

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

GRENA Rpt. C.11.

10049

Computation of Freeboard for ~~Steamer, Sailing Ship, Tanker~~ <sup>Motor</sup> having Poop and Forecastle

(Type of Superstructures.)

Ship's Name M/S. BRAJARA Nationality and Port of Registry Norwegian Oslo Official Number L. I. W. U Gross Tonnage 8200 8116 Date of Build 11/1934-12

Moulded Dimensions: Length 449.83 Breadth 59.0 Depth 35.5

Moulded displacement at moulded draught = 85 per cent. of moulded depth 18303 tons

Coefficient of fineness for use with Tables .800

Port of Survey Gothenburg

Date of Survey 19th November 1934

Name of Surveyor S. Townshend

Particulars of Classification 100A.1. Carrying petroleum in bulk (class contemplated).

Depth for Freeboard (D)		Depth correction		Round of Beam correction	
Moulded depth	35.5	(a) Where D is greater than Table depth (D - Table depth) R = (35.57 - 29.99) 3.00		Moulded Breadth (B)	59.0
Stringer plate	22.7/m			Standard Round of Beam = $\frac{B \times 12}{50} = 14.16$	
Sheathing on exposed deck		(b) Where D is less than Table depth (if allowed) (Table depth - D) R =		Ship's Round of Beam = $\frac{360}{m} = 14.17$	
T $\left(\frac{L-S}{L}\right) =$				Difference	Excess .01
Depth for Freeboard (D) =	35.57	If restricted by superstructures		Restricted to	
				Correction = $\frac{\text{Diff}^e}{4} \times (1 - \frac{S_1}{L}) = \frac{.01}{4} \times .6698 = .0016$	

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ...	101.0	101.00	8'-3"	✓	101.00
" overhang ...	-				
R.Q.D. enclosed ...					
" overhang ...					
Bridge enclosed ...	-				
" overhang aft ...					
" overhang forward					
Forecastle enclosed ...	56.5	56.50	8'-3"	✓	56.50
" overhang ...					
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" forward					
Total ...	157.50	157.50			157.50

Standard Height of Superstructure	7.50'
" " R.Q.D.	✓
Deduction for complete superstructure	42.00"
Percentage covered $\frac{S}{L} =$	35.02 %
" " $\frac{S_1}{L} =$	35.02 %
" " $\frac{E}{L} =$	35.02 %
Percentage from Table, Line A. Tanker	26.02 %
(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 × .2602 = - 10.93"

## SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P. ...	54.98	1	54.98	915	36.02	1	36.02
$\frac{1}{2}$ L from A.P. ...	24.46	4	97.84	110	4.33	4	17.32
$\frac{2}{3}$ L " ...	6.05	2	12.10	0	0	2	0
Amidships ...	✓	4	✓	0	✓	4	✓
$\frac{2}{3}$ L from F.P. ...	12.09	2	24.18	0	0	2	0
$\frac{1}{2}$ L " ...	48.93	4	195.72	442	17.40	4	69.60
F.P. ...	109.96	1	109.96	1860	73.23	1	73.23
Total ...			494.78				196.17

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( \frac{.75 - S}{2L} \right) = \frac{298.61}{18} \left( \frac{.75 - .1751}{.5749} \right) = + 9.54"$

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.

Depth to Freeboard Deck = 35.57

Summer freeboard = 8.08

Moulded draught (d) = 27.49

Deduction for Tropical freeboard and addition for

Winter freeboard =  $\frac{d}{4}$  inches = 6.87 = 6¾"

Addition for Winter North Atlantic Freeboard (if required) = 6¾ + 4½ = 11½"

Deduction for Fresh Water

Displacement in salt water at summer load water line

Δ = 16623

Tons per inch immersion at summer load water line

T = 54.89

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

= 7.57 = 7½"

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient  $\frac{80 + .68}{1.36} = \frac{148}{136}$

	+	-
Depth Correction	16.74	-
Deduction for superstructures	-	10.93
Sheer correction	9.54	-
Round of Beam correction	-	-
Correction for Thickness of Deck amidships	-	-
Other corrections, scantlings, etc.	-	-
	26.28	10.93

Summer Freeboard = 97.03

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

Tropical Fresh Water Line above Centre of Disc	14½" = 36"
Fresh Water Line	7½" = 190
Tropical Line	6¾" = 171
Winter Line below	6¾" = 171
Winter North Atlantic Line	11½" = 286

Tropical Fresh Water Freeboard	8'-1" = 2464 mm
Fresh Water	6'-10¾" = 2103 "
Tropical	7'-5½" = 2274 "
Winter	7'-6½" = 2293 "
Winter North Atlantic	8'-7¾" = 2635 "
	9'-0¾" = 2750 "



# PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway		Side Deck Fore hold	Peak store	Upper Deck Cargo Tanks	Cofferdams	Port Deck No store	Starboard Deck No store		
Dimensions of Hatchway		6'7" x 10'4"	4'1" x 4'2"	2'4" x 5'6"	1'5" x 2'2"	3'3" x 3'3"	3'0" x 2'3"		
COAMINGS	Height above Deck	33" ✓	9" B.A.	33" ✓	8 1/2" C ✓	19 1/2" ✓	24 1/2" ✓		
	Thickness	8 1/2" stiffened	11 1/2" ✓	10 1/2" ✓	10 1/2" ✓	7 1/2" stiffened	10 1/2" ✓		
	Sides	9 1/2" ✓	11 1/2" ✓	10 1/2" ✓	-	7 1/2" ✓	10 1/2" ✓		
	Stiffeners	90 x 75 x 12 L	-	90 x 75 x 12 L	-	85 1/2" x 22 L	-		
	Brackets, Stays	-	-	-	-	-	-		
HATCH BEAMS	Number								
	Spacing								
	Scantling and Sketch								
	Bearing Surface								
FORE AND AFTERS	Number								
	Spacing								
	Unsupported Lengths								
	Scantling* and Sketch								
	Bearing Surface								
HATCH COVERS	Material	Steel W.T.	Wood	Steel W.T.	Wood	Wood	Wood		
	Thickness	Cover	2 1/2" ✓ F.B.A.	Cover ✓	3" ✓	3" ✓ thwartships	3" ✓ thwartships		
	How fitted		3" ✓			2 1/2" ✓	2 1/2" ✓		
	Bearing Surface								
Spacing of Cleats		-	18" ✓	-	-	20" ✓	22" ✓		
Number of Tarpaulins		-	2 ✓	-	-	2 ✓	2 ✓		
<p>*Are wood fore and afters steel shod at all bearing surfaces? <i>Yes.</i></p> <p>Are battens and wedges efficient and in good condition? <i>Yes.</i></p> <p>Are tarpaulins in good condition and in accordance with rule requirements? <i>Yes.</i></p> <p>Are lashings provided in accordance with rule requirements? <i>-</i></p>									

Particulars of fiddle, funnel and ventilator coamings:—

Fidley, funnel and ventilators situated on top of steel casings 8'-0" high above poop deck.  
 Fidley fitted with substantial hinged steel covers.  
 Funnel and ventilators efficiently constructed.  
 Engine room skylight of steel.

Particulars of Flush Bunker Scuttles:—

None.

Particulars of Companionways:—

Pump room entrance house (see next page).

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

All ventilators on freeboard and superstructure decks are efficiently constructed with coamings 36" high or above; those higher than 36" are efficiently supported.  
 All ventilators are supplied with steel plugs and canvas covers.

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

Air pipes on upper deck are 36" high or above.  
 Air pipes on fore-castle and poop decks are 19" high or above.  
 All air pipes are of steel of goose neck type and are supplied with means of closing.

Particulars of Gangway Cargo and Coaling Ports:—

None.



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0003<sup>3</sup>/<sub>5</sub>

Name of Ship . . . *LENORA* . . . . .

Freeboard Report Examined  
(Date) . . . . .

Signed . . . . .

Length of Bulwark

Hei



Particulars of Scuppers and Sanitary Discharge Pipes:—

Sanitary discharges from spaces in the Poop are led overboard below the upper Deck about 4 feet above the load waterline and are fitted with non-return valves at the ship's sides.  
Scuppers from spaces in the Poop are led to the bilges.

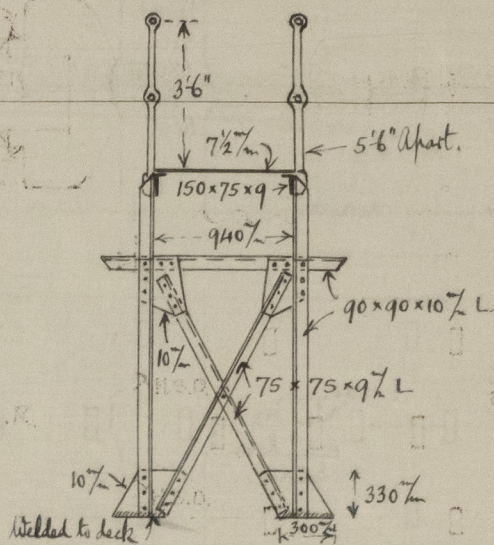
Particulars of Side Scuttles:—

Side scuttles in Forecastle and Poop are fitted with hinged deadlights.

Particulars of Guard Rails:—

Open rails all fore and aft on upper Deck and on Poop and Forecastle decks 3'-7½" high, with three rods and with stanchions spaced 4'-6" to 5'-6" apart, substantially constructed.

Particulars of Gangways, Lifelines, etc.:



Steel gangway fitted in both wells 8'-0" high above upper Deck of scantlings as shown. Supports spaced 11'-0" apart.

Diagonal bracing fitted at mid 22 1/4 3.

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 ...	Open Rails					
Forward Well ...	Open Rails					

State position of each freeing port (T. and A. position and height above deck edge) After Well:— 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.

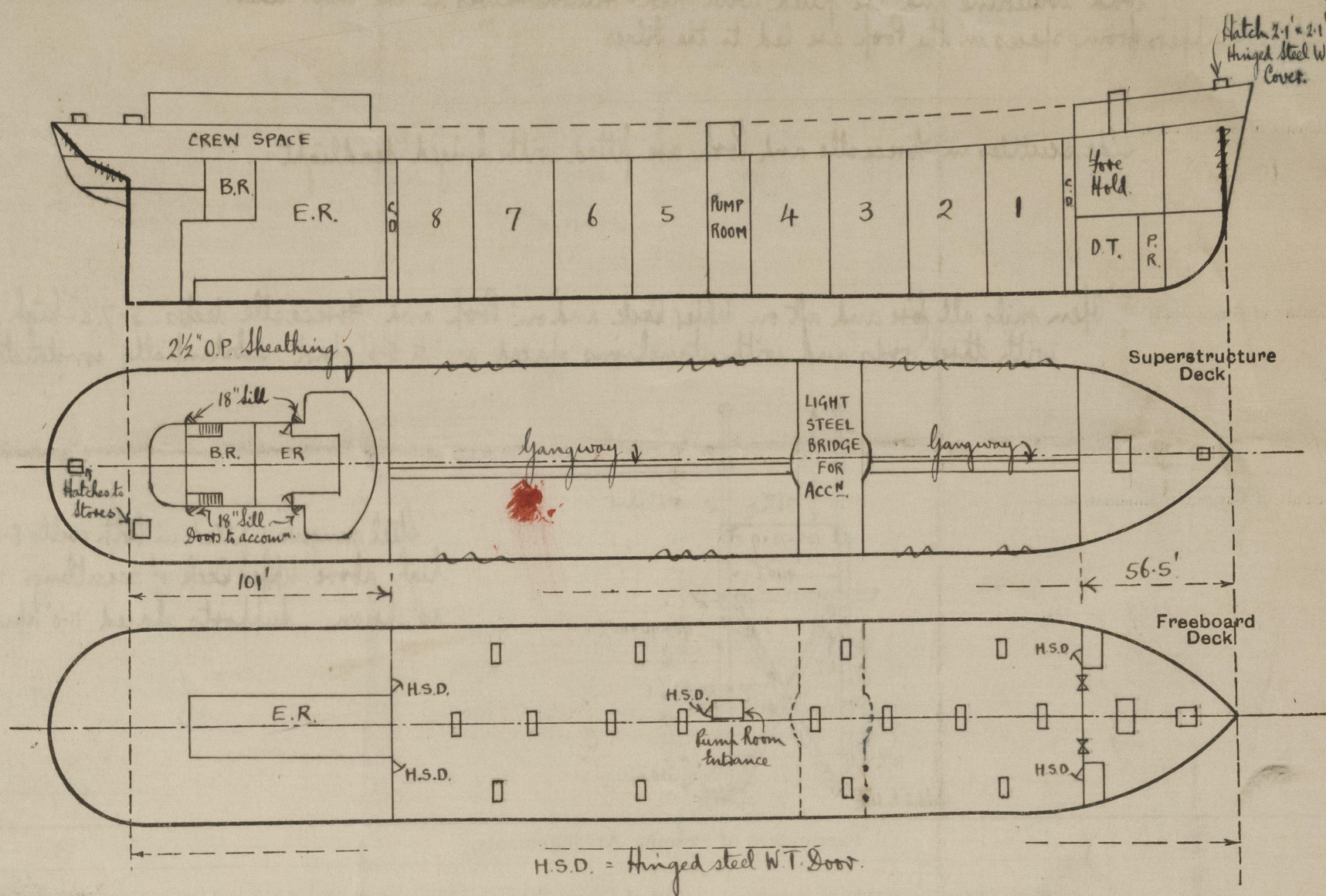
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead ...	150x150x12 L	12 1/2 11 1/2	280x90x12 J 250x90x12 J	810 810	Brackets at top; continuous at bottom. Lugs.	4'-5 1/2" x 2'-2"	30"	8'-3"
Raised Quarter Deck Bulkhead ...								
Bridge, After Bulkhead ...								
Bridge, Forward Bulkhead ...								
Forecastle Bulkhead ...		7 1/2	90x75x9 L; also 150% BA. and bds.	750		W.T. dwp 5'-6 1/2" x 2'-2" 5'-0 1/2" x 38 1/4"	19" 22"	8'-3"
Trunk, Aft ...								
Trunk, Forward ...								
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...								
Exposed Machinery Casings on Super-structure Decks ...		8	130x75x8 L	825	Bkts at top Lugged to beams at bottom			8'-0"
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ...								
Pump Room Entrance Deckhouses on Flush Deck Ships ...		8	130x75x9 1/2 L	850	attached to beams at bottom	5'-6 1/2" x 2'-2"	18 1/2"	8'-0"

Particulars of Closing Appliances (state if capable of being manipulated from both sides).

Poop Bulkhead ...	Two hinged steel watertight doors operated from both sides.
Raised Quarter Deck Bulkhead ...	
Bridge, After Bulkhead ...	
Bridge, Forward Bulkhead ...	
Forecastle Bulkhead ...	Two portable steel plates secured with hookbolts spaced 18' apart.
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	Two hinged steel watertight doors operated from both sides.
Exposed Machinery Casings on Super-structure Decks ...	No openings.
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ...	
Pump Room Entrance Deckhouses on Flush Deck Ships ...	One hinged steel watertight door operated from both sides.



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 shown on the following sketches:—



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

95% moulded depth. Displacement = 20,790 tons T.P.I. = 56.44  
 85% " " " = 18,400 " " = 55.66  
 75% " " " = 16,050 " " = 54.64

A Preliminary freeboard was assigned on 16.1.34

Builder's name and yard number A.B. Jøstaverken No 482.

Names of sister ships M/V. GRENA same builder yard No 483.

Owners Rederi A/S Hvalbol

Fee 420 kr.

Received by me.



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