

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Index No. **25053**
(For London Office only.)

-3 OCT 1932

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having Awning DeckPort of Survey Oslo

(Type of Superstructures.)

Ship's Name

Nationality and Port of Registry

Official Number

Gross Tonnage

Date of Build

s/s. BESSANorwegian
Tonsberg78151917 1/4Date of Survey 24th 28th Sept. 1932Name of Surveyor Geo. WebsterMoulded Dimensions: Length 410.0 ✓ Breadth 56.0 ✓ Depth 41.0 ✓
Moulded displacement at moulded draught = 85 per cent. of moulded depth 18,468 tons
Coefficient of fineness for use with Tables .808Particulars of Classification + 100 A.1.
Shelter Deck with freeboard.
S.S. No. 3. 3. 29.

Depth for Freeboard (D)

Moulded depth 41.0Stringer plate04

Sheathing on exposed deck

$$T \left(\frac{L-S}{L} \right) =$$

Depth for Freeboard (D) = 41.04

Depth correction

(a) Where D is greater than Table depth
(D - Table depth) R = ✓

$$(41.04 - 27.33) 3 = + 41.13$$

(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) 56.0

$$\text{Standard Round of Beam} = \frac{B \times 12}{50} = 13.44$$

$$\text{Ship's Round of Beam} = 14.0$$

$$\text{Difference} = .56$$

Restricted to ✓

$$\text{Correction} = \frac{\text{Diff}^2}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.56^2}{4} \times 1 = -.14$$

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 ...					
Forecastle enclosed ...					
" overhang ...					
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" forward ...					
Total ...					

Standard Height of Superstructure 7.50 ✓" " R.Q.D. ✓Deduction for complete superstructure 42.00 ✓Percentage covered $\frac{S}{L} =$ " $\frac{S_1}{L} =$ " $\frac{E}{L} =$ Percentage from Table, Line A.
(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 = ✓

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
... ..	51.00	1		51.00	56	56.00	56.00	1	56.00
at A.P. ...	22.69	4		90.76	26	23.70	23.70	4	94.80
" ...	5.61	2		11.22	7	5.92	5.92	2	11.84
ips ...	✓	4		✓	0	✓	✓	4	✓
at F.P. ...	11.22	2		22.44	5	11.06	11.06	2	22.12
" ...	45.39	4		181.56	41	44.24	44.24	4	176.96
" ...	102.00	1		102.00	108	108.00	108.00	1	108.00
Total ...				458.98					469.72

Correction = Difference between sums of products
 $\frac{18}{18} \left(75 - \frac{S}{2L} \right) =$

limited on account of midship superstructure.

$$\frac{10.74}{18} \times .75 = -.45$$

If limited to maximum allowance of $1\frac{1}{2}$ ins. per 100 ft. ✓Correction for Tropical Freeboard.
Correction for Winter and Winter North Atlantic Freeboard.Depth to Freeboard Deck = 41.04 Ft.Summer freeboard = 10.79Moulded draught (d) = 30.25

Correction for Tropical freeboard and addition for

freeboard = $\frac{d}{4}$ inches = 7.56 = 7 1/2

Winter North Atlantic Freeboard (if

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$$\Delta = 15914$$

Tons per inch immersion at summer load water line

$$T = 48.50$$

Deduction = $\frac{\Delta}{40 T}$ inches

$$= 8.20$$

$$= 8\frac{1}{4}$$


TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{808 + .68}{1.36} = 1.488$ Depth Correction 41.13 ✓Deduction for superstructures ✓Sheer correction ✓Round of Beam correction ✓Correction for Thickness of Deck amidships ✓Other corrections, scantlings, etc. ✓Summer Freeboard = 129.33

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

Tropical Fresh Water Line above Centre of Disc 15 3/4 = 400 7/8Fresh Water Line " " 8 1/4 = 210 1/2Tropical Line " " 7 1/2 = 190 1/2Winter Line " " 7 1/2 = 190 1/2Winter North Atlantic Line " " ✓Tropical Fresh Water Freeboard 10' - 9 1/4" = 3283Fresh Water " " 9' - 5 1/2" = 2883Tropical " " 10' - 1" = 3073Winter " " 10' - 1 3/4" = 3093Winter North Atlantic " " 11' - 4 3/4" = 3473

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS															
Description of Hatchway	...	...	No. 1, 2 & 5	No. 3	No. 4	To F.P.	Prs. To Bulkhead	Two Prs. To Bulkhead	Starboard aft. S.S.	Coal Hatch in Cargo top			
Dimensions of Hatchway	...	...	27'11" x 18'1"	9'9" x 18'1"	19'10" x 18'4"	40" x 28 1/2"	3'10 1/2" x 2'11"	3'10 1/2" x 2'3"	3'10" x 2'3"	3'10" x 13'10"			
COAMINGS	Height above Deck Thickness Sides Thickness Ends Stiffeners Brackets, Stays	...	32"	ditto	ditto	24 1/2"	16"	16"	16"	13					
	42								}	.42	.38	.38	.30
		...	7" B.A.												
		...	2												
HATCH BEAMS	Number Spacing Scantling and Sketch 	...	5	1	3										
		...	Equal	Equal	Equal										
		...	24 x .40	ditto	ditto	← none →									
		...	4 x 3 x .42	ditto	ditto										
FORE AND AFTERS	Number Spacing Unsupported Lengths Scantling* and Sketch	...													
		...													
		...	← none →												
		...													
HATCH COVERS	Material Thickness How fitted Bearing Surface	...	Wood			Wood	Wood	Steel	Wood	Wood					
		...	2 7/8"	ditto	ditto	2 1/2"	3"	.32	3" quarter	3"					
		...	F.A.			F.A.	F.A.	hinged wt.	F.A.	F.A.					
		...	2 1/4"			1" all round	1" all round	6" all height, into 1 1/2" on 3 sides	1"	1"					
Spacing of Cleats	...	...	17' 23"	ditto	ditto	19' 29"	18' 24"	18' 21"	24"				
Number of Tarpaulins	...	...	3.			2	2	✓	2	2.			

*Are wood fore and afters steel shod at all bearing surfaces? ✓

Are battens and wedges efficient and in good condition? Yes

Are tarpaulins in good condition and in accordance with rule requirements? Yes

Are lashings provided in accordance with rule requirements? none Yes

Particulars of fiddle, funnel and ventilator coamings:— On top of casing 7'-0" above fuelboard deck in good condition. Fiddle openings closed by hinged steel covers.

Particulars of Flush Bunker Scuttles:— *None*

Particulars of Companionways:— On foreboard deck forward to Store 4'-0" x 2'-9" x 6'-1" high
weather tight steel hinged door 4'-11" x 2'-0", 4 clips opening from both sides, $9\frac{1}{2}$ " sill.

Particulars of Ventilators in exposed positions on freeboard and superstructure decks :—

Sight at 30' d. x .40 x 3'6" high to holds.
Two at 11" d. x .30 x 9'0" " - deep tank (supports).
Two derrick post vents.
Two 13' x .30 x 9'0" high to Bunkies (supports)
" " " " " E.R. Store on "

all have ~~not~~ means
of closing

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks :—

26	goose neck to double bottom tanks to 25" to 30" above deck. to opening
1	" " " fore peak 9" " " " "
4	" " " double bottom tanks 10" " " " "

all have ~~not~~
means of closing

Particulars of Gangway Cargo and Coaling Ports:— *None.*

Particulars of Scuppers and Sanitary Discharge Pipes:— No Scuppers led overboard from top decks.

Location	No. of Discharges	With N.R.V.	Without N.R.V.	Discharging at
From Engine House	3	2	1	at level of 1st deck
Salon House	2	"	"	"
Crew Quarters	2	"	"	about 4 ft below 2 nd deck

Particulars of Side Scuttles:— none below free board deck.

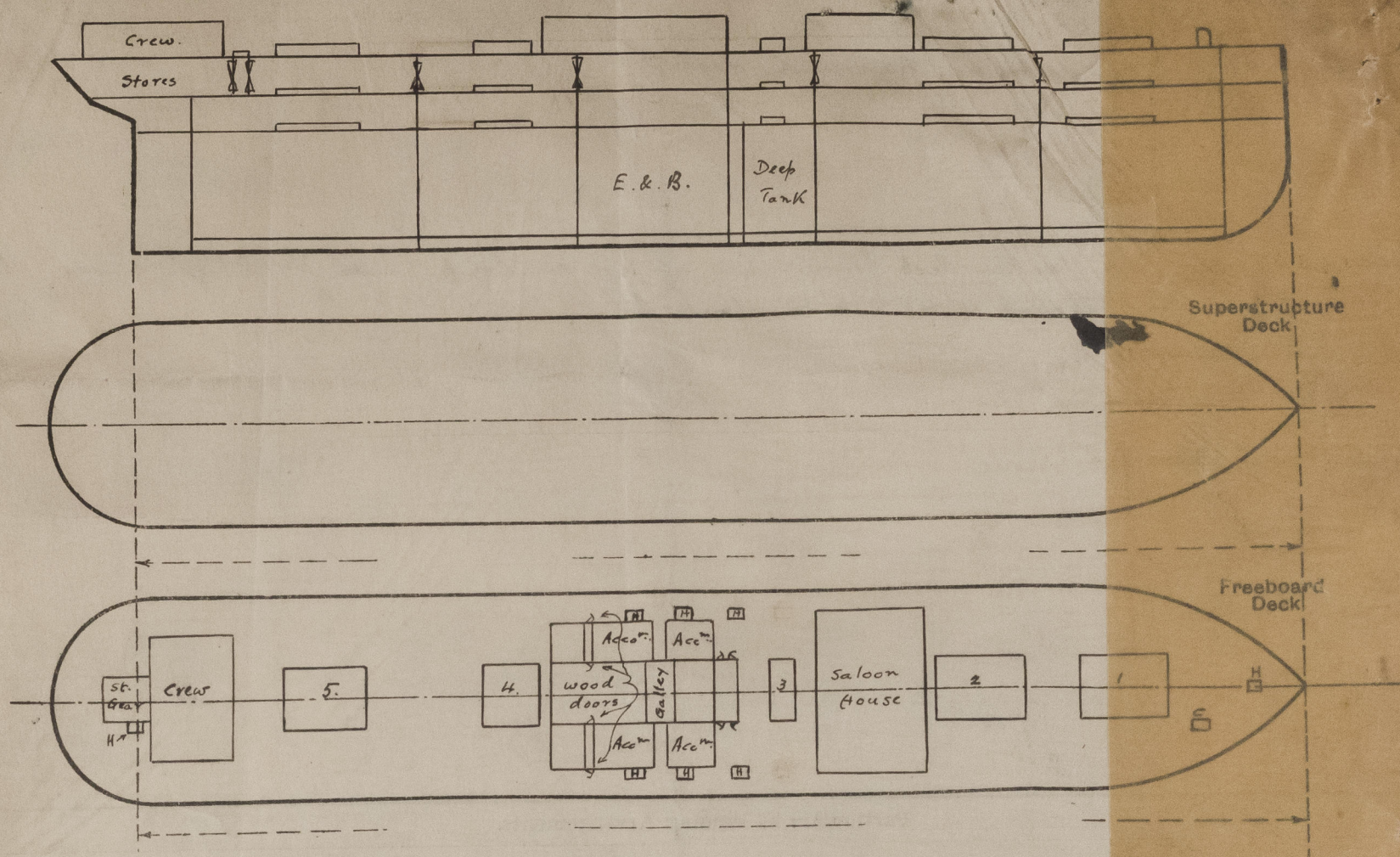
Particulars of Guard Rails:— On weather deck forward and aft of amid ship houses 3'-7" high, 3 rods, stanchions spaced 4'-4" & 5'-4" apart.

Particulars of Gangways, Lifelines, etc.:— *None.*

Particulars of Freeing Arrangements.						
	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
After Well ... } ...	133ft amidships	3'-5"	none			
Forward Well ... } ...						
State position of each freeing port ... } After Well :— (F. and A. position and height above deck edge) } Forward Well :— State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such :— Additional area where sheer is less than standard.						

Particulars of Superstructures, Trunks, Casings, Deckhouses.								
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead								
Raised Quarter Deck Bulkhead ...								
Bridge, After Bulkhead								
Bridge, Forward Bulkhead								
Forecastle Bulkhead								
Trunk, Aft								
Trunk, Forward								
(Exposed) Machinery Casings on Freeboard or Raised Quarter Decks ...	✓	34	3½ x 3 x 40 L	30"	But. at top Continuous at btm	4'-10" x 2'-0"	13"	7'-0"
Exposed Machinery Casings on Superstructure Decks	✓	"	"	"	none at top Continuous at btm.	5'-0" x 2'-1½" (3 only) 3'-6" x 1'-4"	17" 37"	7'-0"
Machinery Casings within Superstructures not fitted with Class I Closing Appliances								
Deckhouses on Flush Deck Ships ...								
Particulars of Closing Appliances (state if capable of being manipulated from both sides).								
Poop Bulkhead								
Raised Quarter Deck Bulkhead ...								
Bridge, After Bulkhead								
Bridge, Forward Bulkhead								
Forecastle Bulkhead								
Exposed Machinery Casings on Freeboard or Raised Quarter Decks ...								
Exposed Machinery Casings on Superstructure Decks								
Machinery Casings within Superstructures not fitted with Class I Closing Appliances								
Deckhouses on Flush Deck Ships ...								

Superstructure bulkheads, trunks, deckhouses, casings, cargo and coaling hatchways, extent and thickness of sheathing on the freeboard deck, gangway, cargo and coaling ports, and any other openings, etc., which would affect the seaworthiness of the ship are to be shewn on the following sketches:—



Note: The Tonnage Opening hatch is permanently closed by riveted steel plate.
The upper 'ton deck bulkheads have all tonnage openings in them except the coll. bulk.

State any special features in the construction of the ship:—

Present Norske Veritas freeboards:—

R. W. = 10'-1"
T = 10'-1"
S = 10'-8 1/2"
W = 11'-4"
R. P. T = 10'-8 1/2"
fine steel uppermost deck.
Certificate dated 25/10/28

Particulars of displacements obtained from Bu.

draught extreme	displ. in c. shell	Tons per c.
24 ft.	12160 tons	47.1
25 ft.	12720 "	47.4
26 ft.	13320 "	47
27 ft.	13910 "	47
28 ft.	14460 "	48

The Survey has been confined to a general examination to obtain the above particulars.

Builder's name and yard number Union Iron Works Co, Alameda, Cal.

Names of sister ships

Owners Den Norske Afrika og Australialinie (H. Wilhelmssen)

Fee Rs. 281.00
Exp 3.00

Received by me



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