14 OCT 1932

pt. C.11.

Index. No. 34211
(For London Office only.)

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having Poop, Bridge & F'cle

(Type of Superstructures.)

Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build
Balwangen	Norwegian Oslo	/	2412	1931/10

Moulded Dimensions: Length 289.50 Breadth 45.50 Depth 20.50

Moulded displacement at moulded draught = 85 per cent. of moulded depth 5044 tons

Coefficient of fineness for use with Tables .769

Port of Survey New Orleans La

Date of Survey July 12th 1932

Name of Surveyor T. G. DODD

Particulars of Classification + 100 A.1.

Depth for Freeboard (D)

Moulded depth	20.50
Stringer plate	.06
Sheathing on exposed deck $T\left(\frac{L-S}{L}\right)$ =	✓
Depth for Freeboard (D) =	20.56

Depth correction

(a) Where D is greater than Table depth (D—Table depth) R =
(20.56 − 19.30) 2.227 = 2.81"

(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)	45.50
Standard Round of Beam = $\frac{B \times 12}{50}$ =	10.92
Ship's Round of Beam =	11.37
Difference	.45
Restricted to	
Correction = $\frac{\text{Diff}^e}{4} \times \left(1-\frac{S_1}{L}\right)$ =	$\frac{45}{4} \times .4873 = .05$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S_1)	Height	Height Correction	Effective Length (E)
Poop enclosed	28.00	28.00	7'-6"	✓	28.00
„ overhang	1.00	.50			.50
R.Q.D. enclosed ...					
„ overhang ...					
Bridge enclosed... ...	84.00	84.00	7'-6"	✓	84.00
„ overhang aft ...	4.00	3.00			3.00
„ overhang forward	2.00	1.00			1.00
F'cle enclosed	30.52	30.52	7'-6"	✓	30.52
„ overhang	2.81	1.40			1.40
Trunk aft					
„ forward					
Tonnage opening aft ...					
„ „ forward					
Total	152.33	148.42			148.42

Standard Height of Superstructure 6.395

„ „ R.Q.D. ✓

Deduction for complete superstructure 34.63"

Percentage covered $\frac{S}{L}$ = 52.62 %

„ „ $\frac{S_1}{L}$ = 51.27 %

„ „ $\frac{E}{L}$ = 51.27 %

Percentage from Table, Line A. ✓

(corrected for absence of forecastle (if required)) ✓

Percentage from Table, Line B. 37.27 %

(corrected for absence of forecastle (if required)) ✓

Interpolation for bridge less than ·2L (if required) ✓

Deduction = 34.63 × .3727 = −12.91"

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P.	38.95	1	38.95	51.50	51.50	1	51.50
1/6 L from A.P. ...	17.33	4	69.32	19.16	19.16	4	76.64
„ ...	4.78	2	8.56	4.79	4.79	2	9.58
Amidships ...	✓	4	✓	✓	✓	4	✓
1/6 L from F.P. ...	8.57	2	17.14	9.33	9.33	2	18.66
1/3 L „ ...	34.66	4	138.64	37.33	37.33	4	149.32
F.P.	77.90	1	77.90	90.50	90.50	1	90.50
Total ...			350.51				396.20

Mean actual sheer aft / Mean standard sheer aft = Excess

Mean actual sheer forward / Mean standard sheer forward = Excess

Length of enclosed superstructure / L forward of amidships = .13

„ „ aft of „ = .14

Correction = $\frac{\text{Difference between sums of products}}{18}\left(.75-\frac{S}{2L}\right)$ = $\frac{45.69}{18} \times (.75 - .2631)$ = $\frac{.4869}{}$ = −1.24

If limited on account of midship superstructure.

If limited to maximum allowance of 1½ ins. per 100 ft.

Deduction for Tropical Freeboard.
Addition for Winter and Winter North Atlantic Freeboard.

	Ft.
Depth to Freeboard Deck =	20.56
Summer freeboard =	2.69
Moulded draught (d) =	17.87

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = $\frac{4.47}{}$ = 4½" = 114 m/m

Addition for Winter North Atlantic Freeboard (if required) = 2" = 51 m/m

Deduction for Fresh Water.

Displacement in salt water at summer load water line

Δ = 5227

Tons per inch immersion at summer load water line

T = 26.91

Deduction = $\frac{\Delta}{40\,T}$ inches = 4.86 = 4¾"

TABULAR FREEBOARD ~~corrected for Flush Deck (if required)~~ 40.88

Correction for coefficient $\frac{.769+.68}{1.36} = \frac{1.449}{1.36}$ 43.55

	+	−
Depth Correction	2.81	✓
Deduction for superstructures	✓	12.91
Sheer correction	✓	1.24
Round of Beam correction	✓	.05
Correction for Thickness of Deck amidships ...	✓	✓
Other corrections, scantlings, etc.	✓	✓
	2.81	14.20

−11.39

Summer Freeboard = 32.16

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, ~~Wood~~, Steel, Deck :— 2'-8¼" = 819 m/m

Tropical Fresh Water Line above Centre of Disc		9¼" = 235 m/m	Tropical Fresh Water Freeboard	1'-11" = 584 m/m
Fresh Water Line	„ „	4¾" = 121 m/m	Fresh Water „	2'-3½" = 698 m/m
Tropical Line	„ „	4½" = 114 m/m	Tropical „	2'-3¾" = 705 m/m
Winter Line	below „	4½" = 114 m/m	Winter „	3'-0¾" = 933 m/m
Winter North Atlantic Line	„ „	6½" = 165 m/m	Winter North Atlantic „	3'-2¾" = 984 m/m

21 OCT 1932

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