

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

No. 105369.

Computation of Freeboard for Steamer, Sailing Ship, Tanker
having "POOP: BRIDGE: & FORECASTLE"

(Type of Superstructures.)

Ship's Name **"BALFE"** Nationality and Port of Registry **BRITISH: LIVERPOOL:** Official Number **143604** Gross Tonnage **5365: 5389** Date of Build **1920: 1 month:**

Moulded Dimensions: Length **400.1** Breadth **52.8** Depth **28.4**
Moulded displacement at moulded draught = 85 per cent. of moulded depth **W.P. 31.0** tons
Coefficient of fineness for use with Tables **.770**

Port of Survey **LIVERPOOL.**
Date of Survey **April: 1935:**
Name of Surveyor **J. J. Malcolum**
Particulars of Classification **80. 100A1:**

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth 31.	(a) Where D is greater than Table depth (D - Table depth) R = (31.04 - 26.63) 3.00	Moulded Breadth (B) 52.0
Stringer plate 48.	= + 13.23"	Standard Round of Beam = $\frac{B \times 12}{50} = 12.48"$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ ✓	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = ✓	Ship's Round of Beam = 13"
Depth for Freeboard (D) = 31.04	If restricted by superstructures ✓	Difference Excess, .52"
		Restricted to
		Correction = $\frac{\text{Diff}^e}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.52}{4} (.499) = -.06"$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed	49.25	49.25	7-11 1/2	1	49.25
" overhang					
R.Q.D. enclosed					
" overhang					
Bridge enclosed	112.66	112.66	7-11 1/2	✓	112.66
" overhang aft					
" overhang forward					
Fore enclosed	38.25	38.25	7-11 1/2	✓	38.25
" overhang					
Trunk aft					
" forward					
Tonnage opening aft					
" forward					
Total	200.16	200.16			200.16

Standard Height of Superstructure **7.50'**
" " R.Q.D. **✓**
Deduction for complete superstructure **41.97"**
Percentage covered $\frac{S}{L} = 50.10\%$
" " $\frac{S_1}{L} = 50.10\%$
" " $\frac{E}{L} = 50.10\%$
Percentage from Table, Line A.
(corrected for absence of forecastle (if required))
Percentage from Table, Line B. **36.10%**
(corrected for absence of forecastle (if required))
Interpolation for bridge less than 2L (if required)
Deduction = **41.97 x .361 = -15.15"**

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	49.95	1		49.95	60.	60.00	1		60.00
1/4 L from A.P.	22.22	4		88.88	47.	26.46	4		105.84
3/4 L "	5.50	2		11.00	11.	6.61	2		13.22
Amidships	✓	4		✓	0.	✓	4		✓
3/4 L from F.P.	10.99	2		21.98	23.	13.35	2		26.66
1/4 L "	44.45	4		177.80	94.	53.32	4		213.28
F.P.	99.90	1		99.90	120.	120.00	1		120.00
Total				449.51					539.00

Mean actual sheer aft = **Excess**
Mean standard sheer aft
Mean actual sheer forward = **Excess**
Mean standard sheer forward
Length of enclosed superstructure forward of amidships = **> .1L**
" " aft of " = **> .1L**

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{89.49}{18} (.75 - .2505) = -2.148"$$

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 = **31.04**
Summer freeboard = **5.96**
Moulded draught (d) = **25.08**

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = **6.27" = 6 1/4"**Addition for Winter North Atlantic Freeboard (if required) = **✓**

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$$\Delta = 11470$$

Tons per inch immersion at summer load water line

$$T = 41.10$$

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

$$= 6.98$$

$$= 7"$$

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

	+	-
Depth Correction	13.23	-
Deduction for superstructures	-	15.15
Sheer correction	-	2.18
Round of Beam correction	-	.06
Correction for Thickness of Deck amidships	-	-
Other corrections, scantlings, etc.	-	-
	13.23	17.69

Summer Freeboard = **71.35**

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

Tropical Fresh Water Line above Centre of Disc	13 1/4"	Tropical Fresh Water Freeboard	5'-11 1/2"
Fresh Water Line " "	7"	Fresh Water " "	4'-10 1/2"
Tropical Line " "	6 1/4"	Tropical " "	5'-5 1/2"
Winter Line below " "	4"	Winter " "	6'-5 3/4"
Winter North Atlantic Line " "	✓	Winter North Atlantic " "	✓

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PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS										
			← FWD. WELL →		BRIDGE		← AFT. WELL →		BRIDGE TWEEN	
Description of Hatchway	...	...	Nº 1:	Nº 2:	Nº 3:	Nº 4:	Nº 5:		Nº 3:	
Dimensions of Hatchway	...	...	28'-2" x 18'	30'-4" x 18'	8'-8" x 18'	30'-4" x 18'	28'-2" x 18'		18' x 8'-6"	
COAMINGS	Height above Deck	...	30'	30'	18'	30'	30'		9" B.A.	
	Thickness	Sides	.50'	.50'	.44'	.50'	.50'		.44'	
		Ends	.44'	.44'	.44'	.44'	.44'			
	Stiffeners	...	7 x 3 1/2 x 3/8 B.S.	✓	✓	✓	✓		✓	
	Brackets, Stays	...	✓	✓	✓	✓	✓		✓	
HATCH BEAMS	Number	...	5	5	1	5	5		1	
	Spacing	...	4'-8"	5'-0"	12'	5'-0"	4'-8"		12'	
	Scantling and Sketch	...	At Nº 1 and 5: 13"-10"	At Nº 3 = 12"	At Nº 2 and 4 = 16"-11"	At Nº 1 and 5: 13"-10"	At Nº 3 = 12"		At Nº 2 and 4 = 16"-11"	
	Bearing Surface	...	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"		2 1/2"	
FORE AND AFTERS	Number	...								
	Spacing	...								
	Unsupported Lengths	...								
	Scantling* and Sketch	...								
	Bearing Surface	...								
HATCH COVERS	Material	...	W.W.							
	Thickness	...	3"							
	How fitted	...	F.V.A.							
	Bearing Surface	...	3"							
Spacing of Cleats	...	...	24"	24"	24"	24"	24"		24"	
Number of Tarpaulins	...	...	2.3	2.3	2.3	2.3	2.3		2.3	

*Are wood fore and afters steel shod at all bearing surfaces? NONE: ✓

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? ✓

Particulars of fiddley, funnel and ventilator coamings:— For Bunker Hatch on fiddley see page 4:

2: Engine Room. Pul. Coaming @ 4'-6" x 20 1/2" drain: x 1/8 thick: ✓

2 " " " " " ~~To be removed:~~
2 Stakeholder " " " " "

Finally grating covers to ~~turn~~^{test} and clips on haul as recommended: }
attached with Luegis }

~~12 Engraving Room 2 highlight glamo to recent:~~
highlight of steel strongly constructed and efficient:

Particulars of Flush Bunker Scuttles:—

NONE.

ers of Companionways :—

Entrance doors to steering gear on poop: 1P.115: @ 5'-2" x 2'-0" x 14" sill: Wood doors. ~~Not lock to mechanism;~~

Tunnel escape in Steeg grade House: Steel door 4'-11" x 2'-6" x 6 1/2" Sill: in excellent condition ✓

Entrance in Poop House aft to Potato Locker:- 1 @ 5'-3" x 2'-0" x 16" sill. Steel door lock efficient: ✓

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

1e head: 3'-2" high x 10" diam x 3/8" thick to fcle spec:

" 2@ 3'-0" " 1x 18" " x 3/8 " " n=1. Hold:

" 1 @ 1'-2" " 1 x 10" " 3/8" " " To Carpenter Shop on F.B. Stk;

NO WELL. DK: 3P.35: 3'-0 1/2" " x 18" " x 5/16" " " No 1 and 2. Hold:

Ag. DK. 1P.15: @ 2'-6" x 1'-2" " x 3/16" " To Bridge Joints:

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

REPEAK: air pipe on F cle head: 14" to lip x 3 1/4" diam. x 3/8" thick C.I.

Well. " " To No. 1. DB Tank: 2' 6" $\frac{1}{4}$ " " x 2" " x $\frac{1}{4}$ " " w. l.: 1 Post v 15 tan 6:

dk. " " " 7th 2v3 " " 15 1/2 " " x 13 1/4 " " x 1/4 " w.1: 2P.v2.5:
" " " 10th 2v3 " " 15 1/2 " " x 13 1/4 " " x 1/4 " w.1: 2P.v2.5:
" " " 11th 2v3 " " 15 1/2 " " x 13 1/4 " " x 1/4 " w.1: 2P.v2.5:

" " " " 10.4. " " 15" ✓ " 13/4 " x 1/4 " w.l: 1P. v 13.

6: " " " To. AP. Tank: 1'-8 1/2. ✓ " 2 1/4 " x 1/4. " w-1: 1P ✓ 15:

ulars of Gangway Cargo and Coaling Ports :—

ONE.

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No sanitary discharge pipes below fireboard deck: ✓

2. Port. & 2 Star Scupper in Bridge tower: Deck are now fitted with wood plugs and caulked on.

In poop: lugia type with lugia deadlight and efficient: 1

File: Head: 3'-3" hgt: 3'-8" spacing between stations 2. Rain: ✓

Budget OK: 3'-5" " 3'-10 1/2" " " " 3 "

Pop. Sk: 3'-6' " 4'-1" " " 2 "

Buildings in Wells, for details see Below:

particulars of Gangways, Lifelines, etc. :—

Lips turn in forward and after talk with suitable eye both etc:
and unexpected.

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	99'-6"	3'-8:	4'-8" x 18:	3.	21. 17 ^{19.90}	20. 17 ^{19.90}
Forward Well	99'-6:	3'-7.	4'-8 x 18:	3:	21 17 ^{19.90}	20 17 ^{19.90}

State position of each freeing port { After Well:— POOP. FRONT 22'-8" 16" BRIDGE. END: 20'-4"

(P. and A. position and height above deck edge) { Forward Well:— BRIDGE. FRONT. 10'-6" 16" 28'-4" FOLE. FRONT:

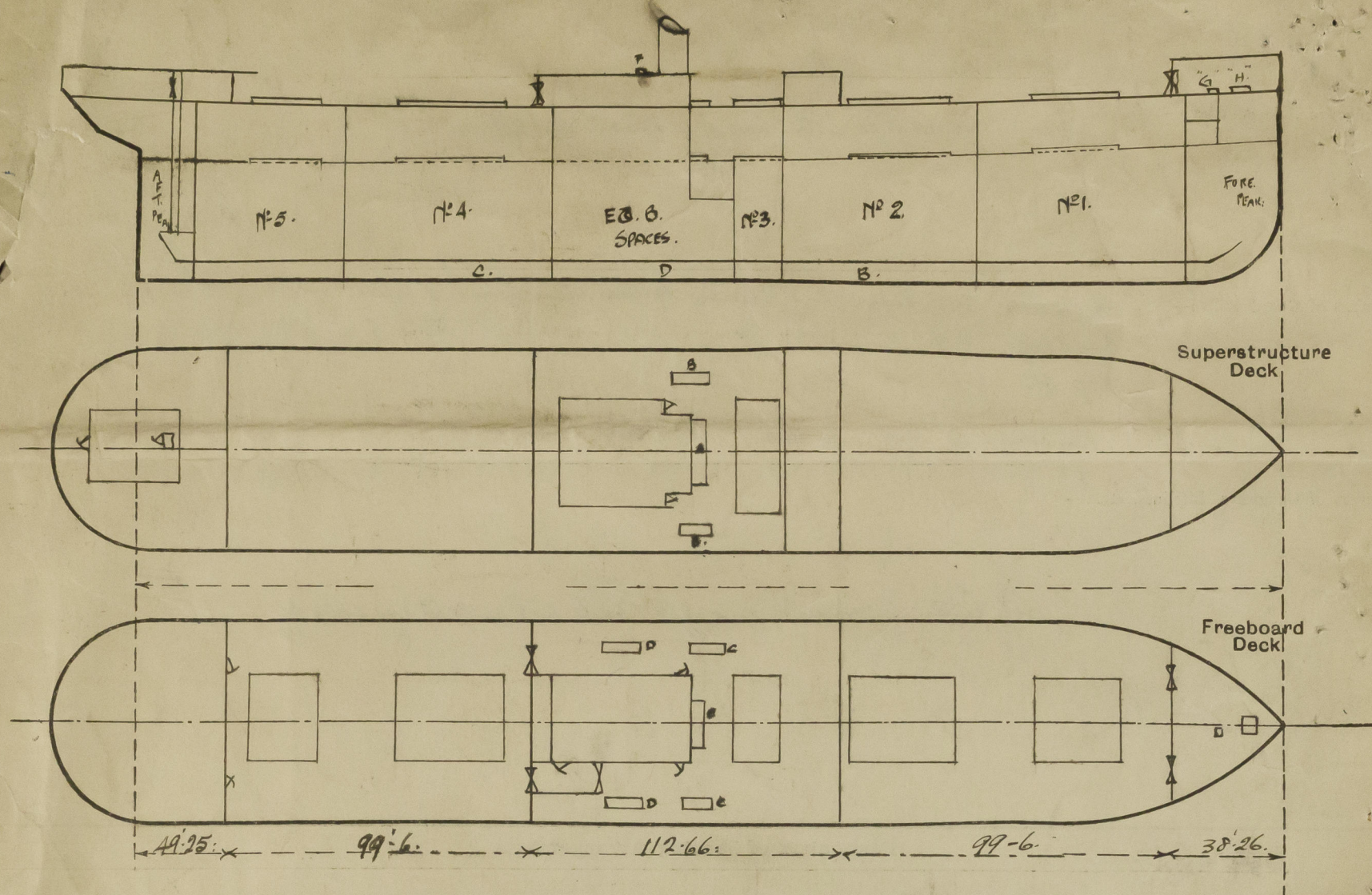
State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— BARS: 16"

Additional area where sheer is less than standard.

	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead	3/8.	3/8.	6x3 x 5/16.	2'-6"	NONE:	2@5'-1"x3'-0"	19"	7'-11 1/2"
Raised Quarter Deck Bulkhead ...	✓	✓	✓	✓	✓	✓	✓	✓
Bridge, After Bulkhead	3/8.	3/8.	3x3 x 5/16.	2'-6"	NONE:	2@5'-0"x3'-10"	19"	7'-11 1/2."
Bridge, Forward Bulkhead	1/2"	7/16.	9x3 x 3/8-B-A.	2'-6"	BKTS: Top & Bottom. 18 1/2"	NONE:	✓	7'-11 1/2."
Forecastle Bulkhead	5/16.	1/4.	3 x 3 x 3/8.	2'-0.	NONE:	7'-3 x 3'-7."	3"	7'-11 1/2."
Trunk, Aft	✓	✓	✓	✓	✓	✓	✓	✓
Trunk, Forward	✓	✓	✓	✓	✓	✓	✓	✓
Exposed Machinery Casings on Free- board or Raised Quarter Decks ...	✓	✓	✓	✓	✓	✓	✓	✓
Exposed Machinery Casings on Super- structure Decks	✓	Vertical: 3/8	Flanged. 2 1/2."	3'-7 1/2"	NONE:	2@5'-2"x23" 2@5'-3"x23 1/2"	15" 15 1/2"	8'-4"
Machinery Casings within Superstruc- tures not fitted with Class I Closing Appliances	✓	Vertical 3/8"	4" Flangs. and 3x3: OA:	2'-10"	NONE.	2@5'-2"x23" 1@5'-1"x22 1/2:"	19" 19	7'-11"
Deckhouses on Flush Deck Ships ...	✓	✓	✓	✓	✓	✓	✓	✓

	Particulars of Closing Appliances (state if capable of being manipulated from both sides).
Bulkhead	2. Steel doors in efficient condition and operated from both sides ✓
Raised Quarter Deck Bulkhead ...	✓
Bridge, After Bulkhead	Shipping Boards in permanently united channels full height: ✓ No openings: ✓
Bridge, Forward Bulkhead	
Forecastle Bulkhead	Shipping Boards in permanently united channels full height: ✓
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	✓
Exposed Machinery Casings on Super-structure Decks	
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	Steel Doors in efficient condition operated from both sides: ✓
Deckhouses on Flush Deck Ships ...	Steel Door " " " " " " " " " " ✓

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:—

BUNKER HATCHES: "A" ON BRIDGE DECK:

8'0" x 5'8" x 1'8" coaming;
Rest Bars: 3" with 3" wood hatches;
Cleats & Battening arrangements: 3;
2 Taraulins: ✓

BRIDGE TWEEN BUNKER HATCHES: "C"

1 P. 15. 8'4" x 5'8" x 9" B.A. Coaming;
3" Rest Bars with 3" Wood Hatches;
Cleats and Battening Arrangements;
2 Taraulins: ✓

"G" Under Fore head to Chain Locks:

1 @ 2'0" x 2'0" x 9" B.A. Coaming;
3" Rest Bar with 3" wood plug hatch;

SIDE BUNKER HATCHES: ON BRIDGE DECK: "B"

1 P. 15. 7'9" x 4'0" x 1'8" coaming;
Rest Bars 3" with 3" wood hatches, cleats
& Battening arrangements. 2 Taraulins: ✓

BRIDGE TWEEN BUNKER HATCHES: "E"

1 @ 8'0" x 4'6" x 9" B.A. Coaming;
Rest Bars: 3" with 3" wood hatches, cleats
& Battening arrangements. 2 Taraulins: ✓

"H" Hatch to fore peak under fore head:

1 @ 2'11 1/2" x 3'0" x 9" B.A. Rest Bar 3"
3" wood plug hatch: ✓

BRIDGE TWEEN BUNKER HATCHES: "D"

1 P. 15. 8'8" x 3'0" x 9" B.A. Coaming;
Rest Bars: 4" 3" wood hatches, cleats
& battening arrangements. 2 Taraulins: ✓

BUNKER HATCH: ON FIDLEY DECK: "F"

1 @ 18'0" x 4'0" x 1'3" coaming; Rest Bars: 3" with 3" wood
corn; Cleats and Battening arrangements and 2
Taraulins: ✓

The 5:5: N°3: is being carried out at this time, and will be completed prior to sailing

Builder's name and yard number D and W. Henderson & Co Ltd. YARD: N° 522:

Names of sister ships D " W. YARD: N° 523:

OWNERS Lampport & Holt Ltd.

For £ 16 : - - Received by me

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