

Rpt. C.11.

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9 FEB 1932

Index. No. 32701.  
(For London Office only.)Lloyd's Register of Shipping.  
SURVEYS FOR FREEBOARD.

No. 99816.

Computation of Freeboard for Steamer, Sailing Ship, Tanker

Having

File and Bridge House

Port of Survey

Liverpool

(Type of Superstructures.)

Def 74 3.7.35

Date of Survey

February 1932

Ship's Name

BACTRIA

Nationality and Port of Registry

British  
London

Official Number

160411

Gross Tonnage

2402

Date of Build

1928.4

Name of Surveyor

Geo. R. Ryle

Particulars of Classification

DB 100 A.1.

Moulded Dimensions: Length 292.0 Breadth 44.75 Depth 22.6"  
Moulded displacement at moulded draught = 85 per cent. of moulded depth 5293 tons  
Assignment of fineness for use with Tables 741

Depth for Freeboard (D)

Depth correction

Round of Beam correction

Moulded depth ... 22.6"

(a) Where D is greater than Table depth

Moulded Breadth (B) 44.75

Standard Round of Beam =  $\frac{B \times 12}{50} = 10.94$ 

(D - Table depth) R =

Ship's Round of Beam = 11"

Sheathing on exposed deck

(b) Where D is less than Table depth (if allowed)

Difference

T =  $\frac{S}{L}$ 

(Table depth - D) R =

Restricted to

Depth for Freeboard (D) = 22.53

If restricted by superstructures

Correction =  $\frac{\text{Diff}^{\circ}}{4} \times \left(1 - \frac{S_1}{L}\right) = \frac{26}{4} \times .457 = -1.03$ 

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Superstructure enclosed ...					
overhang ...					
Superstructure D. enclosed ...					
overhang ...					
Bridge enclosed ...	128.62	128.62	7.9	-	128.62
overhang aft ...					
overhang forward ...	29.56	29.56	7.9	-	29.56
Superstructure enclosed ...	29.56	29.56	7.9	-	29.56
overhang ...	6				
Trunk aft ...					
forward ...					
Tonnage opening aft ...					
forward ...					
Total ...	158.18	158.18			158.18

Standard Height of Superstructure 6.42

R.Q.D.

Deduction for complete superstructure 34.80

Percentage covered  $\frac{S}{L} = 54.14$  $\frac{S_1}{L} = 54.14$  $\frac{E}{L} = 54.14$ 

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 =  $34.80 \times .4014 = -13.98$ 

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	39.20	1		39.20	39	39.00	1		39.00
1/2 L from A.P. ...	17.44	4		69.76	17.38	17.38	4		69.52
1/4 L ...	4.31	2		8.62	4.34	4.34	2		8.68
Amidships ...		4					4		
1/4 L from F.P. ...	8.62	2		17.24	8.69	8.69	2		17.38
1/2 L ...	34.89	4		139.56	34.76	34.76	4		139.04
F.P. ...	78.40	1		78.40	78.00	78.00	1		78.00
Total ...				352.78					351.62

Mean actual sheer aft =

Mean standard sheer aft =

Mean actual sheer forward =

Mean standard sheer forward =

Length of enclosed superstructure forward of amidships = .137L

aft of amidships = .303L

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( \frac{75 - \frac{S}{2L}}{18} \right) = \frac{1.16}{18} \times (.45 - .2408) = +.03$ 

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.

Depth to Freeboard Deck = 22.53

Summer freeboard = 3.02

Moulded draught (d) = 19.51

Deduction for Tropical freeboard and addition for

Winter freeboard =  $\frac{d}{4}$  inches = 4.88 = 5"

Addition for Winter North Atlantic Freeboard (if required) = 2.00"

Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta = 5438$ 

Tons per inch immersion at summer load water line

T = 26.1

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

= 5.21

(= 5 1/4")

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

Depth Correction ...

Deduction for superstructures ...

Sheer correction ...

Round of Beam correction ...

Correction for Thickness of Deck amidships

Other corrections, scantlings, etc. ...

41.48

43.32

6.88

13.98

.03

.03

.03

6.91

14.01

- 4.10

Summer Freeboard = 36.24

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

Tropical Fresh Water Line above Centre of Disc ... 10 1/4"

Fresh Water Line " " ... 5 1/4"

Tropical Line " " ... 5"

Winter Line below " " ... 5"

Winter North Atlantic Line " " ... 4"

Tropical Fresh Water Freeboard ...

Fresh Water " ...

Tropical " ...

Winter " ...

Winter North Atlantic " ...

16 JUL 1932

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21 JUL 1936

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Lloyd's Register

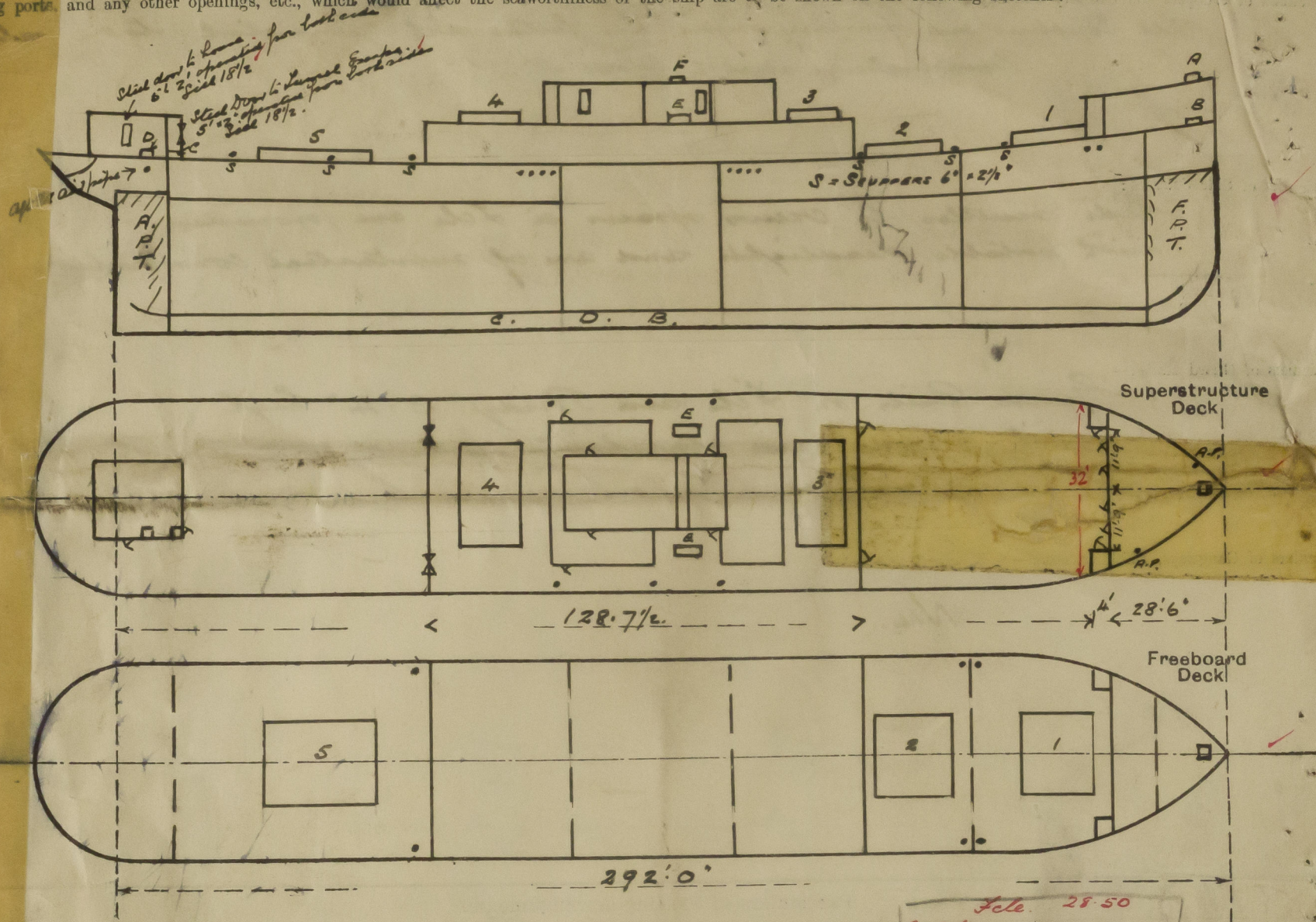
FOUNDED 1826







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:—



A = Hatch on Side Deck.  $3' \times 2'$   
Coaming  $19'' \times 4'$   
Wood Cover  $2\frac{1}{2}''$   
Plating Surface  $2\frac{1}{2}''$   
Cleat & Battering Arrangement  
2 Parapet

B = Hatch on Upper Deck in Side  
Coaming  $9 \times 3\frac{1}{2}'' \times 4'$   
Wood Cover  $2\frac{1}{2}''$   
Plating Surface  $2\frac{1}{2}''$   
Cleat & Battering Arrangement  
2 Parapet

Side Deck  
 $4 \times 25 \times 4 = 1.06$   
 $1.06 \times 29.56 = 31.35$   
Scale 28.50

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

C = Forward Escape — Entrance by Steel door opening from both sides. Side  $18\frac{1}{2}''$   
Fwd Coaming  $3'$

D = Hatch to Aft Deck (inside deckhouse)  
Coaming  $18'' \times 3'$   
Wood Cover  $2\frac{1}{2}''$   
Plating Surface  $2\frac{1}{2}''$   
Battering & Battering Arrangement  
2 Parapet

E Bunkers, Hatch on Bridge  $10'3'' \times 3'6''$   
Coaming  $30'' \times 4'$   
Wood Cover  $2\frac{1}{2}''$   
Plating Surface  $2\frac{1}{2}''$   
Cleat  $23''$   
2 Parapet each side  
Battering Arrangement

F Coaling Hatch on Side Deck  $13'6'' \times 4'0''$   
Coaming  $16\frac{1}{2}'' \times 4'$   
Wood Cover  $2\frac{1}{2}''$   
Plating Surface  $2\frac{1}{2}''$   
Cleat  $23''$   
2 Parapet  
Battering Arrangement

$\Delta @ 85\% M.O.$

$\Delta @ 19'6\frac{1}{2}''$  draft =  $5405$  tons  
 $85\% M.O. = 19'11\frac{1}{2}'' + 1\frac{3}{4}''$  keel =  $19'3\frac{1}{4}''$   
Diff in draft =  $3\frac{1}{4}''$   
T.P.L. =  $26.09$   
Diff  $\Delta = 3.25 \times 26.09 = 85$  tons  
 $\Delta @ 19'3\frac{1}{4}'' = 5405 - 85 = 5320$   
 $5320 \times 1.06 = 5639.2$

Vessel was examined in Dry Dock.  
Shum was measured " " "

Builder's name and yard number

Names of sister ships

Owners

Fee £ 10 : 4 : 0

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