

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

11,361

Computation of Freeboard for *Motor Vessel*
having *Complete Superstructure with Large Opening aft*

Port of Survey *Belfast*Date of Survey *During construction*Name of Surveyor *J. E. Cook*Particulars of Classification *Class 100A1*
contemplated(Type of Superstructures.) *13041 (6/12/39)*

Ship's Name

"DORSET"

Nationality and Port of Registry

British
London

Official Number

163539

Gross Tonnage

10624
10892

Date of Build

*1934*Moulded Dimensions: Length *490* Breadth *68.33* Depth *38.67*Moulded displacement at moulded draught = 85 per cent. of moulded depth *23100* tonsCoefficient of fineness for use with Tables *735*

Depth for Freeboard (D)

Moulded depth ... *38.67*Stringer plate ... *04*

Sheathing on exposed deck

 $T \left(\frac{L-S}{L} \right) =$ Depth for Freeboard (D) = *38.72*

Depth correction

(a) Where D is greater than Table depth
(D-Table depth) R = $(38.72 - 32.67) 3.00$
= *+18.15"*(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) *68.33*Standard Round of Beam = $\frac{B \times 12}{50} =$ *16.40"*Ship's Round of Beam = *16"*Difference *0.40"*

Restricted to

Correction = $\frac{\text{Diff}^2}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.40^2}{4} \times .005 = \text{nil}$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...	<i>59.50</i>	<i>59.50</i>	<i>8'-6"</i>	<i>✓</i>	<i>59.50</i>
" overhang ...	<i>58</i>	<i>29</i>	<i>+2 1/2 sl.</i>		<i>29</i>
R.Q.D. enclosed ...					
" overhang ...					
Bridge enclosed ...					
" overhang aft ...	<i>424.83</i>	<i>424.83</i>	<i>8'-6"</i>	<i>✓</i>	<i>424.83</i>
" overhang forward ...			<i>+2 1/2 sl.</i>		
Plate enclosed ...					
" overhang ...	<i>59</i>	<i>44</i>			<i>44</i>
Trunk aft ...					
" forward ...					
Tonnage opening aft ...	<i>4.50</i>	<i>2.47</i>	<i>= 1/2 diff</i>		<i>2.47</i>
" " forward ...					
Total ...	<i>490.00</i>	<i>487.53</i>			<i>487.53</i>

Standard Height of Superstructure *7.50'*" " R.Q.D. *✓*Deduction for complete superstructure *42"*Percentage covered $\frac{S}{L} = 100\%$ " " $\frac{S_1}{L} = 99.50\%$ " " $\frac{E}{L} = 99.50\%$ Percentage from Table, Line A. *99.38%*
(corrected for absence of forecastle (if required))Percentage from Table, Line B. *✓*
(corrected for absence of forecastle (if required))Interpolation for bridge less than 2L (if required) *✓*Deduction = $42 \times .9938 = -41.74"$

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	<i>59.00</i>	<i>1</i>		<i>59.00</i>	<i>60.00</i>	<i>80.50</i>	<i>1</i>		<i>80.50</i>
1/4 L from A.P. ...	<i>26.25</i>	<i>4</i>		<i>105.00</i>	<i>29.25</i>	<i>35.82</i>	<i>4</i>		<i>143.28</i>
1/2 L " ...	<i>6.49</i>	<i>2</i>		<i>12.98</i>	<i>7.25</i>	<i>8.85</i>	<i>2</i>		<i>17.70</i>
Amidships ...	<i>✓</i>	<i>4</i>		<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>4</i>		<i>✓</i>
3/4 L from F.P. ...	<i>12.98</i>	<i>2</i>		<i>25.96</i>	<i>16.50</i>	<i>17.82</i>	<i>2</i>		<i>35.64</i>
" " ...	<i>52.51</i>	<i>4</i>		<i>210.04</i>	<i>66.50</i>	<i>72.09</i>	<i>4</i>		<i>288.36</i>
F.P. ...	<i>118.00</i>	<i>1</i>		<i>118.00</i>	<i>150.00</i>	<i>162.00</i>	<i>1</i>		<i>162.00</i>
Total ...				<i>530.98</i>	<i>+12.50</i>				<i>727.48</i>

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{75-S}{2L} \right) = \frac{196.50}{18} \times .25 = -2.73"$ If limited on account of midship superstructure. *✓*If limited to maximum allowance of 1 1/2 ins. per 100 ft. *✓*

Actual Ht. of Truss Deck = *8'-6"*
Standard " = *7'-6"*
Diff = *1'-0"*
+ 2 1/2" sl. aft = 14 1/2"

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = *38.89*Summer freeboard = *6.58*Moulded draught (d) = *32.31*

Correction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = *8.08 = 8"*Correction for Winter North Atlantic Freeboard (if required) = *✓*

Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta =$ *23135*

Tons per inch immersion at summer load water line

T = *69.65*Deduction = $\frac{\Delta}{40 T}$ inches= *8.30 = 8 1/4"*

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

 $\frac{.735 + .68}{1.36} = \frac{1.415}{1.360}$

Depth Correction ...

Deduction for superstructures ...

Sheer correction ...

Round of Beam correction ...

Correction for Thickness of Deck amidships ...

Other corrections, scantlings, etc. ...

	+	-
Depth Correction ...	<i>18.15</i>	<i>-</i>
Deduction for superstructures ...	<i>-</i>	<i>41.54</i>
Sheer correction ...	<i>-</i>	<i>2.73</i>
Round of Beam correction ...	<i>-</i>	<i>3</i>
Correction for Thickness of Deck amidships ...	<i>2.00</i>	<i>-</i>
Other corrections, scantlings, etc. ...	<i>-</i>	<i>-</i>
	<i>20.15</i>	<i>44.47</i>
Summer Freeboard =	<i>79.00</i>	<i>-</i>

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, *2" Comb on* *Wood, Steel, Deck:-*

Tropical Fresh Water Line above Centre of Disc ...	<i>16 1/4"</i>
Fresh Water Line " " ...	<i>8 1/4"</i>
Tropical Line " " ...	<i>8"</i>
Winter Line below " " ...	<i>8"</i>
Winter North Atlantic Line " " ...	<i>✓</i>

Tropical Fresh Water Freeboard ...	<i>6'-7"</i>
Fresh Water " " ...	<i>5'-2 3/4"</i>
Tropical " " ...	<i>5'-10 3/4"</i>
Winter " " ...	<i>5'-11"</i>
Winter North Atlantic " " ...	<i>7'-3"</i>

18 SEP 1934

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PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS														
← — Superstructure Deck — →					← — Freeboard Deck — →									
Description of Hatchway	...	...	...	N°1	N°2	N°3,4,5	N°6	Tonnage Opening	N°1	N°2	N°3,4,5	N°6
Dimensions of Hatchway	...	...	...	28'0" x 20'0"	39'1" x 20'0"	34'0" x 20'0"	19'10" x 20'0"	4'6" x 20'0"	28'0" x 20'0"	39'1" x 20'0"	34'0" x 20'0"	19'10" x 20'0"
COAMINGS	{	Height above Deck	...	30"	30"	30" above	30" above	7 x 3 1/2 x 40 b.a.	— — —	7 x 3 1/2 x 40 b.a.	— — —	— — —		
		Thickness	...	46"	46"	46"	46"						46"	46"
		Sides	...	46"	46"	46"	46"						46"	46"
		Ends	...	46"	46"	46"	46"						46"	46"
Stiffeners	...	7 x 3 x 40 ha	7 x 3 x 40 ha	7 x 3 x 40 ha	7 x 3 x 40 ha	✓	✓	✓	✓	✓	✓	✓		
Brackets, Stays	...	1 1/2 rounds spaced 6'0"	1 1/2 rounds spaced 5'8"	1 1/2 rounds spaced 5'8"	1 1/2 rounds spaced 5'8"	✓	✓	✓	✓	✓	✓	✓		
HATCH BEAMS	{	Number	...	4	6	5	3	✓	4	6	5	3		
		Spacing	...	6' 2 1/2"	6' 2 1/2"	6' 2 1/2"	5' 1"	✓	6' 2 1/2"	6' 2 1/2"	6' 2 1/2"	5' 1"		
		Scantling and Sketch	...	18 x 36 Angles 5 x 3 1/2 x 48	As N°1	16 1/2 x 34 Angles 4 x 3 x 44	13 1/2 x 34 Angles 4 x 3 x 44	✓	18 x 36 Angles 5 x 3 1/2 x 48 b.a. 5 x 3 x 44	As N°1	As N°1	18 x 36 Angles 4 x 3 x 44		
		Bearing Surface	...	3 1/2"	3 1/2"	3 1/2"	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	...		Oregon Pine			Efficient Temporary Covers	As on Superstructure Deck. Insulating plug hatches below					
		Thickness	...	3"										
		How fitted	...	In slabs framed in 3 x 3 x 30 angles & tied by 3 1/2 x 5 1/2 flats (blanks f.a.)										
		Bearing Surface	...	3"										
Spacing of Cleats	...	...	...	24"	24"	24"	24"		23"	23"	23"	23"
Number of Tarpaulins	...	...	...	3	3	3	3		1	1	1	1

*Are wood fore and afters steel shod at all bearing surfaces? ✓
Are battens and wedges efficient and in good condition? 2/5.
Are tarpaulins in good condition and in accordance with rule requirements? 2/5.
Are lashings provided in accordance with rule requirements? 2/5.

Particulars of fiddle, funnel and ventilator coamings:— All of steel, substantially constructed.
No open gratings!

Particulars of Flush Bunker Scuttles :—

Stone.

Particulars of Companionways:— Entrance to Stiller Tween decks in midship deckhouse, starboard side: deckhouse plating 32", stiffeners 4 x 3 x 30 L spaced 34". Opening 5'3" x 2'4". sill 19½" above steel dk. hinged hardwood door 2" thick, operated from both sides.
Entrance to Engine Room in after bulkhead of midship deckhouse: opening 5'0" x 2'6", sill 15½" above steel dk. hinged hardwood door 2" thick, operated from both sides.
Entrance to Apprentices accommodation in deckhouse between No. 5 & 6 hatches. Deckhouse 8'0" high. 28" plating. stiffeners 3 x 2½ x 30 spaced 30". Opening port = starboard 5'2" x 2'9". sill 18½" above steel deck. Hinged hardwood doors 2" thick, operated from both sides.
Entrance to Steering flat = tunnel escape in after bulkhead. Deckhouse 7'9" high. plating 28". stiffeners 3½ x 3½ x 36 L spaced 33". Opening 5'3" x 2'0". sills 18½" above steel deck. Hinged steel watertight doors, operated from both sides.
Entrance to tween decks in winch motor houses. Houses 5'0" high. plating 32". stiffeners 5 x 3 x 32 x 3 x 2½ x 30 L spaced 33". Opening 5'3" x 2'3". sills 18". Hinged steel watertight doors, operated from both sides.

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

Particulars of Ventilators in exposed positions on freeboard and superstructure decks:—			
One 12" Vent	to Fore Peak	Coaming	✓ 36" x 35"
Two 9" "	to wireless motor room		✓ 36" x 30"
Four 21" "	N° 1 Hold & tween dks.		✓ 36" x 40"
21" "	N° 2 "		✓ 36" x 40"
Two 21" "	N° 3 "		✓ 36" x 40"
Four 12" "	N° 3 tween dks		✓ 30" x 35"
Four 12" "	N° 4 "		✓ 30" x 35"
Eleven 9" "	Midship tween dk stowage re.		✓ 30" x 32"
Two 21" vents			✓ N° 4 hold & tween dks
Three 12" "			✓ N° 4 tween dks.
Two 21" "			✓ N° 5 hold & tween dks
Two 13" "			✓ apprentices accom ⁿ
Two 12" "			✓ N° 6 hold & tween dks
Five 9" "			✓ apprentices accom ⁿ
One 9" "			✓ N° 6 tween dks.
One 10" "			✓ apprentices accom ⁿ
		Coaming	✓ 30" x 40"
			✓ 30" x 35"
			✓ 30" x 40"
			✓ 30" x 34"
			✓ 30" x 34"
			✓ 30" x 32"
			✓ 30" x 32"
			✓ 30" x 32"

All ventilator coverings provided with wood plugs & canvas covers. ✓

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:—

4" fore peak air & filling	1 P. 15.	2" deep cofferdam air	1 P. 15.	} All these air pipes 30" high to opening. Remaining air pipes are led to positions high up masts & derrick posts. All air pipes fitted with wire gauges.
4" chain locker air	1 P. 15.	2" cofferdam air	1 P. 15.	
2" cofferdam air	1 P. 15.	4" feed tank air	1 P.	
4" No. 3 double bottom air & filling	1 P. 15.	4" feed tank air & filling	1 P.	
2" cofferdam air	1 P. 15.	4" aft peak air & filling	1 P. 15.	
4" No. 3 double bottom air & filling	1 P. 15.			

Particulars of Gangway Cargo and Coaling Ports :—

Cargo Doors:- Port side in Superstructure tween dks, between frames 88 + 91, 6'3" x 6'9" clear opening ✓
 3rd " " " " " " 88 + 91, 6'0" x 5'6" " ✓
 " " " " " " 95 + 96, 6'0" x 3'2½" " ✓

Mutton Ports: 4 port, 5 starboard, in upper tween dks. 2'3" x 1'10" clear opening ✓

All the above are of substantial construction, with strong hinged steel w.t. doors, secured by toggles & strongbacks, and have been hose tested with satisfactory results.

Particulars of Scuppers and Sanitary Discharge Pipes :—

All scuppers from spaces below freeboard deck and from enclosed spaces between Superstructure & freeboard decks led to bilges with trap & check valve at lower end.
All scuppers from spaces above freeboard deck not permanently enclosed led overboard through cast steel storm valves on ships side.
Sanitary discharges through ships side fitted with cast steel storm valves.

* Particulars of Side Scuttles :—

No side scuttles below Freeboard Deck.
Side scuttles in shelter tween decks aft, in apprentices accommodation, fitted with strong deadlights.

Particulars of Guard Rails :—

Guard Rails 3'8" high, 3 rails, stanchions spaced 4'6"
Bulwarks forward: 4'6" to 3'9" high .36 plating, rail 7"x3" bulb angle, stays 6"x3" b.a. spaced 4'6" to 6'0"
amidships: 3'9" high .36 plating, rail 7"x3" bulb angle, stays 6" bulb plate spaced 5'8"

Particulars of Gangways, Lifelines, etc. :—

- None. - /

Particulars of Freeing Arrangements.

	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
Tonnage After Well	5'8"		25" x 12½" (Circular ends)	One.		
Forward Well						
State position of each freeing port } After Well :— 12" above deck (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 steel shutters. 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 in shelter tween decks	.28	.28	4 x 3 x 30L	36	None	2 @ 5'6" x 2'6"	20"	
Raised Quarter Deck Bulkhead ...								
Bridge, After Bulkhead								
Bridge, Forward Bulkhead								
Forecastle Bulkhead in shelter tween decks	.28	.28	4 x 3 x 30L	36	None	2 @ 5'2" x 4'0"	17"	
Trunk, Aft								
Trunk, Forward								
Exposed Machinery Casings on Freeboard or Raised Quarter Decks ...								
Exposed Machinery Casings on Superstructure Decks								
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ... ..	.36	.36	4 x 3 x 36L	34	Btts top only	5'6" x 2'4"	11"	
Deckhouses on Flush Deck Ships ...								

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

Poop Bulkhead	Hinged steel watertight doors, operated from both sides.
Raised Quarter Deck Bulkhead ...	
Bridge, After Bulkhead	
Bridge, Forward Bulkhead	
Forecastle Bulkhead	
Exposed Machinery Casings on Freeboard or Raised Quarter Decks ...	Storm boards 3" thick, full height in riveted channels!
Exposed Machinery Casings on Superstructure Decks	
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	Hinged steel door, operated from both sides.
Deckhouses on Flush Deck Ships ...	



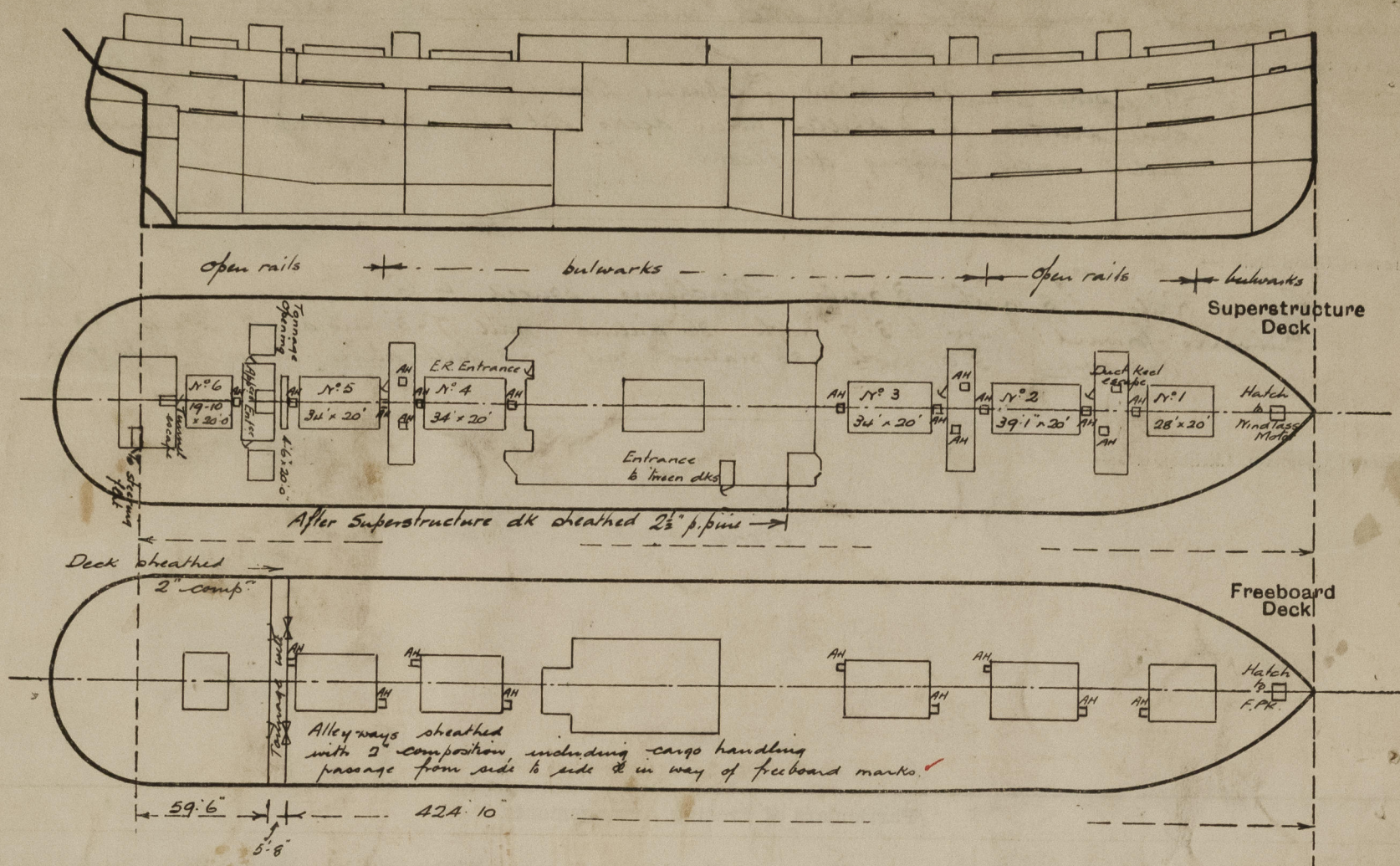
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Dorset

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:—



External Displacement at 31'-0" m.L.	21840 tons.	T.P.I. 69.1 tons.
" " 32'-0"	22690 "	69.5 "
" " 33'-0"	23510 "	69.8 "

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

Small Hatches on Superstructure Deck:

- Hatch to Windlass Motor Compt. 3'-2" x 2'-6" Coaming 30" high, 450 thick. Cover of steel jointed w.r. with rubber. Toggles spaced 22".
- Access Hatches, outside winch motor houses. Coamings 30" wide, 23" to 26" long, height 30" above deck. Thickness 45". Covers of steel w.r. jointed with rubber, butterfly toggles spaced 12" to 14".
- Access Hatches, inside winch motor houses.
- Duct Keel escape: Coaming 24" x 26" x 5" high above litoids. 6 x 3 built angle. Cover of steel w.r. rubber jointed 4 toggles.
- Access hatches to insulated spaces in shelter tween decks: Coaming 6 x 3 built angle. In forward winch house 16" x 25", remainder 24" x 26". 5" high above litoids. Covers steel, w.r. rubber jointed 4 toggles. Insulated plug fitted below steel covers.

Small Hatches on Freeboard Deck:

- Hatch to Fore peak: 3'-7" x 2'-6" Coaming 3 x 3 x 30 angle. Wood cover 3" thick, 2 1/2" rest. One tarpaulin & efficient battening arrangements.
- Access Hatches to upper Tween Decks: Coaming 2'-6" x 3'-3". 9 x 3 x 32 built angles. Rest bars 3". w.r. covers 3" thick, cleats spaced 26". 1 tarpaulin & battens. Insulated plug fitted below.

Builder's name and yard number Workman Clark (1928) Ltd. N° 534

Names of sister ships "Durham" (Workman Clark's N° 533)

Owners Federal Steam Navigation Co. Ltd.

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