

# WRECK WNA SECTION

## Lloyd's Register of Shipping

### SURVEYS FOR FREEBOARD.

Index No. **25315**  
(For London Office only.)No. **560**  
14562

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having POOP, BRIDGE, & FORECASTLE.Port of Survey Middlesbrough.Survey held in dry dockDate of Survey 19-21 June /32.Name of Surveyor C.B. Scour.Particulars of Classification 100 A1.

Type of Superstructures.)

Ship's Name

SANDRA  
3/5 Benglon.

Nationality and Port of Official Number

Registry British, Rotherham  
LEITH, Nuff. 137058

Gross Tonnage

5318

Date of Build

1918-1.

Moulded Dimensions: Length 404.6 Breadth 52.21 Depth 30.25  
 Moulded displacement at moulded draught = 85 per cent. of moulded depth 10589 12400 tons  
 Coefficient of fineness for use with Tables .799

## Depth for Freeboard (D)

Moulded depth ... .. 30.25Stringer plate ... .. .04

Sheathing on exposed deck

$$T \left( \frac{L-S}{L} \right) =$$

Depth for Freeboard (D) = 30.29

## Depth correction

(a) Where D is greater than Table depth  
(D-Table depth) R =

$$(30.29 - 26.97) \times 3.0 = +9.96$$

(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) 52.21

$$\text{Standard Round of Beam} = \frac{B \times 12}{50} = 12.53$$

$$\text{Ship's Round of Beam} = 12.5 = 12.50$$

Difference .03

Restricted to

$$\text{Correction} = \frac{\text{Diff}}{4} \times \left( 1 - \frac{S_1}{L} \right) = \frac{.03}{4} \left( 1 - \frac{.495}{.505} \right) = \text{NIL}$$

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ... ..	36.00	36.00	8.0	✓	36.00
" overhang ... ..	.54	.27			.27
R.Q.D. enclosed ... ..					
" overhang ... ..					
Bridge enclosed ... ..	120.00	120.00	8.0	✓	120.00
" overhang aft ... ..	.29	.22			.22
" overhang forward ... ..	.29	.14			.14
Fore enclosed ... ..	43.50	43.50	8.0	✓	43.50
" overhang ... ..	.29	.14			.14
Trunk aft ... ..					
" forward ... ..					
Tonnage opening aft ... ..					
" " forward ... ..					
Total ... ..	200.91	200.27			200.27

Standard Height of Superstructure 7'-6"

" " R.Q.D. ✓

Deduction for complete superstructure 42.0

$$\text{Percentage covered } \frac{S}{L} = 49.65$$

$$\frac{S_1}{L} = 49.50$$

$$\frac{E}{L} = 49.50$$

Percentage from Table, Line A. ✓

(corrected for absence of forecastle (if required)) ✓

Percentage from Table, Line B. 35.57

(corrected for absence of forecastle (if required)) ✓

Interpolation for bridge less than 2L (if required) 297.4

$$\text{Deduction} = 42.0 \times .3557 = -14.94$$

## SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P. ... ..	50.46	1	50.46	63.0	63.00	1	63.00
1/4 L from A.P. ... ..	22.46	4	89.84	27.65	27.65	4	110.60
2/4 L " ... ..	5.55	2	11.10	6.91	6.91	2	13.82
Amidships ... ..	-	4	-	.00	-	4	-
3/4 L from F.P. ... ..	11.10	2	22.20	13.63	13.63	2	27.26
1/4 L " ... ..	44.91	4	179.64	54.51	54.51	4	218.04
F.P. ... ..	100.92	1	100.92	126.00	126.00	1	126.00
Total ... ..			454.16				558.72

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{104.56}{18} \left( .75 - \frac{.2482}{.5018} \right) = -2.91$$

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.

Depth to Freeboard Deck = 30.29Summer freeboard = 5.96Moulded draught (d) = 24.33

Deduction for Tropical freeboard and addition for

Winter freeboard =  $\frac{d}{4}$  inches = 6.08 = 6"

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

## Deduction for Fresh Water.

Displacement in salt water at summer load water line

$$\Delta = 11,743$$

Tons per inch immersion at summer load water line

$$T = 42.66$$

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

$$= \frac{11,743}{40 \times 42.66} = 6.88 = 6 \frac{3}{4}"$$

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

$$\text{Correction for coefficient} = \frac{799 + .68}{1.36} = \frac{1.479}{1.36}$$

Depth Correction ... .. 9.96Deduction for superstructures ... .. 14.94Sheer correction ... .. 2.91Round of Beam correction ... .. -Correction for Thickness of Deck amidships ... .. -Other corrections, scantlings, etc. ... .. -

$$9.96 - 14.94 + 2.91 = -1.97$$

Summer Freeboard = 71.43

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

Tropical Fresh Water Line above Centre of Disc ... .. 12 1/2Fresh Water Line " " ... .. 6 1/2Tropical Line " " ... .. 6Winter Line below " " ... .. 6Winter North Atlantic Line " " ... .. ✓Tropical Fresh Water Freeboard ... .. 4'-10 3/4"Fresh Water " " ... .. 5'-4 3/4"Tropical " " ... .. 5'-5 1/2"Winter " " ... .. 6'-5 1/2"Winter North Atlantic " " ... .. ✓

5'-11 1/2" 20 5'-11 1/4"

4'-10 3/4" 4'-10 3/4"

5'-4 3/4" 5'-4 3/4"

5'-5 1/2" 5'-5 1/2"

6'-5 1/2" 6'-4 3/4"

Foundation

1906 Freeboards



PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway		No 1 UPPER DK.	No 2 UPPER DK.	No 3 BRIDGE DK.	No 4 UPPER DK.	No 5 UPPER DK.	No 6 IN BRIDGE		
Dimensions of Hatchway		24' x 16'	36' x 16'	10' x 16'	36' x 16'	30' x 16'	12' x 16'		
COAMINGS	Height above Deck	30"	30"	30"	30"	30"			
	Thickness	.44	.54	.44	.54	.50			
	Sides	.40	.40	.40	.40	.40			
	Ends								
Stiffeners		2 OFF.	3 OFF.		3 OFF.	3 OFF.			
Brackets, Stays									
HATCH BEAMS	Number	4	6	1	6	5			
	Spacing	4'-9"	5'-1"	5'-0"	5'-1"	5'-0"			
	Scantling and Sketch	7" 3x4	7" 3x4	7" 3x4	7" 3x4	7" 3x4			
	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								
Bearing Surface									
HATCH COVERS	Material	W.P.	W.P.	W.P.	W.P.	W.P.			
	Thickness	3"	3"	3"	3"	3"			
	How fitted	FORE & AFT.	FORE & AFT.	FORE & AFT.	FORE & AFT.	FORE & AFT.			
	Bearing Surface	3"	3"	3"	3"	3"			
Spacing of Cleats		24"	24"	24"	24"	24"			
Number of Tarpaulins		3	3	3	3	3			

PARTICULARS COULD NOT BE OBTAINED OF THIS HATCH DUE TO COAL IN HATCH.

ALL IN GOOD CONDITION.

Locking trans fitted to No. 1 Hatchway at 26/1/42

YES & ONE LASHING TO EVERY SECTION OF COVERS.

\*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:—  
 STOWHOLD GRATINGS COVERED BY STRONG STEEL HINGED COVERS, ✓  
 FIDDLEY AND FUNNEL VENTILATORS IN EFFICIENT CONDITION ✓  
 ENGINE SKYLIGHT OF STEEL STRONGLY CONSTRUCTED. ✓

Particulars of Flush Bunker Scuttles:—

NONE FITTED. ✓

Particulars of Companionways :—

NONE FITTED

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

Particulars of Ventilators in exposed positions on freeboard and superstructure decks :-		Cowk Vents On Bridge Ok To Bridge Space	
Cowk Vent Forecastle Deck To Fore Peak.	18 x 9 x 6/20 2 OFF ✓	18 x 9 1/2 x 5/20	2 OFF ✓
- To Forecastle Tween Ok.	30 x 18 x 7/20 2 OFF ✓	- To Hold.	30 x 18 x 7/20 2 OFF ✓
- To Hold.	30 x 21 x 7/20 2 OFF ✓	Goose Neck Vent <sup>n</sup> To W.C In Poop On Poop Deck.	9 1/2 HIGH 5" DIA. 2 OFF ✓
Upper Deck Forward. To Hold.	36 x 18 x 8/20 2 OFF ✓	Cowk Vents To Poop Accom <sup>n</sup> On Poop Deck	30 x 10 x 6/20 2 OFF ✓
- 36 x 21 x 8/20	4 OFF ✓	- 24 x 9 x 5/20	2 OFF ✓
- RFT To Hold.	36 x 18 x 8/20 6 OFF ✓	- 18 x 6 x 5/20	2 OFF ✓
- Deep Tank	36 x 12 x 7/20 2 OFF ✓	- 30 x 8 x 5/20	1 OFF ✓
-		- 18 x 9 x 5/20	2 OFF ✓
-		- ON POOP OK To AFTER PEAK	17 x 6 x 5/20 1 OFF ✓
ALL VENTILATORS CONSTRUCTED IN ACCORDANCE WITH RULES AND COMINGS CLOSED WITH WOOD PLUGS AND CANVAS COVERS.		SPACE 17 x 6 x 5/20 1 OFF ✓	

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:—

GOOSE HECK TO FORE PEAK.	2 1/2" DIA. 12" HIGH FROM DECK TO MOUTH.	STARBOARD SIDE IN WATERWAY FORECASTLE ON P+S. UPPER FORE WELL.	✓
" " "	D.B.T. 2 1/2" DIA. 25" HIGH FROM DK TO MOUTH.	ON BULWARK. P+S. UPPER DK AFTER WELL.	✓
" " "	AFTER PEAK TANK 2 1/2" DIA. 15" HIGH FROM DK TO MOUTH IN WATERWAY	POOP DECK. P+S.	✓
" " "	<del>W.B. 2 1/2" DIA. 15" HIGH FROM DK TO MOUTH IN ALLEYWAY.</del>	<del>BRIDGE DECK. 2P+2S.</del>	✓
" " "	D.B.T. 2 1/2" DIA. 15" HIGH FROM DK TO MOUTH IN ALLEYWAY.	ON BRIDGE DECK P+S.	✓
" " "	FILLING PIPE TO D.B.T. 18" HIGH. 2 1/2" DIA. IN WATERWAY	ON BRIDGE DECK P+S.	✓
" " "	<del>ALL PIPES HAVE NO BREATHER HOLES IN TOP OF BEND. <del>DO NOT HAVE</del> THEY WOOD PLUGS OR CANVAS COVERS.</del>		

ALL SOUNDING PIPE TANKS FLUSH WITH D. FITTED WITH SCREEN PL.

*are provided*

Particulars of Gangway Cargo and Coaling Ports:—

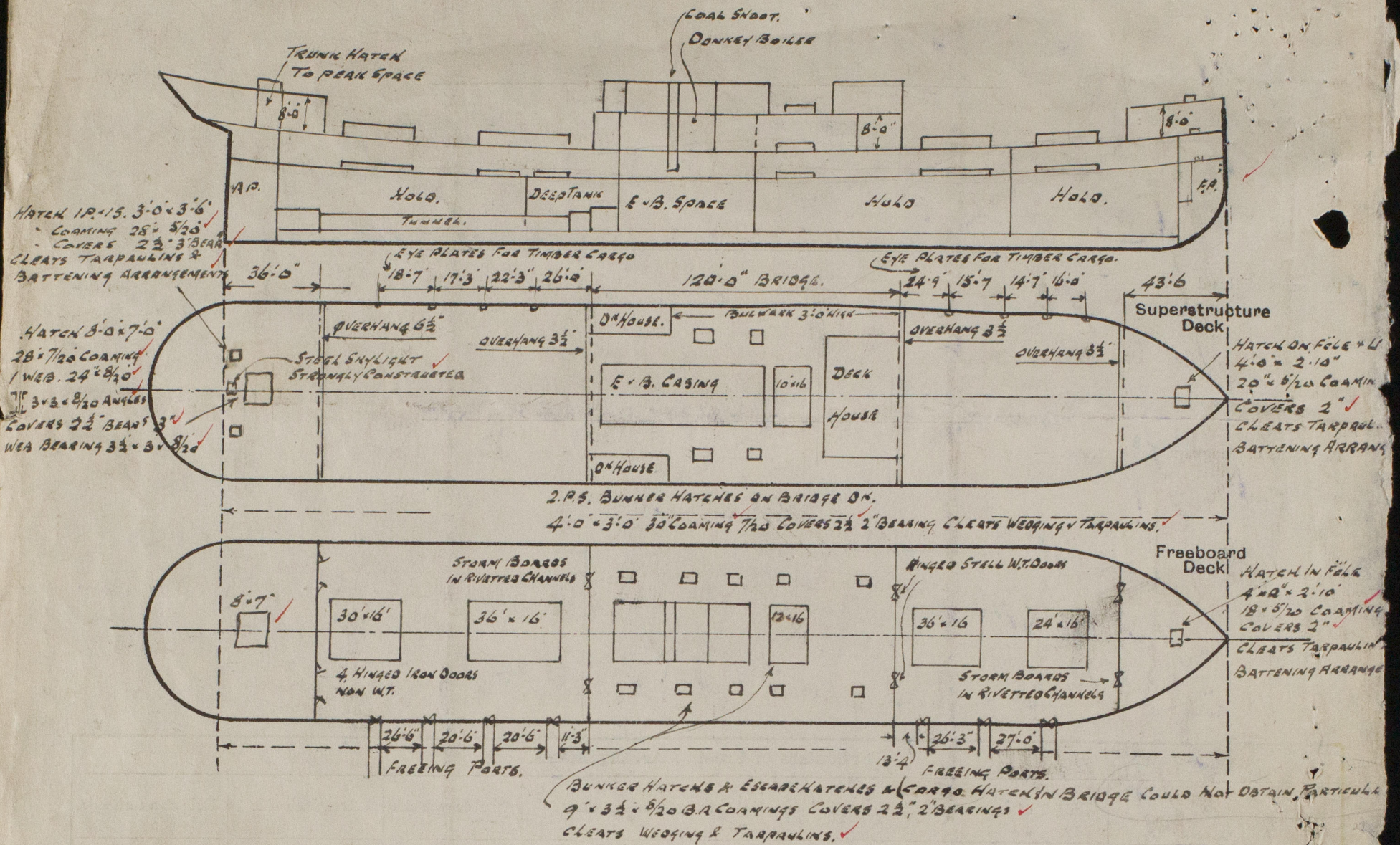
NONE FITTED



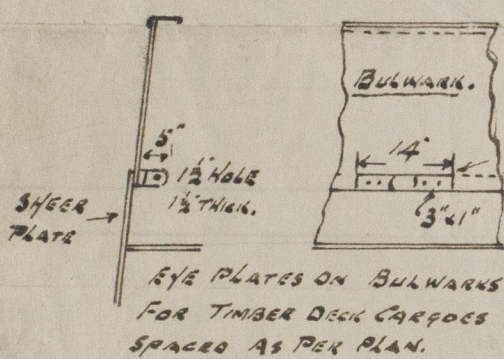
Particulars of Closing Appliances (state if capable of being manipulated from both sides).	
Poop Bulkhead ... ..	4 HINGED IRON DOORS OPENED FROM BOTH SIDES (NON W.T.) ✓
Raised Quarter Deck Bulkhead ...	(FULL HEIGHT STRUCK.)
Bridge, After Bulkhead ... ..	2 OPENINGS 5'-0" x 4'-0" 18" COAMINGS CLOSED BY STORM/BOARDS IN RIVETTED CHANNELS. OPENED FROM OUTSIDE ONLY
Bridge, Forward Bulkhead ... ..	2 OPENINGS 5'-0 1/2" x 8'-1" 18" COAMINGS CLOSED BY HINGED IRON DOORS WITH TIGHTER BOLTS 8" TO 12" APART. (W.T.)
Forecastle Bulkhead ... ..	2 OPENINGS 5'-0 1/2" x 4'-0" 18" COAMINGS CLOSED BY STORM BOARDS IN RIVETTED CHANNELS. FULL HEIGHT
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	✓
Exposed Machinery Casings on Super-structure Decks ... ..	3 OPENINGS 5'-0" x 2'-0" 18" COAMINGS CLOSED BY HINGED IRON DOORS CLOSED FROM BOTH SIDES. ✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ... ..	2 OPENINGS 5'-5" x 2'-0" 20" COAMINGS CLOSED BY HINGED IRON DOORS CLOSED FROM BOTH SIDES. 1 " 5'-0" x 5'-1" 20" COAMINGS CLOSED BY HINGED IRON DOORS CLOSED FROM BOTH SIDES. ON PORT SIDE DOOR ON STARBOARD SIDE MISSING.
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:—



#### PARTICULARS OF PROVISION FOR DECK CARGOES.

DECK CARGO LASHINGS 7/8" DIA CHAINS WITH STRETCHING SCREWS & SLIP HOOKS ON BOARD.

STEERING GEAR IN POOP; NO RODS ON DECK.

~~NO~~ SOCKETS FITTED ON DECK FOR UPRIGHTS. 10' apart Double bottom tank divided longitudinally for midship half length second means of steering by wire & pulleys provided Eye plates for lashings riveted to keel stake 10' apart. Eye plates adjoining bulkheads of superstructure 6' 6" from these bulkheads.

Builder's name and yard number *W. Hamilton & Co. No 305.*

Names of sister ships

Owners *Ben Line Steamers Ltd. (W. Hamilton & Co.)*

Fee £ *13* : *12* : Received by me *6/5/32*



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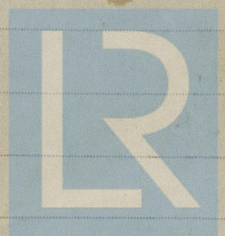
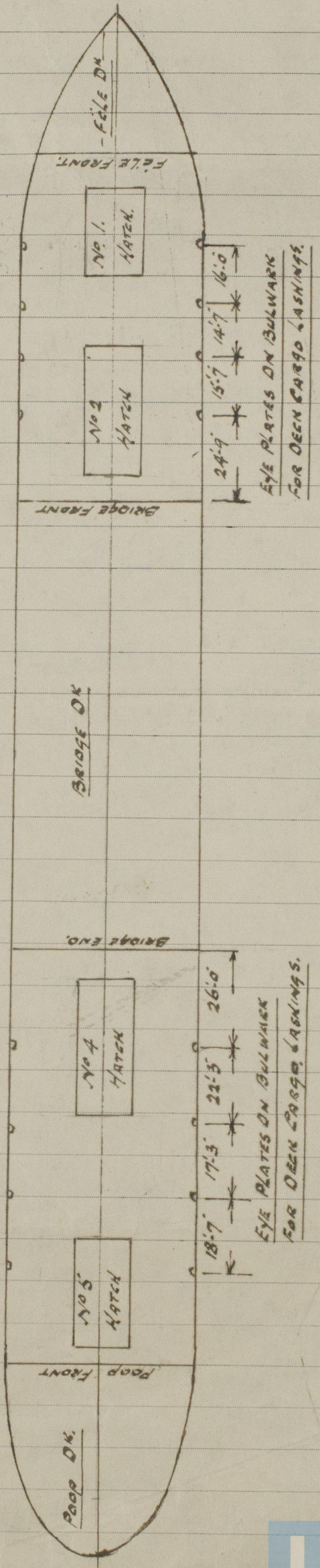
S/S. Bengloe

2 FEB 1932

Rpt. 9a.

Port of Middlebrough Continuation of Report No. 14562 dated Jan'y/32 on the

S/S. "BENGLOE."  
SKETCH SHOWING POSITION OF DECK CARGO LASHINGS.



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L1028-0010 3/3