

-7 APR 1932

Rpt. C.11.

Index No. **29782**
(For London Office only.)

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

No 100113.

Computation of Freeboard for Steamer, Sailing Ship, Tanker

Shelter deck with tonnage opening.

Port of Survey **Liverpool**

(Type of Superstructures.)

Date of Survey **April 1932**

Ship's Name

Nationality and Port of Registry

Official Number

Gross Tonnage

Date of Build

CARPIO**British
London****146158****1847****1921-8**Name of Surveyor **Alfred Skap.**Moulded Dimensions: Length **264.8**Breadth **41.0**Depth **21.0**Moulded displacement at moulded draught = 85 per cent. of moulded depth **4089** tonsCoefficient of fineness for use with Tables **.738**Particulars of Classification **100A1****Shelter deck
with freeboard.**

Depth for Freeboard (D)

Depth correction

Round of Beam correction

Moulded depth ... **21.0**(a) Where D is greater than Table depth
(D - Table depth) R =**(21.03 - 17.66) 2.036 + 6.86**Moulded Breadth (B) **41.0**Standard Round of Beam = $\frac{B \times 12}{50} = 98.4$ Ship's Round of Beam = **104.4**Difference **.41**

Sheathing on exposed deck

NIL(b) Where D is less than Table depth (if allowed)
(Table depth - D) R =

Restricted to

Correction = $\frac{\text{Diff}^2}{4} \times (1 - \frac{S_1}{L}) = \frac{.41^2}{4} \times .0076 = \text{NIL}$ Depth for Freeboard (D) = **21.03**If restricted by superstructures **✓**

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...	18.0	18.0	8.3	-	18.0
" overhang ...	NIL				
R.Q.D. enclosed ...					
" overhang ...					
Bridge enclosed ...					
" overhang aft ...					
" overhang forward ...					
WED RIDGE plate enclosed ...	242.8	242.8	8.3	-	242.8
" overhang ...	NIL				
Trunk aft ...					
forward ...					
Tonnage opening aft ...	4.0	2.0			2.0
forward ...					
Total ...	264.8	262.8			262.8

Standard Height of Superstructure **6.7**" " R.Q.D. **48**Deduction for complete superstructure **32.5**Percentage covered $\frac{S}{L} = 100\%$ " " $\frac{S_1}{L} = 99.24$ " " $\frac{E}{L} = 99.24$ Percentage from Table, Line A.
(corrected for absence of forecastle (if required))Percentage from Table, Line B. **99.06**
(corrected for absence of forecastle (if required))

Interpolation for bridge less than 2L (if required)

Deduction = **32.5** x **.9906** = **32.17**

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	36.48	1		36.48	25	24.0	1		49.25
1/4 L from A.P. ...	16.23	4		64.92	10	9.48	4		87.64
1/2 L " ...	4.01	2		8.02	3.25	2.37	2		10.84
Amidships ...	-	4		-	-	-	4		-
3/4 L from F.P. ...	8.03	2		16.06	5	4.84	2		19.08
1/4 L " ...	32.46	4		129.84	20	19.36	4		154.40
F.P. ...	72.96	1		72.96	48.25	48.5	1		86.75
Total ...				328.28		139.25			407.96

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{29.68}{18} (.75 - .50) = -1.11$

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 = **21.03**Summer freeboard = **.87**Moulded draught (d) = **20.16**

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = **5.04 = 5"**Addition for Winter North Atlantic Freeboard (if required) = **2"**

Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta = 4670$

Tons per inch immersion at summer load water line

T = **20.6**Deduction = $\frac{\Delta}{40 T}$ inches= **5.67 = 5 3/4"**

TABULAR FREEBOARD corrected for Fresh Deck (if required)

Correction for coefficient

 $\frac{738 + .68}{1.36} \times \frac{1.418}{1.36}$

+ -

Depth Correction ... **6.86**Deduction for superstructures ... **32.17**Sheer correction ... **1.11**

Round of Beam correction ...

Correction for Thickness of Deck amidships

Other corrections, scantlings, etc. ...

6.86 32.28 - 26.42Summer Freeboard = **10.50**

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

Tropical Fresh Water Line above Centre of Disc ...	10 3/4"	Tropical Fresh Water Freeboard ...	0' - 0 3/4"
Fresh Water Line " " ...	5 3/4"	Fresh Water " " ...	0' - 4 3/4"
Tropical Line " " ...	5"	Tropical " " ...	0' - 5 1/2"
Winter Line below " " ...	5"	Winter " " ...	1' - 3 1/2"
Winter North Atlantic Line " " ...	7"	Winter North Atlantic " " ...	1' - 5 1/2"

12 MAY 1932

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MARKING FORM

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Lloyd's Register
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002000-002012-0220 (1/2)

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS														
Description of Hatchway				FBD DK N°1	FBD DK N°2	FBD DK N°3	FBD DK N°4	SUPER ^S DK N°1				SUPER ^S DK N°2	SUPER ^S DK N°3	SUPER ^S DK N°4
Dimensions of Hatchway				24'-0"x14'	26'-0"x14'	21'-11½"x14'	20'-0"x14'	24'-0"x14'				26'-0"x14'	21'-11½"x14'	20'-0"x14'
COAMINGS	{	Height above Deck	...					30" AT SIDES				30"	30"	30"
		Thickness	{ Sides					36" AT CR				36"	36"	36"
		Stiffeners	{ Ends					.44"				.44"	.44"	.44"
		Brackets, Stays44"				.44"	.44"	.44"
				as N°1	as N°1	as N°1		7x3x.35				7x3x.35	7x3x.35	7x3x.35
HATCH BEAMS	{	Number	...	4	4	3	3	4				4	3	3
		Spacing	...	4'-10"	5'-2½"	5'-6"	5'-0"	4'-10"				5'-2½"	5'-6"	5'-0"
		Scantling and Sketch	...					WEBS 12x.30 AT CR 12x.30 AT SIDES						
		WEBS	12x.30 CR	2@A	2@A	2@A	2@A	2@X				2@X	2@X	2@X
		ANGLES	3x3x.4	2@B	2@B	1@B	1@B	2@Y				2@Y	1@Y	1@Y
		SIDES	10					6						
Bearing Surface				3"	3"	3"	3"	3"				3"	3"	3"
FORE AND AFTERS	{	Number	...	✓	✓	✓	✓	✓				✓	✓	✓
		Spacing	...											
Unsupported Lengths				...										
Scantling* and Sketch				...										
Bearing Surface				...										
HATCH COVERS	{	Material	...	PINE	PINE	PINE	PINE	PINE				PINE	PINE	PINE
		Thickness	...	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
		Bearing Surface	...	3"	3"	3"	3"	3"				3"	3"	3"
Spacing of Cleats				24"	24"	24"	24"	22"				22"	22"	22"
Number of Tarpaulins				3	3	3	3	3				3	3	3

*Are wood fore and afters steel shod at all bearing surfaces? none

Are battens and wedges efficient and in good condition? ye

Are tarpaulins in good condition and in accordance with rule requirements? ye

Are lashings provided in accordance with rule requirements? ye

Particulars of fiddley, funnel and ventilator coamings :—

Fidley gratings are covered by strong steel hinged covers.

Engine skylight is of steel strongly constructed. ✓

Hatch on casing top to coal shoot. 13'-6" x 4'-0" coaming 9" x 3" x 50 L 3" wood covers fitted fore and aft - 2 1/2" bearing surface - cleats spaced 24", battens and wedges efficient - 2 tarpaulins.

Particulars of Flush Bunker Scuttles:—

None.

Particulars of Companionways :—

Access to Crew Space in poop from Superstructure deck
Stairway inside Steel house (efficiently constructed) - see details on page 4. ✓

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

4 DERRICK POST VENTS ON SUPERSTRUCTURE DECK TO HOLD S.

4 VENTS ON SUPERSTRUCTURE DECK 24" DIA COAMINGS 36" x 40" TO HOLDS

WOOD PLUGS & CANVAS COVERS ARE ON BOARD FOR ALL COWL VENTS.

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

1 AIR PIPE ON SUPERSTRUCTURE DECK 3 1/2" DIA. CI ~~4~~ 4.21" HIGH LED TO FORE PEAK TANK

1 " " " " " 7 " " 12 " " " " " STORE

3 " " " " 4 1/2 " " # 4 1/2 21 " " " DOUBLE BOTTOM

2 3 4 21 21

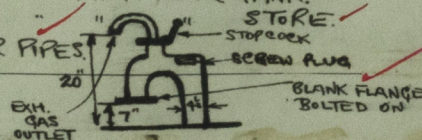
4 1/2 9 21 AFT. PEAK T

THERE ARE CANVAS NOSE-FACE MASKS FOR ALL ABOVE MENTIONED AIR BZ-8

THERE ARE CANVAS NOSE-BAGS ON BOARD FOR ALL ABOVE MENTIONED AIR PIPES.

10 AIR PIPES (SPSS) AS SKETCH - To D.B. TANKS (FOR OIL FUEL)

Particulars of Gangway Cargo and Coaling Ports :—



Home.

Particulars of Scuppers and Sanitary Discharge Pipes —

All Sanitary discharge pipes are fitted with storm valves.
Pipe scuppers on freeboard deck have storm valves at ship's side bolted plate at deck
led through shell about 12" below freeboard deck.
Pipe scuppers on superstructure deck (having no storm valves or bolted plate covers) are led
through shell about 12" below superstructure deck
for positions of all deck scuppers see sketch on page 4.

Particulars of Side Scuttles:

Side scuttles to crew spaces in poop are fitted with fixed deadlights
and are of substantial construction.
Scupper pipes & wash ports in shelter belt Tween Space are now permanently
closed. A 5" screw-down non-return valve fitted in lounge well
operated from shelter deck.

Particulars of Guard Rails:—

Rails on Superstructure deck 3'-6" high (3 rails) stanchions spaced 5'-0"

Particulars of Gangways, Lifelines, etc.:—

None

Bulwark around stern on Superstructure deck 3'-6" high

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 ...	4'-0"	✓	30" x 16"	1	3.33	✓
Forward Well ...			permanently closed			

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:— Hinged shutters ✓
16" sill ✓

Additional area where sheer is less than standard.

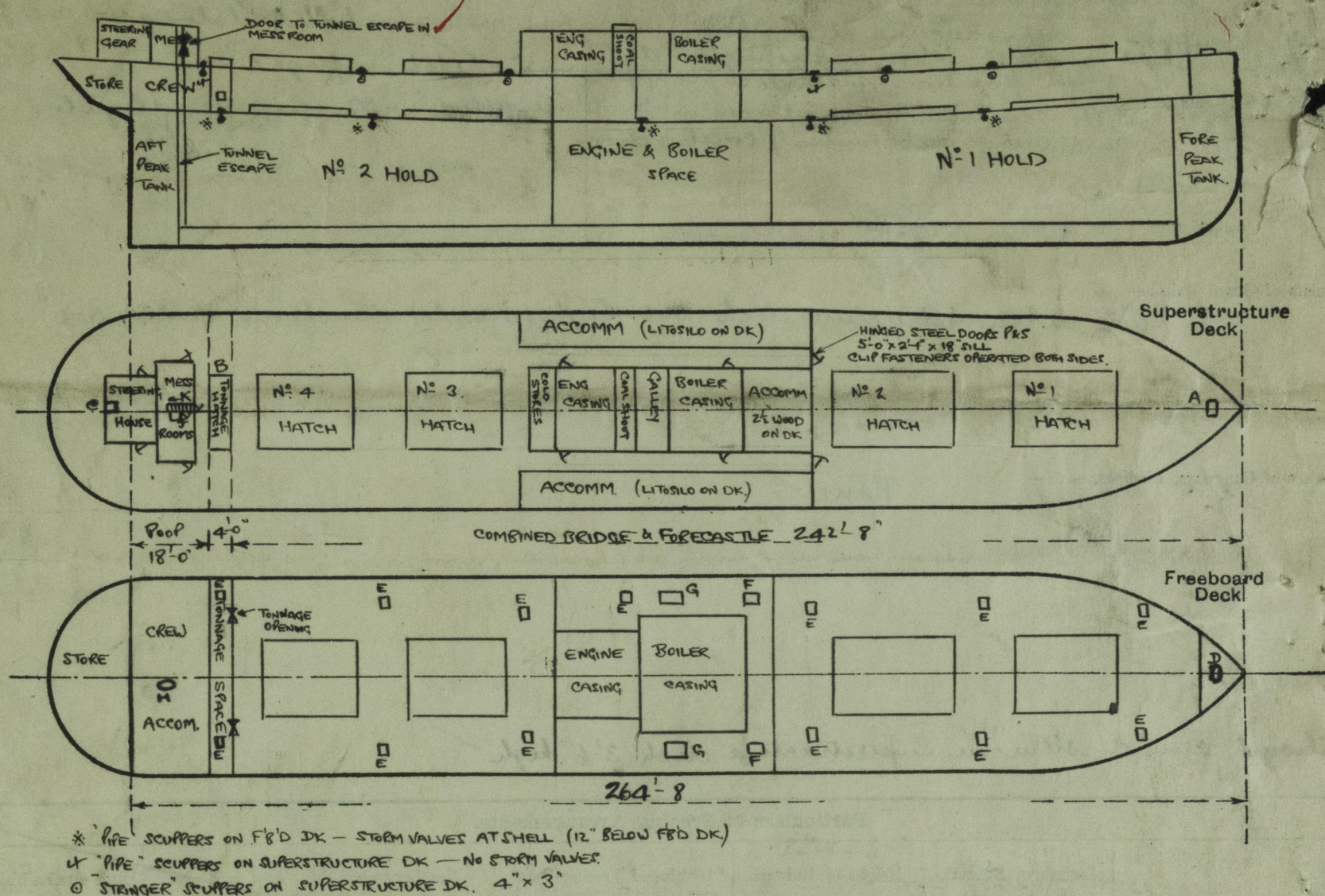
Particulars of Superstructures, Trunks, Casings, Deckhouses.

	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead ...	PLATED VERTICALLY	34 ✓	3 1/2 x 3 x 30L	36 ✓	NONE ✓	NONE ✓	NONE ✓	8'-3"
Raised Quarter Deck Bulkhead ...	PLATED VERTICALLY	30 ✓	3 1/2 x 3 x 30L	36 ✓	NONE ✓	2 @ 7'-7" x 2'-11" ✓	NONE ✓	8'-3"
Bridge, After Bulkhead ...								
Bridge, Forward Bulkhead ...								
Forecastle Bulkhead ...								
Trunk, Aft ...								
Trunk, Forward ...								
Exposed Machinery Casings on Freeboard or Raised Quarter Decks ...								
Exposed Machinery Casings on Superstructure Decks ...	34 ✓	25 ✓	3 1/2 x 3 x 30L	48 ✓	BRKTS TOP NONE BOTTOM ✓	2 @ 60" x 24" ✓ 2 @ 72" x 24" ✓	12" ✓	7'-6"
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ...	40 ✓	30 ✓	4 x 3 x 30L	48 ✓	BRKTS TOP NONE BOTTOM ✓	1 @ 66" x 48" ✓	18" ✓	8'-0" AFT 7'-10" & 8'-0" FWD
Deckhouses on Flush Deck Ships ...								

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

Poop Bulkhead ...	✓
Raised Quarter Deck Bulkhead ...	
Bridge, After Bulkhead ...	3" WOOD BOARDS IN RIVETED CHANNELS TO FULL HEIGHT (NO COAMING) ✓
Bridge, Forward Bulkhead ...	
Forecastle Bulkhead ...	
Exposed Machinery Casings on Freeboard or Raised Quarter Decks ...	
Exposed Machinery Casings on Superstructure Decks ...	4 HINGED STEEL DOORS CAPABLE OF BEING OPERATED BOTH SIDES. ✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ...	COAL SHOOT OPENINGS (66" x 48") NOT FITTED WITH 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 shewn on the following sketches:—



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

- A:— HATCH ON SUPERSTRUCTURE DK TO FORE PEAK STORE 2'-5" x 1'-10 1/2" COAMING 19" x 40" 2 1/2" WOOD COVERS 2 1/2" BEARING SURFACE. CLEATS SPACED 24" BATTENS & WEDGES EFFICIENT, 3 TARPULINS. ✓
- B:— TONNAGE HATCH ON SUPERSTRUCTURE DK. 14'-0" x 4'-0" 12 x 3 1/2" x .50 L COAMING. 2 1/2" WOOD COVERS FITTED F&A. 2 1/2" BEARING SURFACE. 3 TARPULINS (NO CLEATS OR WEDGES) TARPULINS BATTENED BY MEANS OF 2" FLAT BAR BOLTED & SCREWED UP AROUND HATCH COAMING. ✓
- C:— HATCH ON SUPERSTRUCTURE DK. TO AFT PEAK STORE. 2'-6" x 2'-0" COAMING 6" x 30" — HINGED STEEL COVER WITH CLAMP & PADLOCK. — THIS HATCH IS INSIDE STEERING HOUSE. (DOORS TO STEERING HOUSE P&S 5'-0" x 2'-0" WOOD HINGED DOORS 15" SILL OPERATED BOTH SIDES.) ✓
- D:— MANHOLE DOOR ON F&B'D DK. TO FORE PEAK TANK W.T. STEEL COVER 24" x 20" — BOLTS 4 1/2" CENTRES. ✓
- E:— 13 TRIMMING HATCHES (7 P. 6 S.) ON F&B'D DK. 2'-6" x 1'-10" COAMING 9 x 3 x .50 L W.T. HINGED STEEL COVERS — 4 HINGED BOLTS & BUTTERFLY NUTS. ✓
- F:— TRIMMING HATCH P&S. ON F&B'D DK. 3'-3" x 2'-6" COAMING 9" x 3" x .50 L 2 1/2" WOOD COVERS. 3" BEARING SURFACE. CLEATS SPACED 24" NO TARPULINS. ✓
- G:— TRIMMING HATCH P&S. ON F&B'D DK. 3'-6" x 2'-6" COAMING 9" x 3" x .50 L 2 1/2" WOOD COVERS 3" BEARING SURFACE. CLEATS SPACED 24" NO TARPULINS. ✓
- H:— MANHOLE DOOR ON F&B'D DK. TO AFT PEAK TANK W.T. STEEL COVER 24" x 20" — BOLTS 4 1/2" CENTRES. ✓
- J:— ACCESS TO TUNNEL ESCAPE IN MESS ROOM ON SUPERSTRUCTURE DK. HINGED STEEL DOOR TO TRUNK 5'-6" x 1'-10" x 14" SILL OPERATED FROM BOTH SIDES. ✓
- K:— COMPANION IN MESS ROOM ON SUPERSTRUCTURE DK DOWN TO CREW ACCOMM ON F&B'D DK. STRONG WOOD DOOR. 5'-0" x 24" x 16" SILL OPERATED BOTH SIDES. ✓

Builder's name and yard number *H. & C. Grayson Ltd. No 115*

Names of sister ships *'CHURRICA' & 'CID'*

Owners *Mac Andrews & Co. Ltd.*

Fee £ *9* : *7* : *0*

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