

Lloyd's Register of Shipping.  
SURVEYS FOR FREEBOARD.Index. No. **27685**  
(For London Office only.)

Computation of Freeboard for Steamer, Sailing Ship, Tanker  
having a Poop, Bridge, and Forecastle Port of Survey Hane

BESTIK (Type of Superstructures.) Supp. 30/7/34  
Date of Survey Nov. 1932

Ship's Name "BESTIK 2" Nationality and Port of Registry Norwegian Oslo Official Number — Gross Tonnage 2719 Date of Build 1920  
Name of Surveyor S. J. L. Davis

Moulded Dimensions: Length 310 Breadth 44 Depth 23.83  
Moulded displacement at moulded draught = 85 per cent. of moulded depth 6267 tons  
Coefficient of fineness for use with Tables .794  
Particulars of Classification + 100 A. 1.

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth ... .. <u>23.83</u>	(a) Where D is greater than Table depth (D-Table depth) R = $(23.83 - 20.67) \times 2.34$ <u>= + 4.63"</u>	Moulded Breadth (B) <u>44</u>
Stringer plate ... .. <u>.04</u>	(b) Where D is less than Table depth (if allowed) (Table depth-D) R = <u>—</u>	Standard Round of Beam = $\frac{B \times 12}{50} =$ <u>10.56</u>
Sheathing on exposed deck $T \left( \frac{L-S}{L} \right) =$ <u>—</u>	If restricted by superstructures <u>—</u>	Ship's Round of Beam = <u>10.75</u>
Depth for Freeboard (D) = <u>23.87</u>		Difference <u>.19</u>
		Restricted to
		Correction = $\frac{\text{Diff}^2}{4} \times \left( 1 - \frac{S_1}{L} \right) = \frac{.19^2}{4} \times \left( 1 - \frac{.19}{44} \right) =$ <u>.02</u>

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)	
Poop enclosed ... ..	<u>28.00</u>	<u>28.00</u>	<u>4.5</u>		<u>28.00</u>	Standard Height of Superstructure <u>6.6'</u>
" overhang ... ..						" " R.Q.D. <u>—</u>
R.Q.D. enclosed ... ..						Deduction for complete superstructure <u>36.00</u>
" overhang ... ..						Percentage covered $\frac{S}{L} =$ <u>48.06%</u>
Bridge enclosed ... ..	<u>88.00</u>	<u>88.00</u>	<u>7.5</u>		<u>88.00</u>	" " $\frac{S_1}{L} =$ <u>48.06%</u>
" overhang aft ... ..						" " $\frac{E}{L} =$ <u>48.06%</u>
" overhang forward ... ..						Percentage from Table, Line A. (corrected for absence of fore-castle (if required))
Fore-castle enclosed ... ..	<u>33.00</u>	<u>33.00</u>	<u>7.5</u>		<u>33.00</u>	Percentage from Table, Line B. <u>34.35</u> (corrected for absence of fore-castle (if required))
" overhang ... ..						Interpolation for bridge less than 2L (if required)
Trunk aft ... ..						Deduction = <u>36 x 34.35 = 12.37"</u>
" forward ... ..						
Tonnage opening aft ... ..						
" " forward ... ..						
Total ... ..	<u>149.00</u>	<u>149.00</u>			<u>149.00</u>	

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P. ... ..	<u>41.00</u>	1		<u>41.00</u>	<u>48</u>	<u>41.00</u>	1		<u>41.00</u>	Mean actual sheer aft = <u>Success</u> Mean standard sheer aft =
$\frac{1}{8}$ L from A.P. ... ..	<u>18.245</u>	4		<u>72.98</u>	<u>21</u>	<u>18.245</u>	4		<u>72.98</u>	Mean actual sheer forward = <u>Deficient</u> Mean standard sheer forward =
$\frac{3}{8}$ L " ... ..	<u>4.51</u>	2		<u>9.02</u>	<u>5</u>	<u>4.51</u>	2		<u>9.02</u>	
Amidships ... ..	<u>0</u>	4		<u>0</u>	<u>0</u>	<u>0</u>	4		<u>0</u>	Length of enclosed superstructure forward of amidships = <u>.134</u> " " aft of " = <u>.150</u>
$\frac{5}{8}$ L from F.P. ... ..	<u>9.02</u>	2		<u>18.04</u>	<u>7 1/2</u>	<u>7.50</u>	2		<u>15.00</u>	
$\frac{7}{8}$ L " ... ..	<u>36.49</u>	4		<u>145.96</u>	<u>30 1/2</u>	<u>30.50</u>	4		<u>122.00</u>	
F.P. ... ..	<u>82.00</u>	1		<u>82.00</u>	<u>72</u>	<u>72.00</u>	1		<u>72.00</u>	
Total ... ..									<u>382.00</u>	

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{37}{18} \left( .75 - \frac{.2403}{2 \times 310} \right) = + 1.05"$   
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.	Deduction for Fresh Water.	TABULAR FREEBOARD corrected for Flush Deck (if required)
Depth to Freeboard Deck = <u>23.87</u> Summer freeboard = <u>3.83</u> Moulded draught (d) = <u>20.04</u>	Displacement in salt water at summer load water line $\Delta =$ Tons per inch immersion at summer load water line $T =$ Deduction = $\frac{\Delta}{40T}$ inches = <u>5"</u>	Correction for coefficient $\frac{.794 + .68}{1.36} = \frac{1.474}{1.36}$ Depth Correction ... .. <u>7.63</u> Deduction for superstructures ... .. <u>12.37</u> Sheer correction ... .. <u>1.05</u> Round of Beam correction ... .. <u>.02</u> Correction for Thickness of Deck amidships ... .. <u>—</u> Other corrections, scantlings, etc. ... .. <u>—</u> 8.68 12.39 - 3.71 Summer Freeboard = <u>46.04</u>

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

Tropical Fresh Water Line above Centre of Disc ... ..	<u>10' .254</u>	Tropical Fresh Water Freeboard ... ..	<u>3' .10</u>	<u>1168 1/2</u>
Fresh Water Line " " ... ..	<u>5' .127</u>	Fresh Water " " ... ..	<u>3' .0</u>	<u>914</u>
Tropical Line " " ... ..	<u>5' .127</u>	" Tropical " " ... ..	<u>3' .5</u>	<u>1041</u>
Winter Line below " " ... ..	<u>5' .127</u>	" Winter " " ... ..	<u>4' .3</u>	<u>1295</u>
Winter North Atlantic Line " " ... ..	<u>7' .148</u>	" Winter North Atlantic " " ... ..	<u>4' .5</u>	<u>1346</u>



# PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway	No. 1 on Fwd. Deck	No. 2 do.	No. 3 do.	No. 4 do.	Forward on Fwd. Deck	Middle Line on Fwd. Deck	Wing on Fwd. Deck		
Dimensions of Hatchway	31'-6" x 21'-0"	33'-9" x 21'-0"	33'-9" x 21'-0"	31'-6" x 21'-0"	23'-3" x 3'-2"	6'-9" x 15'-3"	6'-9" x 15'-3"	6'-3" x 15'-3"	
COAMINGS	Height above Deck	37"	37"	37"	37"	37"	37"	37"	
	Thickness	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	
	Sides	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	
	Stiffeners	9 x 3/4 x 1/2 BA	do.	do.	do.	do.	do.	do.	
HATCH BEAMS	Number	6	6	6	6	1	1	1	
	Spacing	4'-6"	5'-0"	5'-0"	4'-6"				
	Scantling and Sketch	17 x 36	18 1/2 x 36	18 1/2 x 36	17 x 36	12 x 7 1/2	12 x 7 1/2	12 x 7 1/2	
	Bearing Surface	4 1/2 x 3/4 x 1/2 top of beam	4 1/2 x 3/4 x 1/2 top of beam	4 1/2 x 3/4 x 1/2 top of beam	4 1/2 x 3/4 x 1/2 top of beam	3 1/2 x 3/4 x 1/2 top of beam	3 1/2 x 3/4 x 1/2 top of beam	3 1/2 x 3/4 x 1/2 top of beam	
FORE AND AFTERS	Number								
	Spacing								
	Unsupported Lengths								
	Scantling* and Sketch								
HATCH COVERS	Material	Pine	do.	do.	do.	Pine	do.	do.	
	Thickness	2 1/2"	do.	do.	do.	3"	do.	do.	
	How fitted	F + A	do.	do.	do.	F + A	do.	do.	
	Bearing Surface	3"	do.	do.	do.	2 1/2"	do.	do.	
Spacing of Cleats	Center	2'-2"	do.	do.	do.	2'-0"	do.	do.	
Number of Tarpaulins		3	do.	do.	do.	do.	do.	do.	

Particulars of fiddle, funnel and ventilator coamings:—

Fiddle Coaming 18" x 3/4" Plating 1/2" Stiffeners 4 x 3 x 1/2 spaced 3'-0"  
 Design of fiddle 7'-5". Fiddle ventilators have hinged steel  
 covers. Funnel casing same scantlings as fiddle.

Particulars of Flush Bunker Scuttles:—

None fitted

Particulars of Companionways:—

Entrance to poop consists of small deck house.  
 Plating 1/4" thick. Stiffeners 3" x 3 x 1/2 spaced 2'-6" apart.

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

15" Dia. Hold Ventilators Coamings on well decks 2'-0" high  
 1/4" thick. Attachment bar 4 x 3 x 1/2. Wood caps & canvas covers fitted  
 Vent. coamings on Bridge & Poop deck 1'-5" high fitted with  
 wood caps & canvas covers.

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

Swan neck air pipes on well decks 1'-0" high  
 " " " " Superstructure decks 9" high

Particulars of Gangway Cargo and Coaling Ports:—

None fitted

Particulars of Scuppers and Sanitary Discharge Pipes:—

Well deck scuppers consist of holes in bulwarks in  
 way of the deck stringer bar. Sanitary discharge pipes are fitted  
 with storm valves.

Particulars of Side Scuttles:—

Side scuttles in way of Poop, Bridge & Forecastle are at  
 2'-6" below the superstructure decks and are fitted with  
 hinged deadlights.

Particulars of Guard Rails:—

Guard rails on Poop, Bridge & Forecastle are 3'-3" high.

Particulars of Gangways, Lifelines, etc.:—

Suitable provision made for rigging lifelines which  
 are conveniently stowed and available for use in any  
 part of the ship.

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	80'-6"	4'-0"	2'-7" x 1'-5"	4	16 sq ft	16 sq ft
Forward Well	80'-6"	4'-0"	2'-7" x 1'-5"	4	16 sq ft	16 sq ft

State position of each freeing port ... After Well:— 1st is 8'-0" from Bridge & then 3' apart } height is 1'-0"  
 (F. and A. position and height above deck edge) } Forward Well:— 1st is 8'-0" from Bridge & then 3' apart } height is 1'-0"  
 State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— 2 bars above deck edge

Additional area where sheer is less than standard.

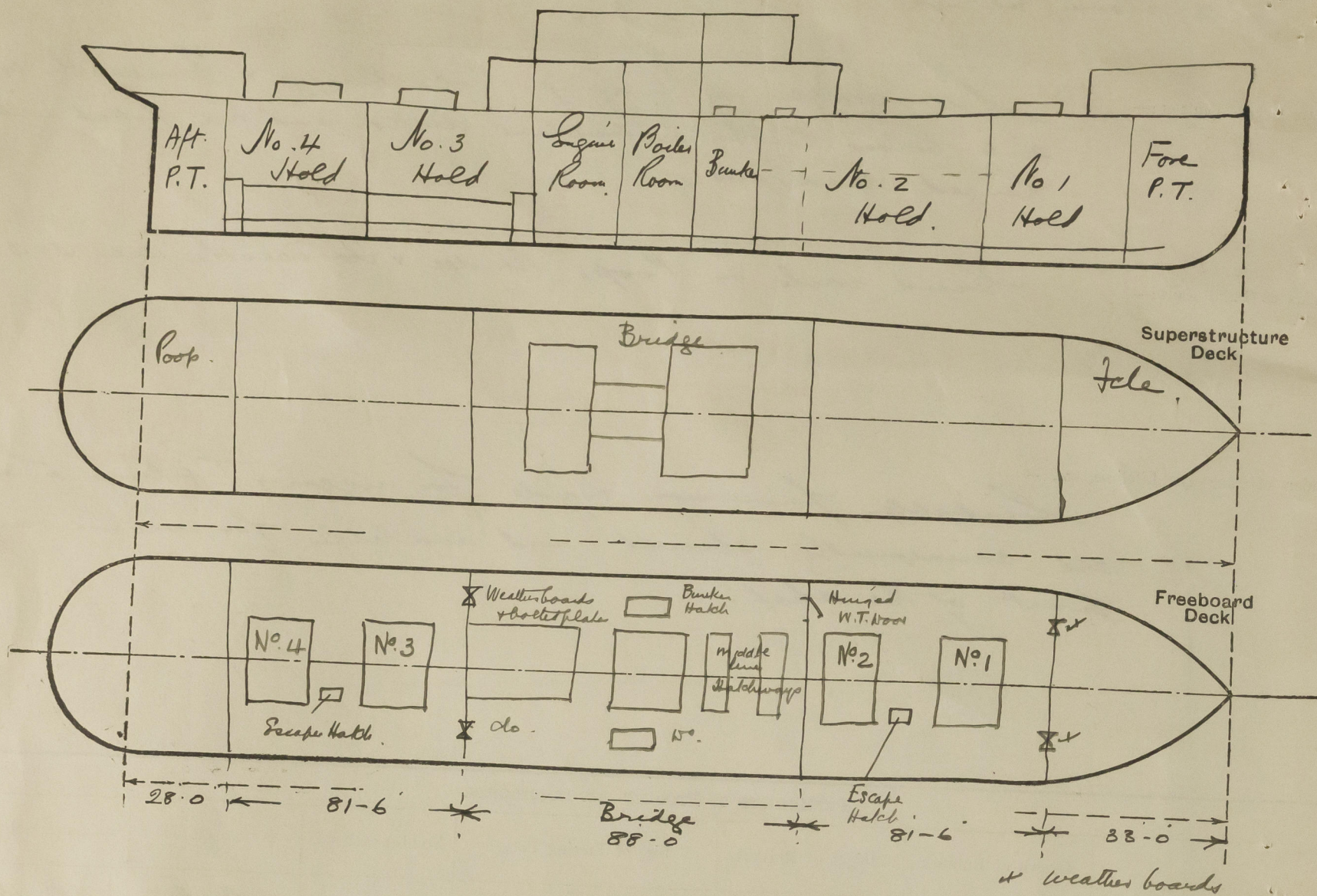
Particulars of Superstructures, Trunks, Casings, Deckhouses.								
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead	7/16"	3/8"	5 x 3 x 1/2	2'-6"	—	None	—	7'-5"
Raised Quarter Deck Bulkhead	—	—	—	—	—	—	—	—
Bridge, After Bulkhead	5/16"	7/16"	5 x 3 x 1/2	2'-6"	—	4'-6" x 4'-0"	18"	7'-5"
Bridge, Forward Bulkhead	7/16"	3/8"	7 1/2 x 3 x 1/2 BA	2'-8"	18 x 18 x 1/2 bracket	4'-0" x 4'-0" wide	22"	7'-5"
Forecastle Bulkhead	3/8"	3/8"	5 1/2 x 3 x 1/2	2'-9"	—	—	—	—
Trunk, Aft	5/16"	—	—	—	—	—	—	—
Trunk, Forward	—	—	—	—	—	—	—	—
Exposed Machinery Casings on Free- board or Raised Quarter Decks	—	—	—	—	—	—	—	—
Exposed Machinery Casings on Super- structure Decks	5/16"	7/16"	4 x 3 x 1/2	3'-0"	—	5'-0" x 2'-0"	18"	7'-3"
Machinery Casings within Superstruc- tures 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	No openings
Raised Quarter Deck Bulkhead	—
Bridge, After Bulkhead	Weather boards 4" thick fitted in channels. full height & covered with a locked plate.
Bridge, Forward Bulkhead	Steel hinged watertight door manipulated both sides
Forecastle Bulkhead	Weather boards 3" thick in channels full height
Exposed Machinery Casings on Free- board or Raised Quarter Decks	No opening
Exposed Machinery Casings on Super- structure Decks	Steel hinged doors manipulated from both sides
Machinery Casings within Superstruc- tures 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 shown on the following sketches:—



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

Builder's name and yard number C. Hill & Sons. Bristol

Names of sister ships 'Arlette'

Owners Proprietors Messrs T. Y. Finerson

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