

Lloyd's Register of Shipping.
SURVEYS FOR FREEBOARD.

Nº. 100057.

Computation of Freeboard for Steamer, Sailing Ship, Tanker					Port of Survey <u>Birkenhead</u>	
having <u>Painted Quarter Deck, Bridge House & Forecastle</u>					Date of Survey <u>March 8th 1932 & subsequently</u>	
(Type of Superstructures.)						
Ship's Name <u>HELIUM. Hollyleaf</u>	Nationality and Port of Registry <u>British Liverpool.</u>	Official Number <u>137548</u>	Gross Tonnage <u>301</u>	Date of Build <u>1917-5.</u>	Name of Surveyor <u>H. B. Murray</u>	
Moulded Dimensions: Length <u>135' 2"</u>		Breadth <u>23' 0"</u>	Depth <u>10' 5"</u>	Particulars of Classification <u>+100 A1.</u>		
Moulded displacement at moulded draught = 85 per cent. of moulded depth		<u>526</u> tons				
Coefficient of fineness for use with Tables		<u>.663</u>	<u>.68 lowest allowed</u>			
Depth for Freeboard (D)		Depth correction			Round of Beam correction	
Moulded depth <u>10' 6"</u>		(a) Where D is greater than Table depth			Moulded Breadth (B) <u>23' 0"</u>	
Stringer plate <u>.04</u>		(D - Table depth) R =			Standard Round of Beam = $\frac{B \times 12}{50}$ = <u>5.52</u>	
Sheathing on exposed deck <u>-</u>		<u>(10.54 - 9.01) 1.04 = +1.59</u> ✓			Ship's Round of Beam = <u>6"</u>	
T $\left(\frac{L-S}{L} \right) =$		(b) Where D is less than Table depth (if allowed)			Difference <u>.48</u>	
Depth for Freeboard (D) = <u>10.54</u> ✓		(Table depth - D) R =			Restricted to	
		If restricted by superstructures ✓			Correction = $\frac{\text{Diff}^*}{4} \times \left(1 - \frac{S_1}{L} \right)$ = <u>.48</u> × .4174 = <u>-.05</u>	

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...					
" overhang ...	50				
R.Q.D. <i>East side of Bridge</i>	49.50	49.50	3'6"	-	49.50
" overhang ...	92				
Bridge enclosed <i>House</i>	8'11"	8.92	7'0"	-	8.92
" overhang aft ...					
" overhang forward ...	18.94		6'7 1/2"		
F'cle enclosed <i>equiv</i>	17'4"	18.94	8'1"	-	18.94
" overhang ...	4'5"	1.40	6'7"		1.40
Trunk aft ...	2.81				
" forward ...					
Tonnage opening aft ...					
" forward ...					
Total ...	80.17	78.76			78.76

Standard Height of Superstructure 3.23

" " R.Q.D. 19.52

Deduction for complete superstructure

Percentage covered $\frac{S}{L} = 59.30\%$

" " $\frac{S_1}{L} = 58.26\%$

" " $\frac{E}{L} = 58.26\%$

Percentage from Table, Line A.
(corrected for absence of forecastle) 43.56%

Percentage from Table, Line B.
(corrected for absence of forecastle (if required))

Interpolation for bridge less than 2L (if required)

Deduction = $19.52 \times .4356 = 8.50$

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product	Mean actual sheer aft =	Mean standard sheer aft =
A.P. ...	23.52	1	23.52	20	21.0 24.24 23.52	1	23.52	Excess ✓	3.24 ✓
$\frac{1}{6}$ L from A.P. ...	10.47	4	41.88	7 1/2	9.48 10.70 10.47	4	41.88	Mean actual sheer forward = Deficient ✓	Mean standard sheer forward =
$\frac{2}{6}$ L " ...	2.59	2	5.18	1 1/4	2.37 2.54 2.59	2	5.18	Length of enclosed superstructure forward of amidships = ✓	
Amidships ...	-	4	-	-	- - -	4	-	" " aft of " = ✓	
$\frac{3}{6}$ L from F.P. ...	5.17	2	10.34	5 1/4	4.94 4.94 4.94	2	9.88		
$\frac{4}{6}$ L " ...	20.93	4	83.72	18 1/2	19.75 19.75 19.75	4	79.00		
F.P. ...	47.04	1	47.04	45	45.0 45.0 45.0	1	45.00		
Total ...			210.68 ✓				204.46 ✓		

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18}$$

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 = 10.54 Ft. ✓

Summer freeboard = .56 ✓

Moulded draught (d) = 9.98 ✓

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 2.50 = 2½ ✓

Addition for Winter North Atlantic Freeboard (if required) = 2" ✓

Deduction for Fresh Water.

Displacement in salt water at summer load water line Δ = 610 tons ✓

Tons per inch immersion at summer load water line T = 6.1 ✓

Deduction = $\frac{\Delta}{40 T}$ inches = $\frac{610}{40 \times 6.1} = 2.50 = 2½$ ✓

TABULAR FREEBOARD corrected for Flank Deck (if required)

Correction for coefficient ✓

	+	-
Depth Correction ...	1.59 ✓	-
Deduction for superstructures ...	-	8.50 ✓
Sheer correction18 ✓	-
Round of Beam correction ...	-	.05 ✓
Correction for Thickness of Deck amidships ...	-	-
Other corrections, scantlings, etc. ...	- ✓	- ✓
	1.77	8.55

Summer Freeboard = 6.84 ✓

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

SUMMER FREEBOARD amidships from Centre of Disc to top of beam									
28. June 1932	Tropical Fresh Water Line above Centre of Disc	5"	Tropical Fresh Water Freeboard	0'-1 1/4"	
Structure Deck	Fresh Water Line	"	"	2 1/2"	Fresh Water	"	...	0'-4 1/4"	
inery Casing	Tropical Line	"	"	2 1/2"	Tropical	"	...	0'-4 1/4"	
ures not fitted w	Winter Line	below	"	2 1/2"	Winter	"	...	0'-9 1/4"	
Appliances ...	Winter North Atlantic Line	"	"	4 1/2"	Winter North Atlantic	"	...	0'-11 1/4"	

Deckhouses on Flus

MAKING FORM

22 FEB 1937

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17 AUG 1932

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010890-010904-0048

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway			MAIN HATCH						
Dimensions of Hatchway			45'-6" x 13'-6"						
COAMINGS	{	Height above Deck ...	36"						
		Thickness { Sides ...	45"						
			Ends ...	45"					
		Stiffeners ...							
		Brackets, Stays ...							
HATCH BEAMS	{	Number ...	8						
		Spacing ...	5'-1"						
		Scantling and Sketch ...							
		Bearing Surface ...	4 1/2"						
FORE AND AFTERS	{	Number ...							
		Spacing ...							
		Unsupported Lengths ...							
		Scantling* and Sketch ...							
		Bearing Surface ...							
HATCH COVERS	{	Material ...	WP						
		Thickness ...	2 1/2"						
		How fitted ...	F&A						
		Bearing Surface ...	3"						
Spacing of Cleats			24"						
Number of Tarpaulins			2						
<p>*Are wood fore and afters steel shod at all bearing surfaces? <input checked="" type="checkbox"/></p> <p>Are battens and wedges efficient and in good condition? <input checked="" type="checkbox"/></p> <p>Are tarpaulins in good condition and in accordance with rule requirements? <input checked="" type="checkbox"/></p> <p>Are lashings provided in accordance with rule requirements? <input checked="" type="checkbox"/></p>									

Particulars of fiddley, funnel and ventilator coamings:— Fiddley, Funnel & ventilator coamings in efficient condition. ✓
 R & G galley skylights strongly constructed of wood with hinged wood flaps. ✓
 Fiddley gratings fitted with strong steel hinged covers. ✓
 Bunker Hatch 12'-3" x 8'-3" coaming 7 x 3 x 1/2" B.A. WP covers 2 1/2" thick fitted F&A. bearing 2". ✓
 Cleats spaced 5'-6" at sides and 3'-0" to 4'-0" at ends. No tarpaulins. ✓

Particulars of Flush Bunker Scuttles:—

Two scuttles on R & G Deck, Cast Iron, permanently fastened in place. ✓

Particulars of Companionways:—

✓

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

1 in Fore Well Starboard Side Forward 10" dia coaming 36" x 3/8" ✓ To Hood ✓
 1 in Fore Well Aft Midships 10" dia coaming 36" from deck x 3/8" thick To Hood ✓
 2 on Forecastle Deck 6" dia, coamings 24" high x 1/4" to cross accommodations. ✓
 Wood Plugs & Canvas Covers fitted. ✓

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

1- on Forecastle Deck. 3" dia 18" high from F Peak. ✓
 1- on Aft Peak Hatch 2" dia 20" high from AP Tank. ✓ } Wood plugs provided for closing

Particulars of Gangway Cargo and Coaling Ports:—

✓

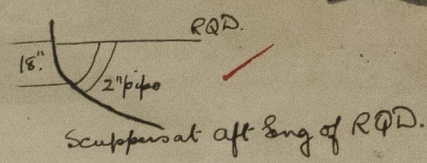
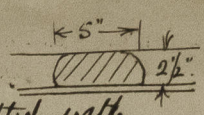


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Particulars of Scuppers and Sanitary Discharge Pipes :-

Sanitary discharge pipe from breast WC forward, fitted with storm valve above deck.
Sanitary discharge pipe from WC aft fitted with storm valve in E. Room.



Particulars of Side Scuttles :

None

Particulars of Guard Rails :-

Guard rails on Forecastle Deck 3'-0" high stanchions spaced 4'-4" apart. 2 rails.

Particulars of Gangways, Lifelines, etc. :-

The Crew are housed in the Forecastle, entering by a strong steel door.
Stanchions are fitted in sockets riveted to the hatch coaming and spaced 9'-0" and 3'-0" above hatch.
A wire is rigged with stretching screws and a step is fitted to enable the crew to step off the forward end of the Hatch.

Particulars of Freeing Arrangements.

	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
ROD. After Well	49'-50" 59'-6"	2'-11"	2'-0" x 1'-3" (2) 2'-0" x 1'-1" (3)	5	11-48 ϕ	11-45 ϕ
Forward Well	55'-03" 55'-10"	3'-5"	2'-9" x 1'-6"	3	12-375 ϕ	12-00 ϕ

State position of each freeing port } After Well: -
(F. and A. position and height above deck edge) } Forward Well: -
State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such.
Freeing ports in Forewell and Forward Port on ROD fitted with shutters having cleat fasteners. Other ports open with 1 rail. Sills 9".
Additional area where sheer is less than standard.

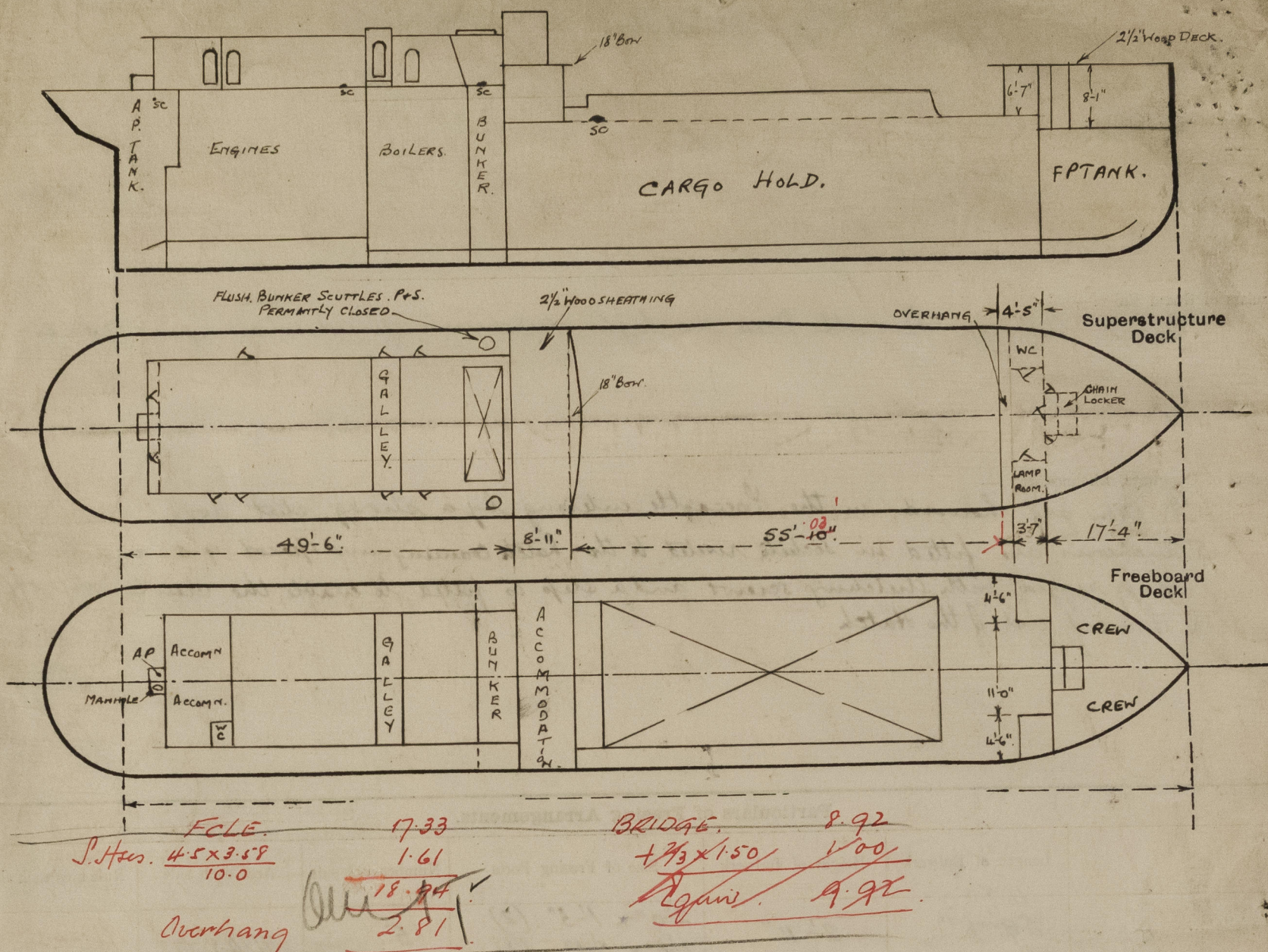
Particulars of Superstructures, Trunks, Casings, Deckhouses.

	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead	✓							3'-6"
Raised Quarter Deck Bulkhead ...								
Bridge, After Bulkhead	✓							
Bridge, Forward Bulkhead	30 ✓	24 ✓	3 1/2 x 2 1/2 x 36	2'-0"	Bkts top & bottom	✓		7'-0"
Forecastle Bulkhead	26 ✓	26 ✓	4 x 3 x 30 ✓	2'-0"	Bkts top & bottom	3'-10" x 21 1/2"	19"	6'-7 to 8'-1" to under side of head deck
Trunk, Aft	✓							
Trunk, Forward	✓							
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	30 ✓	26 ✓	3 x 2 1/2 x 30 ✓	3'-4" ✓	Bkts at top	3'-10" x 21 1/2" ✓	24" ✓	6'-6"
Exposed Machinery Casings on Superstructure Decks	✓							
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	✓							
Deckhouses on Flush Deck Ships ...	✓							

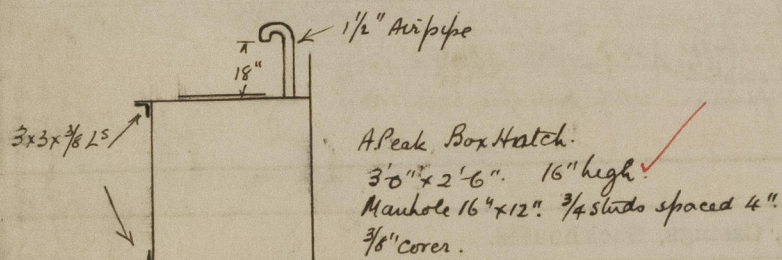
Particulars of Closing Appliances (state if capable of being manipulated from both sides).

Poop Bulkhead	✓
Raised Quarter Deck Bulkhead ...	✓ no openings
Bridge, After Bulkhead	✓ " "
Bridge, Forward Bulkhead	✓ " "
Forecastle Bulkhead	Strong steel hinged door Manipulated from both sides.
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	Strong steel hinged doors 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 ...	✓

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:—



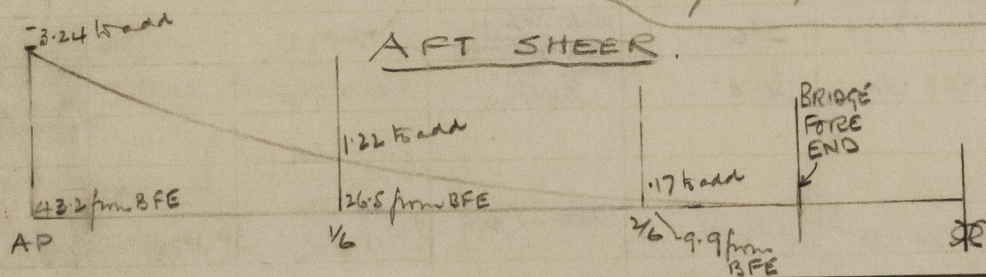
State any special features in the construction of the ship:—



$$.85' \times 10.5' = 8.92 = 8' - 11''$$

$$9' - 02''$$

$$\Delta \text{ from scale} = 529 = 526 \text{ mids}$$



Builder's name and yard number *Cochrane Sons Ltd Selby.*

Names of sister ships *Lothium*

Owners *United Alkali Co. Ltd. Ltd. (General Chemicals) Ltd.*

Fee £ *5* : *2* : *0*

Received by me *(Signature)*



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