

Rpt. C.11.

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WRECK RAY

No. 176-2

Index No. 30309
(For London Office only.)

Lloyd's Register of Shipping. SURVEYS FOR FREEBOARD.

15 APR 1932

GLASGOW REPORT No. 52330

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having: *Raised Quarter & Bridge & Side*

Port of Survey *Glasgow*

now *"AKELO"*

(Type of Superstructures.)

Date of Survey *14 April 1932*

Ship's Name
"THE EARL"

Nationality and Port of Registry
British NEWCASTLE

Official Number
144979

Gross Tonnage
643

Date of Build
1922

Name of Surveyor
N.L. Swinton

Moulded Dimensions: Length *174.75*

Breadth *28*

Depth *13.5*

Moulded displacement at moulded draught = 85 per cent. of moulded depth *1145* tons

Coefficient of fineness for use with Tables *.732*

Particulars of Classification *+100A1*

Depth for Freeboard (D)

Moulded depth ... *13.5*
Stringer plate ... *.03*
Sheathing on exposed deck
 $T \left(\frac{L-S}{L} \right) =$

Depth for Freeboard (D) = *13.53*

Depth correction

(a) Where D is greater than Table depth
(D-Table depth) R = $(13.53-11.65) \times 1.334$
+ 2.53
(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) *28*
Standard Round of Beam = $\frac{B \times 12}{50} = \frac{28 \times 12}{50} = 6.72
Ship's Round of Beam = *8.5*
Difference *1.78*
Restricted to
Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{1.78}{4} \times \left(1 - \frac{11.65}{174.75} \right) = .4475 \times .933 = .417$$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...					
" overhang ...					
R.Q.D. enclosed ...	<i>95.81</i>	<i>95.81</i>	<i>4.0</i>		<i>95.81</i>
" overhang ...					
Bridge enclosed ...	<i>11.00</i>	<i>11.00</i>	<i>7.6</i>		<i>11.00</i>
" overhang aft ...					
" overhang forward ...					
Fore enclosed ...	<i>25.83</i>	<i>25.83</i>	<i>7.25</i>		<i>25.83</i>
" overhang ...	<i>2.83</i>	<i>2.83</i>			<i>2.83</i>
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" " forward ...					
Total ...	<i>138.31</i>	<i>135.44</i>			<i>135.44</i>

Standard Height of Superstructure *6.0*
" " R.Q.D. *3.498*
Deduction for complete superstructure *23.44*
Percentage covered $\frac{S}{L} = \frac{138.31}{174.75} = 79.14\%$
" " $\frac{S_1}{L} = \frac{135.44}{174.75} = 77.52\%$
" " $\frac{E}{L} = \frac{135.44}{174.75} = 77.52\%$
Percentage from Table, Line A.
(corrected for absence of forecastle (if required))
Percentage from Table, Line B. *42.25%*
(corrected for absence of forecastle (if required))
Interpolation for bridge less than 2L (if required)
Deduction = *23.44* \times *.7225* = *-16.96*

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	<i>27.47</i>	1		<i>27.47</i>	<i>20.5</i>	<i>20.5</i>	1		<i>20.5</i>
$\frac{1}{2}$ L from A.P. ...	<i>12.23</i>	4		<i>48.88</i>	<i>13.5</i>	<i>13.5</i>	4		<i>54.00</i>
$\frac{2}{3}$ L " ...	<i>3.02</i>	2		<i>6.04</i>	<i>3.5</i>	<i>3.5</i>	2		<i>7.00</i>
Amidships ...		4					4		
$\frac{1}{2}$ L from F.P. ...	<i>6.04</i>	2		<i>12.08</i>	<i>5.5</i>	<i>5.5</i>	2		<i>11.00</i>
$\frac{1}{4}$ L " ...	<i>24.405</i>	4		<i>97.60</i>	<i>22.5</i>	<i>22.5</i>	4		<i>90.00</i>
F.P. ...	<i>54.95</i>	1		<i>54.95</i>	<i>51</i>	<i>51</i>	1		<i>51.00</i>
Total ...				<i>247.24</i>					<i>233.00</i>

Mean actual sheer aft = *11.00*
Mean standard sheer aft = *11.00*
Mean actual sheer forward = *11.00*
Mean standard sheer forward = *11.00*
Length of enclosed superstructure forward of amidships = *1*
" " aft of " = *1*
Sheer aft increased by virtue of sheer length of vessel
Superstructure
Actual height R.Q.D. *4.00*
Standard *3.498*
502

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{13.39}{18} \left(.75 - \frac{135.44}{2 \times 174.75} \right) = .74 \times .26 = .19$
If limited on account of midship superstructure.

Deduction for Tropical Freeboard.
Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = *17.53*
Summer freeboard = *4.46*
Moulded draught (d) = *13.07*

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = $\frac{13.07}{4} = 3.27$
Addition for Winter North Atlantic Freeboard (if required) = *2*

Deduction for Fresh Water.

Displacement in salt water at summer load water line
 $\Delta = 1260$
Tons per inch immersion at summer load water line
 $T = 9.75$
Deduction = $\frac{\Delta}{40T}$ inches
 $= \frac{1260}{40 \times 9.75} = 3.2$

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{.732 + .68}{1.36} = \frac{1.412}{1.36}$
Depth Correction ... *2.53*
Deduction for superstructures ... *16.96*
Sheer correction ... *26*
Round of Beam correction ... *.10*
Correction for Thickness of Deck amidships ...
Other corrections, scantlings, etc. ... *48.00*

Summer Freeboard = *33.44*

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

Tropical Fresh Water Line above Centre of Disc ...	<i>6.2</i>	Tropical Fresh Water Freeboard ...	<i>3.10</i>
Fresh Water Line " " ...	<i>3.2</i>	Fresh Water " " ...	<i>4.2</i>
Tropical Line " " ...	<i>3.4</i>	Tropical " " ...	<i>4.2</i>
Winter Line below " " ...	<i>3.2</i>	Winter " " ...	<i>4.2</i>
Winter North Atlantic Line " " ...	<i>3.2</i>	Winter North Atlantic " " ...	<i>4.2</i>

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PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway		N: 1.	N: 2.		RUNNER HATCH ON CASING TOP.	ESCAPE HATCH TO FORE HOLD.			
Dimensions of Hatchway		23'0" x 15'6"	25'8" x 15'6"		5'6" x 14'0"	1'3" x 1'9"			
COAMINGS	Height above Deck	33"	33"		15"	19"			
	Thickness { Sides	44"	44"		40"	34"			
	Thickness { Ends	44"	44"		40"	34"			
	Stiffeners	7 x 3 x 26	7 x 3 x 26		None	None			
	Brackets, Stays	2.	2.		None	None			
HATCH BEAMS	Number	5	4						
	Spacing	5'6"	5'12"						
	Scantling and Sketch	16 x 33	14 x 34						
		2 x 3 x 42	2 x 3 x 42		None	None			
	Bearing Surface	3"	3"						
FORE AND AFTERS	Number								
	Spacing								
	Unsupported Lengths								
	Scantling* and Sketch	None	None		None	None			
	Bearing Surface								
HATCH COVERS	Material	W.P.	W.P.		W.P.	W.P.			
	Thickness	2 1/2"	2 1/2"		2 1/2"	2 1/2"			
	How fitted	P.O.P.	P.O.P.		P.O.P.	P.O.P.			
	Bearing Surface	3 1/2"	3 1/2"		2 1/2"	2 1/2"			
Spacing of Cleats		26"	26"		26"	14"			
Number of Tarpaulins		2	2		2	2			
<p>*Are wood fore and afters steel shod at all bearing surfaces? None.</p> <p>Are battens and wedges efficient and in good condition? Yes.</p> <p>Are tarpaulins in good condition and in accordance with rule requirements? Yes.</p> <p>Are lashings provided in accordance with rule requirements? Ring bolts for lashings provided.</p>									

Particulars of fiddle, funnel and ventilator coamings:—

Storehold gratings covered by strong steel hinged covers.
 Fiddle funnel & ventilators in efficient condition.
 Engine skylight of steel strongly constructed.

Particulars of Flush Bunker Scuttles:—

None.

Particulars of Companionways:—

Entrance to officer's quarters in enclosed bridge from steel house on bridge deck.
 Doors 5'0" x 22" of teak 1 1/2", sill 12".
 Entrance to engineers quarters below raised quarter deck, from steel house at after end of Messy casings. Door 4'6" x 2'0" of teak 1 1/2", sill 12".
 Companion to fore peak store on hull deck under file 2'8" x 3'6" x 7'0" high. Steel door 4'6" x 22", sill 18".
 All doors manup. from both sides. Skylight on R.Q.D. of teak with steel coam. 18" x 30". Canvas cover & battening wright provided.

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

1	Cent. on file deck	to hold. 12 dia. Coam. 36" x 36"	Closed with steel covers.	all vents constructed in accordance with Rules.
4	to crew. 8	36" x 30"		
1	to store 6	36" x 30"		
1	on R.Q.D. to hold. 12	36" x 40"	Closed with wood plugs & canvas covers.	
1	to engine room. 8	36" x 32"		
2	on Bridge deck to officer. 6	30" x 20"		
2	on R.Q.D. to engine room. 6	6" x 26"	with covers down mushroom caps.	

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

1	on file deck to fore peak. 3" dia. x 10' high.	No snifting holes fitted. Air pipes provided with canvas covers.
1	fuel deck to D.B. 3" x 36"	
2	R.Q.D. 3" x 30"	
1	off. to aft peak. 2 1/2" x 20"	with snifting hole.

Particulars of Gangway Cargo and Coaling Ports:—

None.



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Lloyd's Register of Shipping.

Ship's Name AKELD

Official No. 144979

Memorandum of alterations reported since ship was surveyed for assignment of Load Lines
in APRIL, 1932.

Air pipe closing arrangements are now wood plugs with chain
attachments. (Nwc. May, 1937).

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W 472 - 0117(213)

balanced shutters

overhang - - - - -

Particulars of Scuppers and Sanitary Discharge Pipes —

- 1 sanitary discharge from house at after end of Mch. casing fitted with storm valve at ships side & trap at inner end. ✓
- 1 sanitary discharge from crews W.C. under file fitted with storm valve at ships side & trap at inner end. ✓
- Scuppers from upper & raised quarter dks. led thro' stringer bar. ✓

Particulars of Side Scuttles:

Side scuttles in file, bridge, & in engineers accommodation aft, fitted with hinged deadlights of substantial construction. ✓

Particulars of Guard Rails:—

Guard rails on file dk. 3'3" high 2 rods. Stanchions spaced 4'6" apart. ✓
Steel bulwark on bridge 2'9" high with 2" teak rail, efficiently constructed & supported. ✓
Bulwark, steel, on foreboard dk. 4'3" high & on R.P. dk. 5'0" high efficiently constructed & supported. ✓

Particulars of Gangways, Lifelines, etc.:—

Stanchions & lifelines fitted between Bridge & Side, top of hatchway forming platform. ✓ Stanchions (hinged) 3'0" high spaced 8'0" apart fitted in permanent sockets riveted to Bulb angle stiffener on hatch coaming. Lifeline 2" rope with lashings at each end. ✓

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	95.81'	2'0"	3'0" x 1'6" - 2'6" x 18" - 2'6" x 1'6"	1 } 5 x 44	19.5 7.5 sq ft.	19.16 ✓
Forward Well	36.75	4'3"	2'6" x 18"	3.	11.25	10.2 ✓
State position of each freeing port { After Well: 7'9" 17'6" 24'3" 39'6" 50'6" 60'6" 70'6" 80'6" 90'6" 100'6" 110'6" 120'6" 130'6" 140'6" 150'6" 160'6" 170'6" 180'6" 190'6" 200'6" 210'6" 220'6" 230'6" 240'6" 250'6" 260'6" 270'6" 280'6" 290'6" 300'6" 310'6" 320'6" 330'6" 340'6" 350'6" 360'6" 370'6" 380'6" 390'6" 400'6" 410'6" 420'6" 430'6" 440'6" 450'6" 460'6" 470'6" 480'6" 490'6" 500'6" 510'6" 520'6" 530'6" 540'6" 550'6" 560'6" 570'6" 580'6" 590'6" 600'6" 610'6" 620'6" 630'6" 640'6" 650'6" 660'6" 670'6" 680'6" 690'6" 700'6" 710'6" 720'6" 730'6" 740'6" 750'6" 760'6" 770'6" 780'6" 790'6" 800'6" 810'6" 820'6" 830'6" 840'6" 850'6" 860'6" 870'6" 880'6" 890'6" 900'6" 910'6" 920'6" 930'6" 940'6" 950'6" 960'6" 970'6" 980'6" 990'6" 1000'6"						
State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:—						
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
Poop Bulkhead								
Raised Quarter Deck Bulkhead		32 ✓	6 x 3 x 36 R.R.	26	Plts. T.O.B.	None	None	
Bridge, After Bulkhead								
Bridge, Forward Bulkhead	23 x 36 ✓	30 ✓	6 x 3 x 40 R.R.	30 ✓	Plts. T.O.B.	None	None	
Forecastle Bulkhead		26 ✓	3 x 3 x 26 ✓	30 ✓	None	4'6" x 1'10"	18 ✓	
Trunk, Aft								
Trunk, Forward								
Exposed Machinery Casings on Freeboard or Raised Quarter Deck	18 x 36 ✓	30 ✓	2 1/2 x 2 1/2 x 32 ✓	25 ✓	Plts. @ top	4'6" x 1'10"	18 ✓	6'6" ✓
Exposed Machinery Casings on Superstructure Decks								
Machinery Casings within Superstructures not fitted with Class I Closing Appliances								
Deckhouses on Flush Deck Ships								

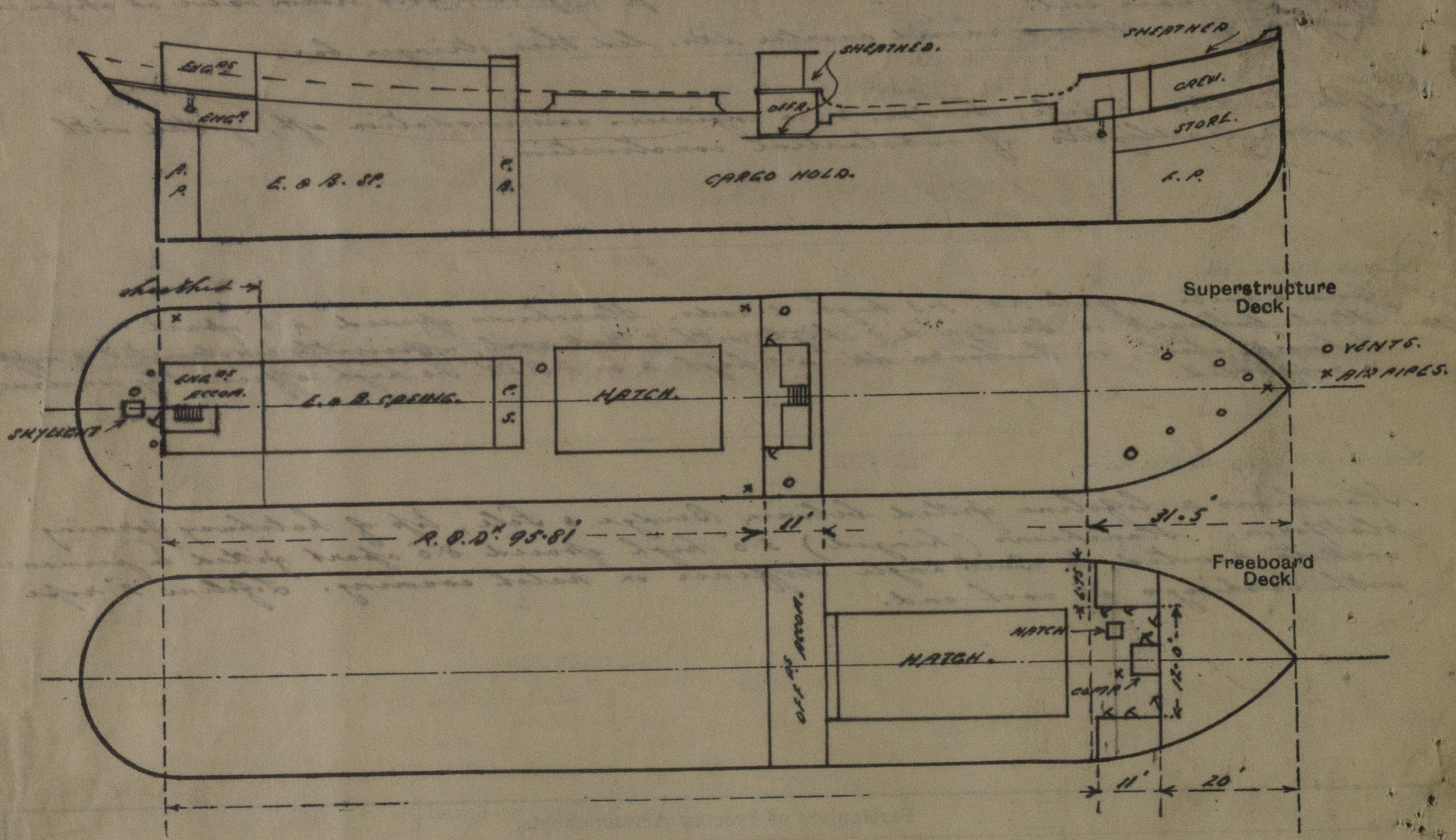
Particulars of Closing Appliances (state if capable of being manipulated from both sides).

Poop Bulkhead	
Raised Quarter Deck Bulkhead	no openings Scuttles fitted with hinged deadlights. ✓
Bridge, After Bulkhead	
Bridge, Forward Bulkhead	no openings. Scuttles fitted with hinged deadlights. ✓
Forecastle Bulkhead	Steel doors hinged. Manipulated from both sides. ✓
Exposed Machinery Casings on Freeboard or Raised Quarter Deck	Steel doors hinged. Manipulated from both sides. ✓
Exposed Machinery Casings on Superstructure Decks	
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	
Deckhouses on Flush Deck Ships	

W472-0117 (3/13)

Shell

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 shewn on the following sketches:—



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

This vessel is engaged in trading between British & Continental ports.
Timber freeboard not required.
Vessel undergoing bottom damage survey.

F.C.L.E.	L. M.L.O.	31.0	Small 31.5
Rev.	12.11	3.17	25.83
	23.5	25.83	215.67
			2.83

OMIT.

Builder's name and yard number *Garraw & Co. (1912) Ltd. No. 1470.*
 Names of sister ships *S. S. Esonite* *fls. Subl. Report No. 52267.*
 Owners *J. Hay & Sons. Ltd.*
 Fee £ *6* : *16* : *0* Received by me *OMIT*