	320 " ✓

Tropical Fresh Water Freeboard	2260 " ✓
Fresh Water	2450 " ✓
Tropical	2460 " ✓
Winter	2840 " ✓
Winter North Atlantic	2970 " ✓

Shetland.

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.

For equivalent lengths of poop
and bridge see earlier Rpt C11 (comp).
dated 4.12.51.

Trade of ship

Names of sister ships

Builder's name and yard number

Owners

Fee £ : :

List of plans forwarded for reference. (See "Instructions to Surveyors, Part 4, 1950," paragraph 11.)



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Foundation