

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Index. No. 27273
(For London Office only.)

7 OCT 1932

Computation of Freeboard for Steamer, Sailing Ship, Tanker
having Pool. Bridge & Forecastle

Port of Survey Newcastle

Date of Survey 4th Oct. 1932

Name of Surveyor P. Horndale

Particulars of Classification +100 A1.

S.S. Nwc. No. 3-2.32

(Type of Superstructures.)
Ship's Name "SHEAF SPEAR"
Nationality and Port of Registry British Newcastle
Official Number 142825
Gross Tonnage 3050
Date of Build 1919-1
Moulded Dimensions: Length 330.62' Breadth 46.50' Depth 25.50'
Moulded displacement at moulded draught = 85 per cent. of moulded depth 7247 tons
Coefficient of fineness for use with Tables .761

Depth for Freeboard (D)
Moulded depth 25.50
Stringer plate04
Sheathing on exposed deck
 $T \left(\frac{L-S}{L} \right) =$ ✓
Depth for Freeboard (D) = 25.54

Depth correction
(a) Where D is greater than Table depth
(D - Table depth) R =
(25.54 - 22.04) 2.543 = +8.90
(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) 46.5
Standard Round of Beam = $\frac{B \times 12}{50} =$ 11.16
Ship's Round of Beam = 12"
Difference .84
Restricted to
Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.84}{4} \times \left(\frac{.5137}{1} \right) = -.11$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...	<u>33.00'</u>	<u>33.00</u>	<u>7'-6"</u>	<u>✓</u>	<u>33.00</u>
" overhang ...	-	-	-	-	-
R.Q.D. enclosed ...	-	-	-	-	-
" overhang ...	-	-	-	-	-
Bridge enclosed ...	<u>98.00'</u>	<u>98.00</u>	<u>7'-6"</u>	<u>✓</u>	<u>98.00</u>
" overhang aft ...	<u>+ 2.04'</u>	<u>1.53</u>	-	-	<u>1.53</u>
" overhang forward ...	-	-	-	-	-
F'cle enclosed ...	<u>28.25'</u>	<u>28.25</u>	<u>7'-6"</u>	<u>✓</u>	<u>28.25</u>
" overhang ...	-	-	-	-	-
Trunk aft ...	-	-	-	-	-
" forward ...	-	-	-	-	-
Tonnage opening aft ...	-	-	-	-	-
" forward ...	-	-	-	-	-
Total ...	<u>161.29</u>	<u>160.78</u>	-	-	<u>160.78</u>

Standard Height of Superstructure 6.81
" " R.Q.D. ✓
Deduction for complete superstructure 37.37
Percentage covered $\frac{S}{L} =$ 48.78
" " $\frac{S_1}{L} =$ 48.63
" " $\frac{E}{L} =$ 48.63
Percentage from Table, Line A.
(corrected for absence of forecastle (if required))
Percentage from Table, Line B. 34.83
(corrected for absence of forecastle (if required))
Interpolation for bridge less than 2L (if required) ✓
Deduction = 37.37 x .3483 = -13.02

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	<u>43.06</u>	1		<u>43.06</u>	<u>55"</u>	<u>55.0</u>	1		<u>55.00</u>
$\frac{1}{2}$ L from A.P. ...	<u>19.16</u>	4		<u>76.64</u>	<u>23"</u>	<u>22.91</u>	4		<u>91.64</u>
$\frac{2}{3}$ L " ...	<u>4.74</u>	2		<u>9.48</u>	<u>5$\frac{3}{4}$"</u>	<u>5.73</u>	2		<u>11.46</u>
Amidships ...	-	4		-	-	-	4		-
$\frac{2}{3}$ L from F.P. ...	<u>9.48</u>	2		<u>18.96</u>	<u>11$\frac{1}{2}$"</u>	<u>11.45</u>	2		<u>22.90</u>
$\frac{1}{2}$ L " ...	<u>38.32</u>	4		<u>153.28</u>	<u>45$\frac{3}{4}$"</u>	<u>45.82</u>	4		<u>183.28</u>
F.P. ...	<u>86.12</u>	1		<u>86.12</u>	<u>102"</u>	<u>102.00</u>	1		<u>102.00</u>
Total ...				<u>287.54</u>					

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 = .155
" " aft of " = .141

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - S}{2L} \right) = \frac{78.74}{18} \left(\frac{.75 - .2439}{1} \right) = -2.21$

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 = 25.54
Summer freeboard = 3.98
Moulded draught (d) = 21.56

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 5.39 = 5 $\frac{1}{2}$
Addition for Winter North Atlantic Freeboard (if required) =

Deduction for Fresh Water.

Displacement in salt water at summer load water line
 $\Delta =$ 7265
Tons per inch immersion at summer load water line
 $T =$ 30.55
Deduction = $\frac{\Delta}{40T}$ inches
= 5.94
= 6"

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{761 + 68}{136}$

Depth Correction 8.90
Deduction for superstructures - 13.02
Sheer correction - 2.21
Round of Beam correction - .11
Correction for Thickness of Deck amidships -
Other corrections, scantlings, etc. -

	+	-
Depth Correction	<u>8.90</u>	-
Deduction for superstructures	-	<u>13.02</u>
Sheer correction	-	<u>2.21</u>
Round of Beam correction	-	<u>.11</u>
Correction for Thickness of Deck amidships	-	-
Other corrections, scantlings, etc.	-	-
	<u>8.90</u>	<u>15.34</u>

Summer Freeboard = 4'

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck :- 3'-11 $\frac{3}{4}$ "

Tropical Fresh Water Line above Centre of Disc ...	...	Tropical Fresh Water Freeboard ...	...
Fresh Water Line " " ...	...	Fresh Water " " ...	...
Tropical Line " " ...	...	Tropical " " ...	...
Winter Line below " " ...	... <u>5$\frac{1}{2}$"</u>	Winter " " ...	... <u>4'-5$\frac{1}{4}$"</u>
Winter North Atlantic Line " " ...	...	Winter North Atlantic " " ...	...

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS													
Upper Decks → Bridge → Upper Deck → Poop Coaming													
Description of Hatchway	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.	2 COAL HATCH	2 TO FORE PEAK	2 COAL HATCH	2 ESCAPE HATCH	2 TO AFT PEAK	2 TO STORE	2 TO COAL HATCH
Dimensions of Hatchway	26'6" x 18'0"	26'6" x 18'0"	12'3" x 18'0"	26'6" x 18'0"	26'6" x 18'0"	10'2" x 18'0"	6'9" x 3'3"	4'0" x 3'0"	5'6" x 3'3"	1'5" x 2'4"	1'8" x 2'4"	2'0" x 2'0"	5'6" x 18'0"
COAMINGS	Height above Deck	30"	30"	9'3 1/2" x 50"	30"	30"	30"	30"	30"	30"	10"	2'0"	12"
	Thickness	4 1/4"	4 1/4"	8 1/4"	4 1/4"	4 1/4"	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"
	Stiffeners	7 x 3 x 50 B.A.	5 x 5"	—	5 x 5"	5 x 5"	—	—	—	—	—	—	—
	Brackets, Stays	2 1/2" dia.	2 1/2"	—	2 1/2"	2 1/2"	—	—	—	—	—	—	—
HATCH BEAMS	Number	4	4	2	4	4	—	—	—	—	—	—	—
	Spacing	5'-3 1/2"	5'-3 1/2"	4'-0 3/4"	5'-3 1/2"	5'-3 1/2"	—	—	—	—	—	—	—
	Scantling and Sketch	16" x 38"	16" x 38"	15" x 42"	16" x 38"	16" x 38"	—	—	—	—	—	—	—
	Bearing Surface	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"	—	—	—	—	—	—	—
FORE AND AFTERS	Number	—	—	—	—	—	—	—	—	—	—	—	—
	Spacing	—	—	—	—	—	—	—	—	—	—	—	—
	Unsupported Lengths	—	—	—	—	—	—	—	—	—	—	—	—
	Scantling* and Sketch	—	—	—	—	—	—	—	—	—	—	—	—
HATCH COVERS	Material	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.
	Thickness	3"	3"	2 1/2"	3"	3"	3"	3"	3"	3"	3"	3"	3"
	How fitted	F.A.	F.A.	F.A.	F.A.	F.A.	F.A.	F.A.	F.A.	F.A.	F.A.	F.A.	F.A.
	Bearing Surface	3'4"	3'4"	3'4"	3'4"	3'4"	3"	3"	3"	3"	3"	3"	3"
Spacing of Cleats	24"	24"	20"	24"	24"	21"	24"	24"	20"	4 B.F. NUTS	16"	21-26"	—
Number of Tarpaulins	2 sets	1 spare	—	—	—	—	—	—	—	—	—	—	—
<p>*Are wood fore and afters steel shod at all bearing surfaces? <i>yes</i></p> <p>Are battens and wedges efficient and in good condition? <i>yes</i></p> <p>Are tarpaulins in good condition and in accordance with rule requirements? <i>yes</i></p> <p>Are lashings provided in accordance with rule requirements? <i>3 rings each side</i></p>													

Particulars of fiddle, funnel and ventilator coamings:—

Fiddle gratings are fitted with hinged steel covers.
 E.R. skylight is steel.
 Fiddle & funnel vents good.

Particulars of Flush Bunker Scuttles:—

None

Particulars of Companionways:—

Poop deck:— steel companion with hinged steel door operating both sides sill 12"

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

Tock deck:— 1 @ 16" dia. to hold. Coaming 30" x 36"
 Wells:— 7 @ 16" " " " 36" x 38"
 1 @ 8" " " tunnel " 22" x 30"
 Bridge:— 2 @ 16" " " hold. " 36" x 38"
 The ventilators are in accordance with Rule requirements.
 Closing - wood plugs & canvas covers.

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

Tock deck:— 1 @ 3 1/2" dia. led to fore peak x 16" to mouth
 1 @ 2" " " " D.B. tank x 17" " "
 Wells:— 6 @ 2" " " " " x 13-40" "
 Poop:— 1 @ 4" " " " aft peak x 30" " "

No closing.
Canvas covers provided for all air pipes

Particulars of Gangway Cargo and Coaling Ports:—

None



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Sheaf Spear

Particulars of Scuppers and Sanitary Discharge Pipes :-

all W.C. discharges are fitted with stop valves. ✓
no scuppers from bridge space overboard - no valves fitted.

Particulars of Side Scuttles :-

Poof, fore spaces: hinged dead-lights fitted. ✓

Particulars of Guard Rails :-

Poof, fore: 2 tier rails 3'0" high. Stans spaced 4'0"-5'0" apart. ✓
Bridge: 3 " 3'8" " 4'9" " ✓
Wells: bulwarks 3'9" high. Stans 8"x44" B.P. at 6'0" apart. ✓

Particulars of Gangways, Lifelines, etc. :-

Manilla life lines fitted on P. & S. sides of aft well deck. (Brew aft). ✓

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 ...	83' 8"	3' 9"	3' 3" x 19"	4	20.52 sq ft	16.73
Forward Well ...	85' 8"	3' 9"	2' 9" x 19"	4	17.38 sq ft	17.13

State position of each freeing port (P. and A. position and height above deck edge) } After Well: 19'0" - 37'6" - 56'0" & 69'0" from bridge end. ✓
Forward Well: 23'3" - 40'0" - 54'0" & 66'9" ✓
State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such: } 18" above deck. ✓

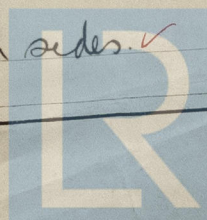
Additional area where sheer is less than standard.

Particulars of Superstructures, Trunks, Casings, Deckhouses.

	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poof Bulkhead ...	38"	34"	6" x 32" x 38"	30"	Lugs	3) 4'3" x 24"	22"	
Raised Quarter Deck Bulkhead ...		34"	32" x 32" x 36"	40"	None	2) 4'6" x 36"	18"	
Bridge, After Bulkhead ...		34"	8" x 3" x 58" BA	30"	Blts.	2) 4'0" x 30"	23"	
Bridge, Forward Bulkhead ...	42"	38"	3" x 3" x 40"	48"	None	1) 4'6" x 42" 2) 4'3" x 24" 3) 2'8" x 32"	18" 18" 36"	
Forecastle Bulkhead ...		26"						
Trunk, Aft ...	✓							
Trunk, Forward ...	✓							
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	38"	30"	32" x 32" x 44"	36"	None	4) 4'2" x 24"	18" & 23"	7'0" & 4'2"
Exposed Machinery Casings on Super-structure Decks ...	42"	38"	32" x 32" x 44"	36"		2) 4'0" x 24"	20"	
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).

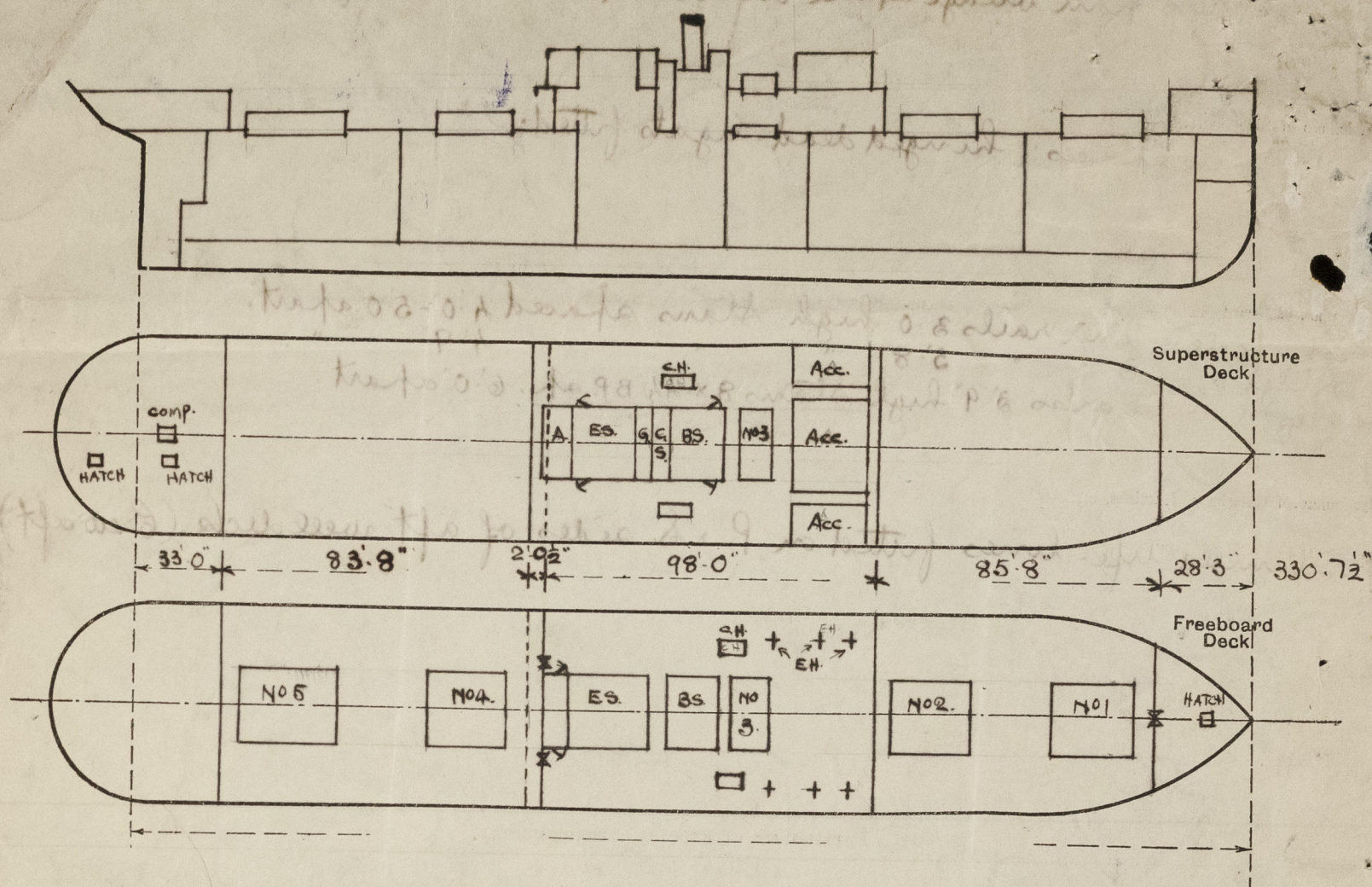
Poof Bulkhead ...	3 hinged steel doors - operating both sides. ✓
Raised Quarter Deck Bulkhead ...	✓
Bridge, After Bulkhead ...	2 F.H.R. channels & 2 3/4" boards. ✓
Bridge, Forward Bulkhead ...	2 hinged steel doors - operating one side only. ✓
Forecastle Bulkhead ...	1 F.H.R. channel & 2 3/4" boards. 2 hinged steel doors - operating both sides. ✓
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	1 hinged steel door - operating outside only (to ice house). ✓
Exposed Machinery Casings on Super-structure Decks ...	4 hinged steel doors - operating both sides. ✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ...	2 hinged steel doors - operating both sides. ✓
Deckhouses on Flush Deck Ships ...	✓



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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:— *Timber Assignment required.*

Rule 86:— *Forecastle & poop.*

Rule 88:— *centre girder 10" T except in No 1 & 6 tanks.*

Rule 89:— *bulwarks 3'-9" high. Stems 8" x 44" B.P. sh. 6'-0" apart. Rail 6" x 3" x 42.*

Rule 90:— *steam steering gear amidships. Leads run alongside hatches. Relieving tackles to poop winch.*

Rule 91:— *aft well: 8 channel sockets & 8 eyeplates spaced per requirements. Fore well: 9 " " 9 " "*

Sockets for uprights consist of 9" lengths of 9x3x3x.50 channels spaced 10' apart. Eyeplates consist of 7/8" plate connected to keelson with 3 or 4 rivets; spacing 10'; end eyeplates 6' 6" from the vessel examined in dry docks for ordinary condition survey.

Builder's name and yard number *J. Blumer & Co.*

Names of sister ships

Owners

Sheaf S.S. Co. Ltd. (W. A. Bonte Shipd. Mgrs)

Fee £ *11 : 18 : 0.*

Received by me



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