

11 NOV '32

Index. No. 24765  
(For London Office only.)Lloyd's Register of Shipping.  
SURVEYS FOR FREEBOARD.

No. 101328.

BEN VOOR now registered at Ramsay, Isle of Man. 8/10/38.

Computation of Freeboard for Steamer, ~~Sailing Ship~~, Tanker  
having *Classed Double End, Bridge House and Forecastle*Port of Survey *Liverpool*

(Type of Superstructures.)

Date of Survey *November 9<sup>th</sup> 1932.*Ship's Name *BEN VOOR*Nationality and Port of Registry *British  
Wolverhampton*Official Number *136358*Gross Tonnage *274*Date of Build *1916-12.*Name of Surveyor *T. Richardson.*Moulded Dimensions: Length *120.8* Breadth *22.0* Depth *10.0 1/2*Moulded displacement at moulded draught = 85 per cent. of moulded depth *465* tonsCoefficient of fineness for use with Tables *.718*Particulars of Classification *7100A.1.**S.S. Liv. No. 3-9-29.*

Depth for Freeboard (D)	
Moulded depth	<i>10.04</i>
Stringer plate	<i>38.8</i>
Sheathing on exposed deck	<i>4.03</i>
$T \left( \frac{L-S}{L} \right) =$	<i>✓</i>
Depth for Freeboard (D) =	<i>10.07</i>

Depth correction	
(a) Where D is greater than Table depth (D - Table depth) R =	<i>(10.07 - 8.06) .929 = +1.87</i>
(b) Where D is less than Table depth (if allowed) (Table depth - D) R =	<i>✓</i>
If restricted by superstructures	<i>✓</i>

Round of Beam correction	
Moulded Breadth (B)	<i>22.0</i>
Standard Round of Beam = $\frac{B \times 12}{50}$	<i>5.28</i>
Ship's Round of Beam	<i>6</i>
Difference	<i>.72</i>
Restricted to	<i>✓</i>
Correction = $\frac{\text{Diff}}{4} \times (1 - \frac{S_1}{L})$	<i>= .72 \times .4029 = -</i>

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ...					
" overhang ...					
R.Q.D. enclosed ...	<i>42.0</i>	<i>42.00</i>	<i>3.6</i>	<i>✓</i>	<i>42.00</i>
" overhang ...					
Bridge enclosed ...	<i>8.9</i>	<i>8.75</i>	<i>8.0</i>	<i>✓</i>	<i>8.75</i>
" overhang aft ...	<i>8.75</i>				
" overhang forward	<i>21.09</i>				
Fore enclosed <i>8.75</i>	<i>17.8</i>	<i>21.09</i>	<i>6.0</i>	<i>✓</i>	<i>21.09</i>
" overhang ...	<i>7.0</i>	<i>29</i>			<i>29</i>
Trunk aft ...	<i>58</i>				
" forward ...					
Tonnage opening aft ...					
" forward					
Total ...	<i>72.42</i>	<i>72.13</i>			<i>72.13</i>

Standard Height of Superstructure	<i>6.0</i>
" " R.Q.D.	<i>3.138</i>
Deduction for complete superstructure	<i>18.08</i>
Percentage covered $\frac{S}{L} =$	<i>59.95 %</i>
" $\frac{S_1}{L} =$	<i>59.71 %</i>
" $\frac{E}{L} =$	<i>59.71 %</i>
Percentage from Table, Line A.	<i>45.59 %</i>
(corrected for absence of forecastle (if required))	<i>✓</i>
Percentage from Table, Line B.	<i>✓</i>
(corrected for absence of forecastle (if required))	<i>✓</i>
Interpolation for bridge less than .2L (if required)	<i>✓</i>
Deduction = $18.08 \times .4559 =$	<i>-8.24</i>

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	<i>22.08</i>	<i>1</i>		<i>22.08</i>	<i>20</i>	<i>20.00</i>	<i>20.00</i>	<i>1</i>	<i>20.00</i>
1/4 L from A.P. ...	<i>9.83</i>	<i>4</i>		<i>39.32</i>	<i>6</i>	<i>6.72</i>	<i>6.72</i>	<i>4</i>	<i>26.88</i>
1/2 L " ...	<i>2.43</i>	<i>2</i>		<i>4.86</i>	<i>1.5</i>	<i>1.68</i>	<i>1.68</i>	<i>2</i>	<i>3.36</i>
Amidships ...	<i>✓</i>	<i>4</i>		<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>4</i>	<i>✓</i>
3/4 L from F.P. ...	<i>4.86</i>	<i>2</i>		<i>9.72</i>	<i>5</i>	<i>4.00</i>	<i>4.00</i>	<i>2</i>	<i>8.00</i>
1/4 L " ...	<i>19.65</i>	<i>4</i>		<i>78.60</i>	<i>15.2</i>	<i>16.00</i>	<i>16.00</i>	<i>4</i>	<i>64.00</i>
F.P. ...	<i>44.16</i>	<i>1</i>		<i>44.16</i>	<i>39</i>	<i>40.00</i>	<i>40.00</i>	<i>1</i>	<i>40.00</i>
Total ...				<i>198.74</i>					<i>162.24</i>

Mean actual sheer aft = *Deficient*  
Mean standard sheer aftMean actual sheer forward = *Deficient*  
Mean standard sheer forwardLength of enclosed superstructure forward of amidships = *Def.*  
" " aft of " = *Sheers.*Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{36.50}{18} \times (.75 - .2997) = +.91$ If limited on account of midship superstructure. *✓*If limited to maximum allowance of 1 1/2 ins. per 100 ft. *✓*

## Deduction for Tropical Freeboard.

## Addition for Winter and Winter North Atlantic Freeboard.

Ft.  
Depth to Freeboard Deck = *10.07*  
Summer freeboard = *.58*  
Moulded draught (d) = *9.49*Deduction for Tropical freeboard and addition for Winter freeboard =  $\frac{d}{4}$  inches = *2.37 = 2 1/4*Addition for Winter North Atlantic Freeboard (if required) = *2*

## Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta =$  *529*

Tons per inch immersion at summer load water line

 $T =$  *5.35*Deduction =  $\frac{\Delta}{40T}$  inches $=$  *2.47* $=$  *2 1/2*

## TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient  $\frac{718 + .68}{1.36} = 1398$  $\frac{1.36}{1.36}$ Depth Correction ... *1.87* *✓*Deduction for superstructures ... *8.24* *✓*Sheer correction ... *.91* *✓*Round of Beam correction ... *.07* *✓*Correction for Thickness of Deck amidships ... *✓*Other corrections, scantlings, etc. ... *✓**2.78* *8.31* *- 5.53*Summer Freeboard = *6.89*SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, ~~Wood~~, Steel, Deck:— *MAIN*

Tropical Fresh Water Line above Centre of Disc	<i>4 3/4</i>
Fresh Water Line	<i>2 1/2</i>
Tropical Line	<i>2 1/4</i>
Winter Line below	<i>2 1/4</i>
Winter North Atlantic Line	<i>4 1/4</i>

Tropical Fresh Water Freeboard	<i>0' - 7"</i>
Fresh Water	<i>0' - 2 1/4"</i>
Tropical	<i>0' - 4 1/2"</i>
Winter	<i>0' - 4 3/4"</i>
Winter North Atlantic	<i>0' - 9 1/4"</i>
	<i>0' - 11 1/4"</i>



PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway ... ..			IN FORE WELL.		BUNKER HATCH ON CASING TOP.				
Dimensions of Hatchway ... ..			38'6" x 14'0".		4'6" x 11'0".				
COAMINGS	{	Height above Deck ... ..	2'9" ✓		12" above Casing Top.		5" Coaming 2'9" high, 10' apart. 18" apart.		
		Thickness { Sides ... ..	.45" ✓		.25" ✓				
		{ Ends ... ..	✓		✓				
		Stiffeners ... ..	✓		✓				
		Brackets, Stays ... ..	✓		✓				
HATCH BEAMS	{	Number ... ..	3.		✓		15" x 24" Coaming 15" apart.		
		Spacing ... ..	8'9" x 10'6"						
		Scantling and Sketch ... ..	7" x 11" Plate 20'6" x 14' x .40" ✓ Angles 3' x 3' x .40" ✓						
		Bearing Surface ... ..	3" ✓						
FORE AND AFTERS	{	Number ... ..	3		✓		15" x 24" Coaming 15" apart.		
		Spacing ... ..	3'6" centres.						
		Unsupported Lengths ... ..	8'9" x 10'6" ✓						
		Scantling* and Sketch ... ..	Centre 8' x 7" } P. Rivet Sides 7' x 6" }						
		Bearing Surface ... ..	3" ✓						
HATCH COVERS	{	Material ... ..	W.W. ✓		W.W. ✓		15" x 24" Coaming 15" apart.		
		Thickness ... ..	.45" ✓		.25" ✓				
		How fitted ... ..	Bolted ✓		Bolted ✓				
		Bearing Surface ... ..	2" ✓		1 1/2" ✓				
Spacing of Cleats ... ..			22'6" x 4" ✓		18' sides. 22' ends. ✓				
Number of Tarpaulins ... ..			3. ✓		one. ✓				
*Are wood fore and afters steel shod at all bearing surfaces? Yes. ✓ 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? Yes. ✓									

Particulars of fiddle, funnel and ventilator coamings:—

State hold gratings covered by strong steel hinged covers. ✓  
 Funnel and Fiddle ventilators in efficient condition ✓  
 Engine skylight of steel, strongly constructed. ✓

Particulars of Flush Bunker Scuttles:—

2 Scuttles on Quarter Deck p + s. sides of cast. steel fitted with Bayonet joints 15" diam.

Particulars of Companionways :—

Particulars of Companionways:—

1. Entrance to Bridge accommodation, through wheel house on Bridge. Door  $4'5" \times 1'7"$ . 14" Sill.  
Teak door  $1\frac{1}{2}"$  frames.  $\frac{3}{4}"$  panels. operated both sides. ✓

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

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

1. 3" Swan neck ventl on Forecastle Deck. 6" high led to Crew Space.
1. 5 $\frac{1}{2}$ " " " " " Stairs.
2. 9" diam Vents on Freeboard Deck in Fore Well. Coamings 37" x  $\frac{1}{4}$ " led to Hold.
2. 5" Swan neck ventl on Bridge Deck. 12" high, led to Bridge accommodation.

All vents constructed in accordance with the Rules + coamings closed with wood plugs & canvas covers.

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

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

1. C.I.	Air pipe on Forecastle Pt.	12" high x $2\frac{1}{2}$ " diam.	from Fore Peak.	✓
1. C.I.	" " "	Quartern " 2'6" x $2\frac{1}{2}$ "	" " after "	✓

Air Pipes are closed with Canvas covers. ✓

Particulars of Gangway Cargo and Coaling Ports :—

None fitted. ✓



Borgan

Particulars of Scuppers and Sanitary Discharge Pipes:—

all  $\frac{1}{2}$ " Scuppers are cut through stringer angle. except 2 at after end of Q. D. (see sketch) ✓  
2 Elbow Scuppers 2" diam. cut 6" below deck. ✓  
4" diam. Discharge from Crews W.C. forward cut above Freeboard D. ✓ } now return valves not fitted.  
33" " " " W.C. in Casings " 12" below Q. D. ✓

Particulars of Side Scuttles:—

9" diam. Side scuttles to Crew space in Forecastle, provided with hinged deadlights. ✓  
all scuttles of substantial construction. ✓

Particulars of Guard Rails:—

guard rails on Fore D. 3'0" high with 2 rods and stanchions 4'10" apart. ✓  
steel bulwarks on 3rd D. in fore well 3'6" high. efficiently constructed and supported. ✓  
" " " Raised Quarter D. 2'9" " " " ✓  
Wood " " Bridge D. 3'0" high. with Teak rail 5" x 2 1/2". ✓

Particulars of Gangways, Lifelines, etc.:—

Match Top forms gangway, with 3 stanchions and steel wire through, attached to Bridge and Forecastle ends. ✓

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 ... ..	42'0" ✓	2'9"	2 @ 2'6" x 1'3" 2 @ 2'0" x 1'0"	2 2	10.25 ✓	10.7
Forward Well ... ..	45'5" 45'38"	3'6"	2'2" x 1'4"	4	11.51 ✓	11.05
State position of each freeing port ... .. } After Well:— from after end of Bridge 7'6". 16'6". 22'0". 29'6". 8" above D. edge. (F. and A. position and height above deck edge) } Forward Well:— " fore " 6'7". 17'6". 27'4". 37'10". 7" ✓ State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— } Plate shutters hinged in centre. ✓						
Additional area where sheer is less than standard.						

Particulars of Superstructures, Trunks, Casings, Deckhouses.

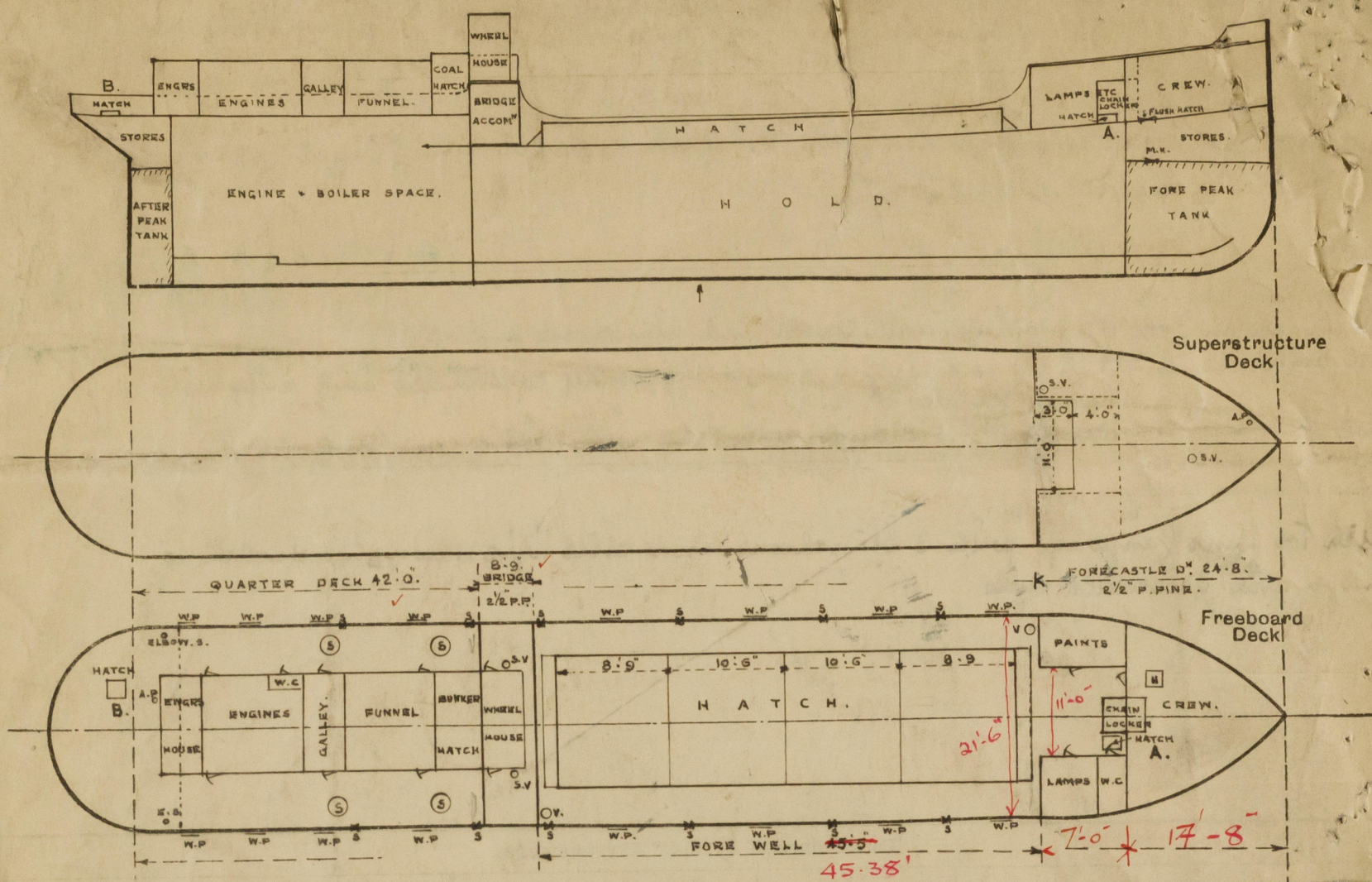
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead ... ..								
Raised Quarter Deck Bulkhead ... ..								
Bridge, After Bulkhead ... ..	5'6" at Hatch ✓	25' ✓	4'2 1/2" x 35" B.A. ✓	30" ✓	Brackets top & bottom ✓	4'11" diam open. lights ✓	✓	8'0" ✓
Bridge, Forward Bulkhead ... ..	30" ✓	25' ✓	4'3" x 50" A. ✓	31" ✓	✓	4'4" x 1'9" Door ✓	12" ✓	6'0" ✓
Forecastle Bulkhead ... ..	✓	25' ✓	4'3" x 50" A. ✓	31" ✓	✓	4'4" x 1'9" Door ✓	12" ✓	6'0" ✓
Trunk, Aft ... ..								
Trunk, Forward ... ..								
Exposed Machinery Casings on Deck ... ..	30" ✓	25' ✓	2 1/2" x 2 1/2" x 25" ✓	3'3" ✓	Brackets at top ✓	4 Doors 4'8" x 1'9" ✓	19" ✓	6'9" ✓
Exposed Machinery Casings on Superstructure Decks ... ..								
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 ... ..	Intact
Bridge, After Bulkhead ... ..	2'11" diam. opening lights. 27" to centre above Q. D. ✓
Bridge, Forward Bulkhead ... ..	Intact 4'11" ✓
Forecastle Bulkhead ... ..	One White Wood Door. 1 1/2" frames. 1/2" panels. manipulated both sides. ✓
Exposed Machinery Casings on Deck ... ..	Four Steel Doors in halves. manipulated both sides. ✓
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 shown on the following sketches:—



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

Vessel surveyed when afloat, for Freeboard assignment only. ✓

Timber Freeboard not required.

*Quint*

F'CLE LEN = 24.67'  
 DEDUCT.  $\frac{11 \times 7}{21.5} = \frac{3.58}{21.09} = \text{found}$   
 O.H. =  $\frac{21.67}{21.09} = \frac{58}{58}$

Builder's name and yard number *A. Jeffery & Co. Ltd. Yard N° 15*

Names of sister ships *"Collin"*

Owners *K. Williams & Co. Ltd. (J. Christopher, Manager.)*

Fee £ *3* : *8* : *0*

Received by me

*Quint*



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