

Rpt. C.11.

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, ~~Sailing Ship, Tanker~~
having Poop, Bridge & Forecastle.

Port of Survey Newcastle

Date of Survey 1 June 1932

Name of Surveyor J. Howden

Particulars of Classification 100A1

SWANRIVER (Type of Superstructures.)
Ship's Name " DUNELMIA
Nationality and Port of Registry British West Hartlepool
Official Number 160763
Gross Tonnage 5273 5207
Date of Build 16.9.29 10 mo.

Moulded Dimensions: Length 421.00 Breadth 54.04 Depth 30.08
Moulded displacement at moulded draught = 85 per cent. of moulded depth 12,700 tons
Coefficient of fineness for use with Tables .764

Depth for Freeboard (D)		Depth correction		Round of Beam correction	
Moulded depth	30.08	(a) Where D is greater than Table depth (D-Table depth) R = (30.11 - 28.07) 3 = 6.12"		Moulded Breadth (B)	54.04
Stringer plate	.03	(b) Where D is less than Table depth (if allowed) (Table depth-D) R = ✓		Standard Round of Beam = $\frac{B \times 12}{50}$	= 12.97
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$		If restricted by superstructures ✓		Ship's Round of Beam	= 13.50
Depth for Freeboard (D) =	30.11			Difference	.53
				Restricted to	
				Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right)$	= $\frac{.53}{4} \times .2575 = -.03$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed	29.75	29.75	7.5		29.75
" overhang					
R.Q.D. enclosed					
" overhang					
Bridge enclosed	240.16	240.16	7.5		240.16
" overhang aft					
" overhang forward					
Forecastle enclosed	42.83	42.45	7.5		42.45
" overhang		.19			.19
Trunk aft					
" forward					
Tonnage opening aft					
" forward					
Total	312.74	312.55			312.55

Standard Height of Superstructure 7.5
" " R.Q.D. ✓
Deduction for complete superstructure 42.00
Percentage covered $\frac{S}{L} = 74.29\%$
" $\frac{S_1}{L} = 74.25\%$
" $\frac{E}{L} = 74.25\%$
Percentage from Table, Line A.
(corrected for absence of forecastle (if required))
Percentage from Table, Line B.
(corrected for absence of forecastle (if required)) 68.23%
Interpolation for bridge less than .2L (if required)
Deduction = $42.00 \times .6823 = -28.65$

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	52.10	1		52.10	51.0	51.0	1		51.00
1/4 L from A.P.	23.18	4		92.72	22.5	22.5	4		90.00
1/2 L	5.73	2		11.46	5.5	5.50	2		11.00
Amidships	-	4		-	-	-	4		-
3/4 L from F.P.	11.46	2		22.92	12.0	12.0	2		24.00
3/4 L	46.36	4		185.44	46.0	46.0	4		184.00
F.P.	104.20	1		104.20	105.0	105.0	1		105.00
Total				468.84					465.00

Mean actual sheer aft = Deficient 97.25%
Mean standard sheer aft
Mean actual sheer forward = Excess
Mean standard sheer forward
Length of enclosed superstructure forward of amidships = .307
" " aft of " = .263

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{3.84}{18} \left(.75 - \frac{.3714}{2} \right) = +.08$
If limited on account of midship superstructure.

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

Depth to Freeboard Deck = 30.11 Ft.
Summer freeboard = 5.04
Moulded draught (d) = 25.07

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = $6.27 = 6\frac{1}{4}$
Addition for Winter North Atlantic Freeboard (if required) =

Deduction for Fresh Water.

Displacement in salt water at summer load water line
 $\Delta = 12542$
Tons per inch immersion at summer load water line
 $T = 45.87$
Deduction = $\frac{\Delta}{40T}$ inches = $6.84 = 6\frac{3}{4}$

TABULAR FREEBOARD corrected for Flush Deck (if required)
Correction for coefficient $\frac{.764 + .68}{1.36} = \frac{1.444}{1.36}$

	+	-
Depth Correction	6.12	-
Deduction for superstructures	-	28.65
Sheer correction	.08	-
Round of Beam correction	-	.03
Correction for Thickness of Deck amidships	-	-
Other corrections, scantlings, etc.	-	-
	6.20	28.68
Summer Freeboard =	6	

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck			
Tropical Fresh Water Line above Centre of Disc	330 mm 13"	Tropical Fresh Water Freeboard	3'-11 1/2"
Fresh Water Line	171 mm 6 3/4"	Fresh Water	4'-5 3/4"
Tropical Line	159 mm 6 1/4"	Tropical	4'-6 1/4"
Winter Line below	259 mm 10 1/4"	Winter	5'-5 3/4"
Winter North Atlantic Line		Winter North Atlantic	

JUN 1932

RECEIVED 99 JUN 1932
RECEIVED 15 NOV 1932

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS													
UPPER DECK.							BRIDGE DECK				P.O.P.	P.O.P.	VD
Description of Hatchway	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 2	No. 3	No. 4	No. 7	A.P. STORE	F.P. STORE	
Dimensions of Hatchway	29'3" x 20'	30'4" x 20'	19'4" x 20'	30'4" x 20'	30'4" x 20'	18'8" x 20'	30'4" x 20'	21' x 20'	30'4" x 20'	10' x 10'	4' x 3'	3'6" x 3'	
COAMINGS	Height above Deck	38"	9"	9"	9"	31"	31"	31"	31"	31"	12"	3"	
	Thickness	44	3 1/2	3 1/2	3 1/2	59	44	44	44	44	X	X	
	Stiffeners	7 x 3 x 40 BA	40	40 BA	40 BA	7 x 3 x 40 BA	7 x 3 BA	7 x 3 BA	7 x 3 BA	7 x 3 BA	3 1/2	3	
	Brackets, Stays	2 off 2 1/2" DIA	BA	✓	✓	2 off 2 1/2" DIA	2 off 2 1/2" DIA	2 off 2 1/2" DIA	2 off 2 1/2" DIA	2 off 2 1/2" DIA	BA	L	
HATCH BEAMS	Number	Five	Five	Three	Five	Five	Three	Five	Three	Five	one		
	Spacing	4-10'	5-0 1/2'	4'-10"	5-0 1/2'	5-0 1/2'	4-8"	5-0 1/2'	5-3"	5-0 1/2'	5'		
	Scantling and Sketch	18 x 35 Angles 4 x 3 x 40 BA 7 x 3 x 50	18 x 34 Angles 4 x 3 x 40 BA 7 x 3 x 50	Plate 18 x 34 Angles 4 x 3 x 40 1 Bullhead 2 x 4 x 3 x 40	Plate 18 x 34 Angles 4 x 3 x 40 Bull Angle 7 x 3 x 50	Plate 18 x 36 Angles 4 x 3 x 40 Bull Angle 7 x 3 x 50	Plate 17 x 35 Angles 4 x 3 x 40 Bull Angle 7 x 3 x 50	Plate 13 x 34 Angles 4 x 3 x 40 Bull Angle 7 x 3 x 50	2 beams 1 Bullhead Plate 13 x 33 Angles 4 x 3 x 40	Plate 13 x 34 Angle 9 x 30	Plate 9 x 30 Angle		
	Bearing Surface	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"		
FORE AND AFTERS	Number	NONE						2 Bunker Hatches, each side, on Bridge Deck.					
	Spacing							7' x 3' with 31" x 44" coaming.					
	Unsupported Lengths							Covers WP 2 3/4" Bear 3" Cleats 24" Tarpaun 3/4 Batten wedges efficient					
	Scantling and Sketch												
HATCH COVERS	Number		1 Bunker Hatch, each side, in upper Deck										
	Spacing		9' x 3' x 9" B.A. Coaming and										
	How fitted		1 Bunker Hatch, each side, in upper Deck										
	Bearing Surface		2'4" x 3' x 9" B.A. Coaming. Covers WP 2 3/4" Bear 3" Cleats 30" Tarpaun 3/4										
HATCH COVERS	Material	WP.	WP	WP	WP	WP	WP	WP	WP	WP	WP	WP	
	Thickness	2 3/4	2 3/4	2 3/4	2 3/4	2 3/4	2 3/4	2 3/4	2 3/4	2 3/4	2 3/4	2 1/2	
	How fitted	F.A.	F.A.	F.A.	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"	3"	3"	3"	
Spacing of Cleats		24"	36"	36"	36"	24"	24"	24"	24"	24"	36"	36"	
Number of Tarpaulins		3	3	3	3	3	3	3	3	3	3	3	
<p>*Are wood fore and afters steel shod at all bearing surfaces? <i>yes</i></p> <p>Are battens and wedges efficient and in good condition? <i>yes</i></p> <p>Are tarpaulins in good condition and in accordance with rule requirements? <i>yes</i></p> <p>Are lashings provided in accordance with rule requirements? <i>yes</i></p> <p><i>Locking bars fitted to No. 1 Hatchway at St. 17/3/42</i></p> <p><i>Hatch beams on U.D. above top angles of beam have one BA and one OA fitted at bottom - 2 off 4 x 3 angles at top. Other hatch beams have 4 off 4 x 3 angles</i></p>													

Particulars of fiddle, funnel and ventilator coamings:—

Fidley openings, closed with steel hinged covers.
Engine Room skylight is of steel with hinged flaps.
Fidley funnel and ventilator coamings in good order.

Particulars of Flush Bunker Scuttles:—

none

Particulars of Companionways:—

none

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

4 Ventilators on Forecastle 18" diam Coamings 34' x 34' to crew quarters 2 GN 3" DIAM HEIGHT 10" to WES in F.C.
1 Ventilator " " 15" " " 34' x 34' to Cargo Hold.
5 Ventilators " Bridge 18" " " 30' x 34' to Holds & Tween Decks & Bunkers.
4 " " " 15" " " 30' x 34' to Holds.
2 " " " 5" " " 30' x 34' to Close Room under Bridge 18".
1 " " Poop 10" " " 30' x 34' to Tunnel.
1 " " Upper Deck 15" " " 36' x 38' to Hold.

All ventilators are in accordance with the rules and wood plugs & canvas covers are fitted

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

No air pipes in wells
Forecastle deck One off 3" diam 10" hgt HEIGHT 15" to F.P. Tank
Bridge deck One off 10" to hgt 16" HEIGHT 3 1/2" to hgt 11" high 2 1/2" diam to dt tank
Poop deck One off 3" diam 11" hgt 16" height to A.P. Tank

Are pipes have open ends Satisfactory means of closing provided

Particulars of Gangway Cargo and Coaling Ports:—

none

FIDLEY TOP HATCH

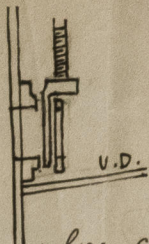
19'6" x 5'6"
8"
3 1/2"
BA Coam
Covers 3" WP
F.A.
Bear 3"
Cleats 24"
Battens wedges
Tarpaulins efficient

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Particulars of Scuppers and Sanitary Discharge Pipes —



2 Scuppers each side, in Bridge space, at upper deck level, closed with sluice valves controlled from bridge deck. Efficiently protected.
Scuppers in wells are through stinger angles on bridge dk led just below bridge dk & have open ends.
All sanitary discharge pipes are led overboard above the freeboard deck & have storm valves, C.I.

Particulars of Side Scuttles:

4 Side Scuttles, each side, 30° below forecastle deck, with hinged deadlights.
Two " in poop space fitted with hinged deadlights.

Particulars of Guard Rails:—

Fore & Poop Decks. 3'-2" high, 2 Rods, Stanchions spaced 4 to 5 ft apart.
Bridge Deck. 3'-2" 2 " " " 4 to 5 ft
" " Steel bullwarks 120' feet long abreast houses, with 2 freeing ports each side 6' x .68,
Wells " " 6 1/2 x 3 x 40 B.A. Rail 7" B.P. Stays spaced 5.5 ft apart.

Particulars of Gangways, Lifelines, etc.:—

None

Efficient lifelines fitted in forward and after well on port & starb. sides

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	70.0'	4' 3"	5.5 x .68	4	14.96 $\frac{1}{4}$	14.0 $\frac{1}{4}$
Forward Well	38.26'	4' 2"	5.04 x .68	3	10.30 $\frac{1}{4}$	10.32 $\frac{1}{4}$

State position of each freeing port } After Well:— From Bridge B.Hd. 8' : 25' : 42' : 60'
(F. and A. position and height above deck edge) } Forward Well:— From Bridge B.Hd. 8' : 19' : 30'
State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— none. Ht above deck edge 13"

Additional area where sheer is less than standard.

Particulars of Superstructures, Trunks, Casings, Deckhouses.

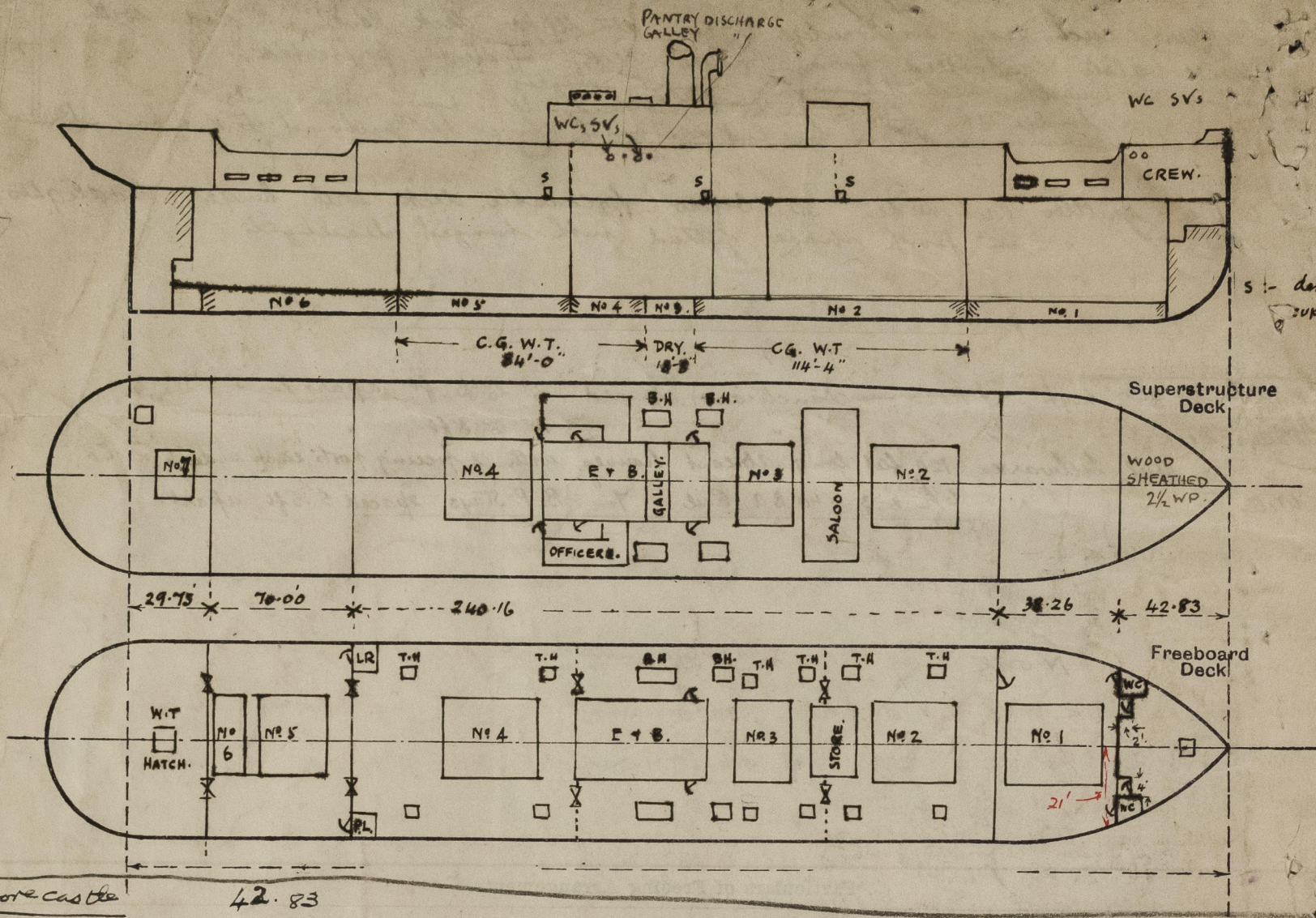
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead ... ..	.46	.40	6 x 3 x 42 L	30"	Lugged T+B	2.0 ft 5-0 x 3-1	1'-10"	7'-6"
Raised Quarter Deck Bulkhead ...		✓			✓			
Bridge, After Bulkhead ... ..	.32	.32	4 x 3 x 38 L	30"	Alternates Bkts T+B	2.0 ft 5-0 x 3-1	18"	7'-6"
Bridge, Forward Bulkhead ... ..	.48	.44	9 x 3 1/2 x 54 BA	30"	BKTS T LUGGED B	1.0 ft 4-4 1/2 x 2-10 1/4	22"	7'-6"
Forecastle Bulkhead ... ..	.28	.28	3 x 3 x 34	30"	None	4.0 ft 4'-6" x 2'-0"	18"	7'-6"
Trunk, Aft		✓			✓			
Trunk, Forward		✓			✓			
Exposed Machinery Casings on Freeboard or Raised Quarter Decks ...		✓			✓			
Exposed Machinery Casings on Superstructure Decks ... ..	.42	.36	3 x 3 x 34	32	None	4.0 ft 5'-0" x 2'-0"	19"	7'-6"
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ... ..	.38	.32	3 x 3 x 34	32	Lugged top only	4.0 ft 5'-0" x 1'-9"	18"	7'-6"
Deckhouses on Flush Deck Ships ...		✓			✓			

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

Poop Bulkhead	2 Openings, closed with storm boards full height in riveted channels.
Raised Quarter Deck Bulkhead ...	✓
Bridge, After Bulkhead	2 Openings, closed with stormboards full height in riveted channels.
Bridge, Forward Bulkhead	1 Hinged steel watertight door. ^{capable of being operated from both sides} secured by hooked bolts not passing through bulkhead.
Forecastle Bulkhead	Four ordinary steel hinged doors operated both sides.
Exposed Machinery Casings on Freeboard or Raised Quarter Decks ...	Four
Exposed Machinery Casings on Superstructure Decks	Four steel hinged doors operated both sides.
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	Four steel hinged doors operated both sides.

Dukeholmia

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:—



Fore-castle 42.83
 Recess. $\frac{4 \times 2}{21} = \frac{.38}{42.45}$

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

There are no special features.

For provisional assignment under convention regulations please see Secretary's letter M. 21st September 1931.

Tonnage deck cargo assignment not required.

The following particulars have been provided by the Builders:—

Extreme displacement & tons per inch immersion @ 25ft. Draught... 12400 Tons & 45.81
" " " " @ 26ft. " 12945 " & 46.03

Summer moulded Keel 25.07
25.19
25.26

$\Delta = \frac{12400}{142} = 12542$

45.87

Builder's name and yard number *Messrs Wm Gray & Co Ltd. Yard No 1028.*

Names of sister ships *3/s "Heronpool" 3/s "Haxby" 3/s "Swiftpool"*

Owners *Notcalf, Son & Co Ltd*

Fee £ *13* : *12* : — Received by me



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