

22 OCT 1949

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

GRV. REPORT N° 23988.

Ship's Name "NORDBO"	Official Number	Nationality and Port of Registry NORWEGIAN BERGEN.	Gross Tonnage 9063.60	Date of Build 1949.	Port of Survey PORT GLASGOW
Moulded Dimensions: Length 470'0" Breadth 62'0" Depth 35'3" AFT PERP. IS AT CE OF STOCK.					Date of Survey WHILST BUILDING.
Moulded displacement at moulded draught = 85 per cent. of moulded depth 19540. tons					Surveyor's Signature J. J. J.
Coefficient of fineness for use with Tables .783					Particulars of Classification + 100 A.1. CARRYING PETROLEUM IN BULK (CONTEM°).

DEPTH FOR FREEBOARD (D).

Moulded depth ... **35.25**
 Stringer plate ... **.80** ... **.07**
 Sheathing on exposed deck
 $T \left(\frac{L-S}{L} \right) =$
 Depth for Freeboard (D) = **35.32**

DEPTH CORRECTION.

(a) Where D is greater than Table depth
 (D-Table depth) R =
 $(35.32 - 31.33) 3 = 11.97$
 (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) **62.0**
 Standard Round of Beam = $\frac{B \times 12}{50} = 14.88$
 Ship's Round of Beam = **15.50**
 Difference **.62**
 Restricted to
 Correction = $\frac{\text{Diff}^\circ}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.62}{4} \times .6012 = -.09$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed Equivalt	101.57				
" overhang Equivalt	103.7	101.57	7'6"		101.57
R.Q.D. enclosed					
" overhang Equivalt	42.96				
Bridge enclosed Equivalt	44.8	42.96	7'6"		42.96
" overhang aft Equivalt	40.0				
" overhang forward					
F'cle enclosed	42.11	42.92	7'6"		42.92
" overhang					
Trunk aft					
" forward					
Tonnage opening aft					
" forward					
Total	187.45	187.45			187.45

Standard Height of Superstructure **7.50**" " R.Q.D. ☒Deduction for complete superstructure **42.00**

Percentage covered $\frac{S}{L} =$
 $\frac{S_1}{L} =$
 $\frac{E}{L} =$
39.88

Percentage from Table, Line A. Tanker **30.88**
 (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 = $42.00 \times .3088 = 12.97$

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P.	57.00	1	57.00	57.0	57.00	1	57.00
$\frac{1}{8}$ L from A.P.	25.365	4	101.46	25.36	25.375	4	101.50
$\frac{3}{8}$ L	6.27	2	12.54	6.26	6.375	2	12.75
Amidships	-	4	-	0		4	-
$\frac{5}{8}$ L from F.P.	12.54	2	25.08	12.54	12.75	2	25.50
$\frac{7}{8}$ L	50.73	4	202.92	50.74	50.75	4	203.00
F.P.	114.00	1	114.00	114.0	114.00	1	114.00
Total			513.00				513.75

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{.75}{18} (.75 - .1994) = -.02$
 If limited on account of midship superstructure. ☒ **.5506**

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

Mean actual sheer forward
 Mean standard sheer forward = **Excess.**

Length of enclosed superstructure forward of amidships = **Tanker.**
 " " aft of " =

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = **35.32**
 Summer freeboard = **7.10**
 Moulded draught (d) = **28.22**

Deduction for Tropical freeboard and addition for
 Winter freeboard = $\frac{d}{4}$ inches = **7.05 = 7"**

Addition for Winter North Atlantic Freeboard (if required) = **4.70 + 7.05 = 11.75 = 11.74"**

Deduction for Fresh Water.

Displacement in salt water at summer load water line
 $\Delta = 28.0 \times 18206 = 18366$
 Tons per inch immersion at summer load water line
 $T = 28.0 \times 60.33 = 1689.24$
 $T = 29.0 \times 60.83 = 1764.07$
 Deduction = $\frac{\Delta}{40 T}$ inches
 $= \frac{18366}{40 \times 1689.24} = 7.61$
 $= 7\frac{1}{2}"$

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{.783 + .68}{1.36} = \frac{1.463}{1.36}$

Depth Correction ... **11.97**
 Deduction for superstructures ... **12.97**
 Sheer correction ... **.02**
 Round of Beam correction ... **.09**
 Correction for Thickness of Deck amidships ...
 Other corrections, scantlings, etc. ...

Summer Freeboard = **85.17**

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

Tropical Fresh Water Line above Centre of Disc **14'2" = 368**
 Fresh Water Line " " **7'2" = 190**
 Tropical Line " " **7" = 178**
 Winter Line below " " **7" = 178**
 Winter North Atlantic Line " " **11'3/4" = 298**

Tropical Fresh Water Freeboard **5'10 3/4" = 1797**
 Fresh Water " **6'5 3/4" = 1975**
 Tropical " **6'6 1/4" = 1987**
 Winter " **7'8 1/4" = 2343**
 Winter North Atlantic " **8'1" = 2443**

Nordbo.

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.

Roop.

Ord.	S/m.	Prods.
6.25	1	6.25
6.185	4	24.74
6.0	2	12.00
5.705	4	22.82
5.29	2	10.58
4.76	4	19.04
4.104	2	8.21
3.31	4	13.24
2.39	2	4.78
1.35	4	5.40
0	1	0
		<u>127.06</u>

$$\text{Area } 127.06 \times \frac{30.265}{10 \times 3} = 128.18 \text{ sf}$$

$$\therefore \text{Equivl bhd Ford Fr. 40} = \frac{128.18}{30.265} = 4.24'$$

$$\text{Length at side} = \frac{97.33}{101.57} = \text{equivl length of Roop.}$$

Bridge :-

Ords.	S/m.	Prods.
4.42	1	4.42
4.37	4	17.48
4.25	2	8.50
4.05	4	16.20
3.78	2	7.56
3.35	4	13.40
2.85	2	5.70
2.28	4	9.12
1.60	2	3.20
.80	4	3.20
0	1	0
		<u>88.78</u>

$$\text{Area} = 88.78 \times \frac{3.1}{3} = 91.74 \text{ sf}$$

$$\therefore \text{Equivl bhd ford fr. 127} = \frac{91.74}{31} = 2.96'$$

$$\text{Length at side} = \frac{40.00}{42.96} = \text{equivl encl. bridge.}$$

Trade of ship INTERNATIONAL.

Names of sister ships "CIS BROYIG" & "BERGLJOT"

Builder's name and yard number WM HAMILTON & CO LTD YARD No 480.

Owners H. KUHNLES RADERI A/S. BERGEN.

Fee £ 34 : 0 : 0.



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