

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tugboat
having Poop, Bridge, & Forecastle

(Type of Superstructures.)

Ship's Name BULGARIAN Nationality and Port of Registry British London Official Number 143434 Gross Tonnage 2064 Date of Build 1904

Moulded Dimensions: Length 292'-0" Breadth 41'-0" Depth 21'-6 3/4"
Moulded displacement at moulded draught = 85 per cent. of moulded depth 5089 tons
Coefficient of fineness for use with Tables .812

Port of Survey London
Date of Survey 20th May 1932
Name of Surveyor R. Blake
Particulars of Classification +100 A1

Depth for Freeboard (D)
Moulded depth ... 21.56
Stringer plate .4404
Sheathing on exposed deck
 $T \left(\frac{L-S}{L} \right) =$
Depth for Freeboard (D) = 21.60

Depth correction
(a) Where D is greater than Table depth 4.786
(D - Table depth) R = (21.60 - 19.47) 2.247 = +4.79
(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) 41
Standard Round of Beam = $\frac{B \times 12}{50} =$ 9.84
Ship's Round of Beam = 10
Difference .16
Restricted to
Correction = $\frac{\text{Diff}^2}{4} \times \left(1 - \frac{S_1}{L} \right) =$ $\frac{.16^2}{4} \times \frac{2369}{4} = .01$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...	<u>14'-8"</u>	<u>14.67</u>	<u>7'-0"</u>		<u>14.67</u>
" overhang ...	<u>4'-6"</u>	<u>1.58</u>			<u>1.58</u>
R.Q.D. enclosed ...	<u>3'-2"</u>				
" overhang ...					
Bridge enclosed ...	<u>174'-9"</u>	<u>174.75</u>	<u>7'-0"</u>		<u>174.75</u>
" overhang ...					
" overhang forward	<u>2'-8"</u>				
Fore enclosed <u>eg. 6.4</u>	<u>28.68</u>	<u>29.20</u>	<u>7'-0"</u>		<u>29.20</u>
" overhang ...	<u>1.582</u>	<u>2.65</u>			<u>2.65</u>
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" " forward					
Total ...	<u>227.08</u>	<u>222.85</u>			<u>222.85</u>

Standard Height of Superstructure 6.42
" " R.Q.D.
Deduction for complete superstructure 34.80
Percentage covered $\frac{S}{L} =$ 77.75
" " $\frac{S_1}{L} =$ 76.31
" " $\frac{E}{L} =$ 76.31
Percentage from Table, Line A.
(corrected for absence of forecastle (if required))
Percentage from Table, Line B. 70.76
(corrected for absence of forecastle (if required))
Interpolation for bridge less than .2L (if required)
Deduction = 34.80 + .7076 = 24.63

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P. ...	<u>39.2</u>	<u>1</u>	<u>39.20</u>	<u>37.75</u>	<u>37.75</u>	<u>1</u>	<u>37.75</u>
$\frac{1}{8}L$ from A.P. ...	<u>17.44</u>	<u>4</u>	<u>69.76</u>	<u>12.64</u>	<u>12.64</u>	<u>4</u>	<u>50.56</u>
$\frac{2}{8}L$ " ...	<u>4.31</u>	<u>2</u>	<u>8.62</u>	<u>3.16</u>	<u>3.16</u>	<u>2</u>	<u>6.32</u>
Amidships ...		<u>4</u>				<u>4</u>	
$\frac{3}{8}L$ from F.P. ...	<u>8.62</u>	<u>2</u>	<u>17.24</u>	<u>9.48</u>	<u>9.48</u>	<u>2</u>	<u>18.96</u>
$\frac{4}{8}L$ " ...	<u>34.88</u>	<u>4</u>	<u>139.52</u>	<u>37.92</u>	<u>37.92</u>	<u>4</u>	<u>151.68</u>
F.P. ...	<u>78.40</u>	<u>1</u>	<u>78.40</u>	<u>92.25</u>	<u>92.25</u>	<u>1</u>	<u>92.25</u>
Total ...			<u>352.74</u>				<u>357.52</u>

Mean actual sheer aft = 815%
Mean standard sheer aft

Mean actual sheer forward = Excess
Mean standard sheer forward

Length of enclosed superstructure forward of amidships =

" " aft of " =

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

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.

Depth to Freeboard Deck = 21.60
Summer freeboard = 2.12
Moulded draught (d) = 19.48

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = 4.87

Addition for Winter North Atlantic Freeboard (if required) = 2

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta =$
Tons per inch immersion at summer load water line

T =

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

$\frac{d}{4} = 4\frac{3}{4}$

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{.812 + .68}{1.36} =$ 1.492

Depth Correction ... 4.79

Deduction for superstructures ... 24.63

Sheer correction ... 10

Round of Beam correction ... 01

Correction for Thickness of Deck amidships ...

Other corrections, scantlings, etc. ...

Summer Freeboard = 25.55

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

Tropical Fresh Water Line above Centre of Disc ...	<u>9 1/2</u>
Fresh Water Line " " ...	<u>4 3/4</u>
Tropical Line " " ...	<u>4 3/4</u>
Winter Line below " " ...	<u>4 3/4</u>
Winter North Atlantic Line " " ...	<u>6 3/4</u>

Tropical Fresh Water Freeboard ...	<u>1-4</u>
Fresh Water " " ...	<u>1-8 3/4</u>
Tropical " " ...	<u>1-8 3/4</u>
Winter " " ...	<u>2-6 1/4</u>
Winter North Atlantic " " ...	<u>2-8 1/4</u>

28 MAY 1932

W486-0284 1/2



Lloyd's Register Foundation

Particulars of fiddle, funnel and ventilator coamings:—
 Stokchold gratings covered by strong steel linged covers.
 Fiddle and funnel Ventilators in an efficient condition.
 Engine Skylight of Wood of substantial construction.

NONE

Particulars of Companionways:— 1 Steel companion on Forecastle deck 3'-3" x 3'-0" x 6'-0" high leading to Forecastle, door of steel with 8" sill operated for both sides.

Particulars of Ventilators in exposed positions on freeboard and superstructure decks:—							
1	Vent	on Forecastle	BR	17" dia	coaming	5'-6" x 38"	supported
2	"	"	BR	17"	"	4'-0" x 38"	led to Hold space
2	"	Bridge	DR	17"	"	12'-6" x 38"	supported
2	"	Poop	"	6"	"	1'-6" x 20"	enclosed poop. (Supported) ✓

~~This ship is laid up & no closing appliances could ^{not} be produced.~~

wood plugs and canvas covers supplied

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

No.	Particulars	Height	Diameter	Position
1	C.I. Air pipe on Forecastle	1-11"	2" dia	from Fore Peak
1	" " " "	2-3	" x 2"	" Double Bottom Tank (Fore Well)
2	" " " " Freeboard	3-4	" x 2"	" " "
14	" " " " Bridge	2-9	" x 2"	" " "
1	" " " " Freeboard	3-4	" x 2"	" " (Aft Well)

~~This ship is laid up & no closing appliances could^{not} be produced~~

wood plugs and Canvas covers supplied.

NONE ✓

Particulars of Scupperns and Sanitary Discharge Pipes :-

→ Scupper from enclosed space on Freeboard & ~~had~~ ^{is} ~~intended~~ bulges, one now closed with plate
3 Sanitary discharge pipes from Superstructure & discharge through Ship's side above Freeboard
2 " " " " " " " " " " " " " " below
Sanitary discharge fitted with atom valves at ship's side and efficient traps at lower end ✓

all side scuttles fitted with hinged deadlights of substantial construction. ✓

Particulars of Guard Rails:—

Guard rails	on	Forecastle	Deck	3'-0" high	having	3 rods,	stanchions	4'-6" apart
"	"	"	"	3'-4"	"	"	"	4'-6"
Rulework	3'-6" high	and	strongly supported	on	bridge	deck	with	open rails in way of
Nos	2 & 3	cargo	hatches.					

Garway fitted from Bridge to Forecastle efficiently supported, having
stanchions and one guard chain on each side

~~No gangway or lifelines from Pooja to Bridge~~

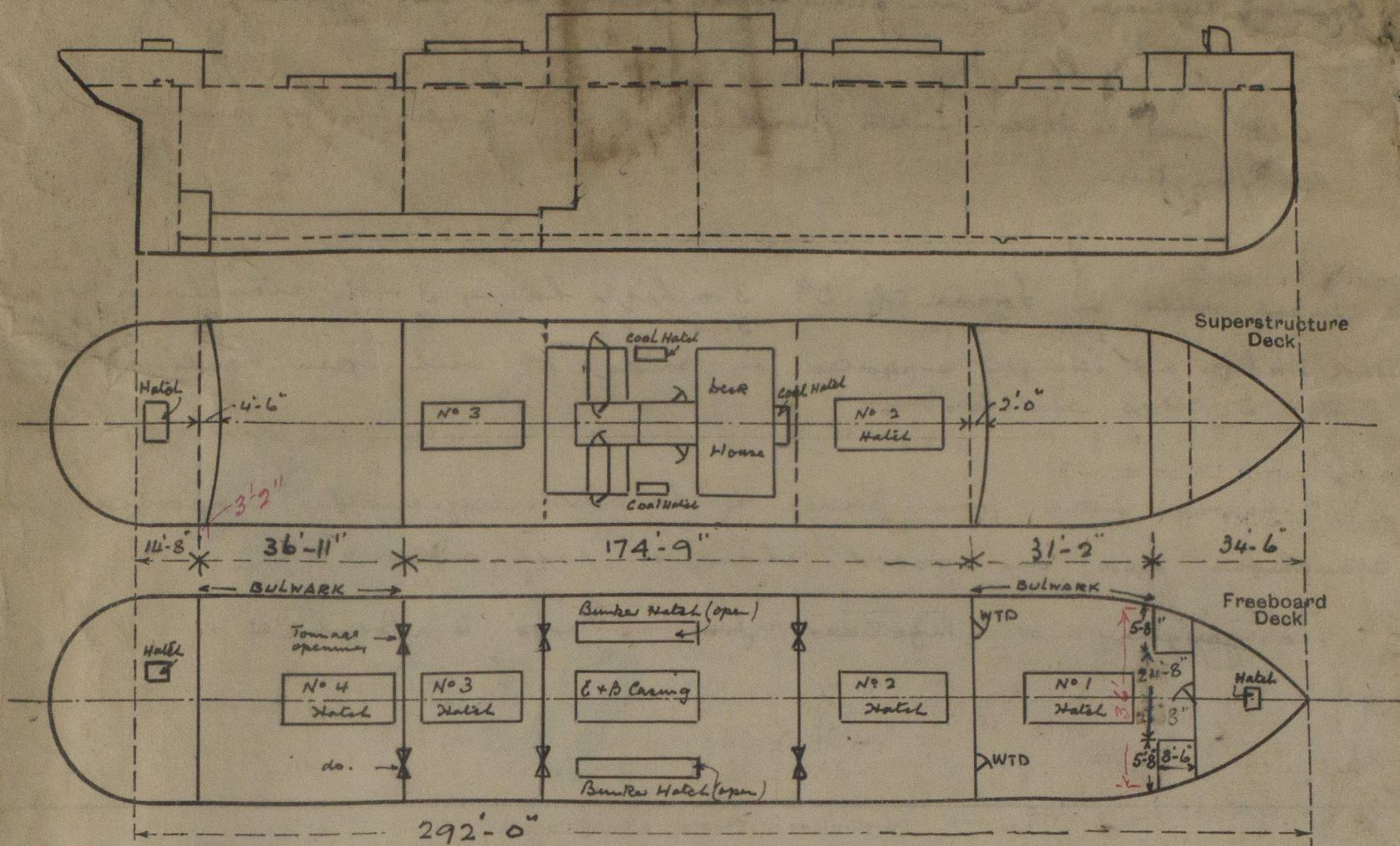
Lepelines fatted in a paper well
on both sides of ship.

and give particulars of such: — 2 round bars . 9" apart . 7/8" dia .

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

Poop Bulkhead	No openings
Raised Quarter Deck Bulkhead	...	(Thickness)
Bridge, After Bulkhead	Tonnage opening battens carried to full height in divided channels
Bridge, Forward Bulkhead	2 hinged steel w.t. doors operated from one side
Forecastle Bulkhead	1 hinged steel door operated from both sides ✓
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	...	✓
Exposed Machinery Casings on Superstructure Decks	2 hinged steel doors operated from both sides ✓ 2 " hardwood " " " "
Machinery Casings within Superstructures fitted with Class I Closing Appliances	2 hinged hardwood doors operated from both sides ✓
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:—



Poop 14.67
 Overhang 3.16
 178.83

Bridge 174.75
 1/32
 176.08

Side 34.50
 85.29.67 = 582
 36 28.68
 allow. 11 292.11
 overhang 5.3
 34.5

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

- Small Hatchways -				
Position	Size	Coaming	Battening	
1 Hatch in Forecastle to forepeak	2'-1" x 2'-1"	3" angle	wood covers no battening	
1 Coal Hatch Bridge &c	8'-0" x 2'-6"	2'-8" x 38"	wood covers, cleats, battens 7 tarpaulins	
2 " " " "	8'-0" x 3'-0"	2'-8" x 38"	" " " "	
1 Store " Poop "	6'-0" x 4'-2"	2'-8" x 38"	" " " "	
2 Bunkers " upper "	32'-0" x 3'-0"	9" B.A.	" " " "	
1 Hatch (in Poop) upper "	3'-10" x 3'-0"	14" x 36"	no covers. (open to lower bunkers) but cleats fitted	

Builder's name and yard number Flensburg Schiffsb Ges. Flensburg.

Names of sister ships

Owners Westcott & Lawrence Line Ltd.

Fee £ 10 : 4 : 0 Received by me 24/5/32