

Lloyd's Register of Shipping.
SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker				Port of Survey	Barry
having	POOP	TRUNK	and Forecastle (open)	Date of Survey	25-4-32
(Type of Superstructures.)			Gross Tonnage	Name of Surveyor	
Ship's Name			Nationality and Port of Official Number	J. Buchanan	
AGNES DUNCAN			British Russian 132868	2514	1912-7
Moulded Dimensions: Length			Depth	Particulars of Classification	
305' 306'			22' 6 25'	+ 100A1	
Breadth			72 1/2	Round of Beam correction	
43'			5516		
Moulded displacement at moulded draught = 85 per cent. of moulded depth					
Coefficient of fineness for use with Tables					
.763					

Coefficient of fineness for use with Tables		Depth correction		Round of Beam correction	
Depth for Freeboard (D)				Moulded Breadth (B)	
Moulded depth	... .. 22.625 ✓	(a) Where D is greater than Table depth (D - Table depth) R =		Standard Round of Beam = $\frac{B \times 12}{50} =$	
Stringer plate	... 9.1" 0.75 ✓	(22.70 - 20.40) 2.354 = + 5.41 ✓		Ship's Round of Beam = $\frac{10.32}{50} =$	
Sheathing on exposed deck		(b) Where D is less than Table depth (if allowed) (Table depth - D) R =		Difference = $\frac{10.50}{50} =$	
T $\left(\frac{L-S}{L}\right) =$				Restricted to	
Depth for Freeboard (D) =	22.700 ✓	If restricted by superstructures		Correction = $\frac{\text{Diff}^{\circ}}{4} \times \left(1 - \frac{S_1}{L}\right) = \frac{.18}{4} \times \left(1 - \frac{.6587}{34.13}\right) = -.03$	

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...	71.0	71.00 ✓	7.46	✓	71.00 ✓
" overhang ...	—	—	—	—	—
R.Q.D. enclosed ...	—	—	—	—	—
" overhang ...	—	—	—	—	—
Bridge enclosed ...	—	—	—	—	—
" overhang aft ...	—	—	—	—	—
" overhang forward ...	—	—	—	—	—
1 st cle enclosed open ...	36.25	33.42 ✓	7.46	✓	33.42
" overhang ...	—	—	—	—	—
Trunk aft to ... 198.33	—	—	9.40	—	—
" forward ...	—	—	—	—	—
Tonnage opening aft ...	—	—	—	—	—
" forward ...	—	—	—	—	—
Total ...	107.25	104.42 ✓	—	—	104.42

CUTURES.

Standard Height of Superstructure 6.56 ✓

" " R.Q.D. 35.73 ✓

Deduction for complete superstructure 35.73 ✓

Percentage covered $\frac{S}{L} = 35.05\%$ ✓

" " $\frac{S_1}{L} = 34.13\%$ ✓

" " $\frac{E}{L} = 34.13\%$ ✓

Percentage from Table, Line A. 18.51 % ✓
(corrected for absence of forecastle (if required)) ✓

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

Interpolation for bridge less than $\cdot 2L$ (if required) no bridge

Deduction = $35.73 \times .1851 = -6.61$ ✓

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P. ...	40.60 ✓	1	40.60	48.00 ✓	48.00	1	48.00
$\frac{1}{6}$ L from A.P. ...	18.07	4	72.28	20.94 ✓	20.94	4	83.76
$\frac{2}{6}$ L " ...	4.47	2	8.94	5.23 ✓	5.23	2	10.46
Amidships ...	✓	4	✓		✓	4	✓
$\frac{3}{6}$ L from F.P. ...	8.93	2	17.86	10.47 ✓	10.47	2	20.94
$\frac{4}{6}$ L " ...	36.13	4	144.52	41.87 ✓	41.87	4	167.48
F.P. ...	81.20	1	81.20	96.00 ✓	96.00	1	96.00
Total ...			365.40				426.64

$$\frac{\text{Mean actual sheer aft}}{\text{Mean standard sheer aft}} = \text{Excess}$$
$$\frac{\text{Mean actual sheer forward}}{\text{Mean standard sheer forward}} = \text{Excess}$$

$\frac{\text{Length of enclosed superstructure}}{L}$ forward of amidships = } no bridge
aft of " = }

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{8}{2L} \right) = \frac{61.24}{18} \times (75 - .1752) = -1.96$$

If limited on account of midship superstructure.

If limited to maximum allowance of $1\frac{1}{2}$ ins. per 100 ft.

<p>Deduction for Tropical Freeboard.</p> <p>Addition for Winter and Winter North Atlantic Freeboard.</p>	<p>Deduction for Fresh Water.</p> <p>Displacement in salt water at summer load water line</p> <p>Δ = 5413</p> <p>Tons per inch immersion at summer load water line</p> <p>T = 26.62</p> <p>Deduction = $\frac{\Delta}{40T}$ inches</p> <p>= 5.08</p> <p>= 5"</p>	<p>TABULAR FREEBOARD corrected for Fresh Deck (if required)</p> <p>Correction for coefficient $\frac{.763 + .68}{1.36} = \frac{1.443}{1.36}$</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th></th> <th style="text-align: center;">+</th> <th style="text-align: center;">-</th> </tr> <tr> <td>Depth Correction</td> <td style="text-align: center;">5.41</td> <td style="text-align: center;">✓</td> </tr> <tr> <td>Deduction for superstructures</td> <td style="text-align: center;">✓</td> <td style="text-align: center;">6.61</td> </tr> <tr> <td>Sheer correction</td> <td style="text-align: center;">✓</td> <td style="text-align: center;">✓</td> </tr> <tr> <td>Round of Beam correction</td> <td style="text-align: center;">✓</td> <td style="text-align: center;">.03</td> </tr> <tr> <td>Correction for Thickness of Deck amidships</td> <td style="text-align: center;">✓</td> <td style="text-align: center;">✓</td> </tr> <tr> <td>Other corrections, scantlings, etc.</td> <td style="text-align: center;">✓</td> <td style="text-align: center;">✓</td> </tr> <tr> <td></td> <td style="text-align: center;">5.41</td> <td style="text-align: center;">6.64</td> </tr> <tr> <td></td> <td colspan="2" style="text-align: right;">- 1.23</td> </tr> <tr> <td></td> <td colspan="2" style="text-align: right;">Summer Freeboard = 46.41</td> </tr> </table>		+	-	Depth Correction	5.41	✓	Deduction for superstructures	✓	6.61	Sheer correction	✓	✓	Round of Beam correction	✓	.03	Correction for Thickness of Deck amidships	✓	✓	Other corrections, scantlings, etc.	✓	✓		5.41	6.64		- 1.23			Summer Freeboard = 46.41	
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44.90
47.64

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

Tropical Fresh Water Line	above	Centre of Disc	...	...
Fresh Water Line	"	"	...	...
Tropical Line	"	"	...	...
Winter Line	below	"	...	...
Winter North Atlantic Line	"	"	...	...

Tropical Fresh Water Freeboard	..
Fresh Water	" ..
Tropical	" ..
Winter	" ..
Winter North Atlantic	" ..

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

TRUNK TOP HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway		No 1.	No 2.	No 3	No 4	BUNKER.			
Dimensions of Hatchway		38'-3" x 33'-2 1/2"	40'-6" x 33'	40'-6" x 33'	40'-6" x 33'	6' x 20'			
COAMINGS	Height above Deck ...	6" ✓	6" ✓	18" ✓	18" ✓	12" ✓			
	Thickness ...	.60 ✓	.60 ✓	.60 ✓	.56 ✓	.30 ✓			
	Stiffeners ...	.50 ✓	.50 ✓	.50 ✓	.50 ✓	.30 ✓			
	Brackets, Stays ...	8 x 3 x 40 ✓	8 x 3 x 40 ✓	8 x 3 x 40 ✓	8 x 3 x 40 ✓	✓			
		40" flanged	brackets about 11" spacing						
HATCH BEAMS	Number ...	3 ✓	3	3	3	none			
	Spacing ...	9'-6 3/4" ✓	10'-1 1/2"	10'-1 1/2"	10'-1 1/2"	—			
	Scantling and Sketch	5 x 3 1/2 x 46 ✓	5 x 3 1/2 x 48 ✓	5 x 3 1/2 x 46 ✓	5 x 3 1/2 x 48 ✓	—			
		42" x 50 ✓	42" x 46 ✓	49" x 44 ✓	49" x 50 ✓	—			
	Bearing Surface	10" x 50 ✓	10" x 50 ✓	10" x 50 ✓	10" x 50 ✓	—			
FORE AND AFTERS	Number ...	5	5	5	5	3			
	Spacing ...	5'-6" ✓	5'-6"	5'-6"	5'-6"	5'-0"			
	Unsupported Lengths	9'-2	9'-6	9'-6	9'-6	5'-8			
	Scantling* and Sketch	10" x 8 ✓	10" x 8 ✓	10" x 8 ✓	11" x 8 ✓	9" x 8 ✓			
	Bearing Surface	←	2 1/2" to 3" ✓	→	2 1/2" to 3" ✓	→			
HATCH COVERS	Material ...	←	wood ✓	→	→	→			
	Thickness ...	←	3" ✓	→	→	→			
	How fitted	←	athwartship ✓	→	→	→			
	Bearing Surface	←	2 1/2" to 3" ✓	→	→	→			
Spacing of Cleats		24" ✓	24" ✓	24" ✓	24" ✓	24" ✓			
Number of Tarpaulins		3 ✓	3 ✓	3 ✓	3 ✓	2 ✓			

*Are wood fore and afters steel shod at all bearing surfaces? yes ✓

Are battens and wedges efficient and in good condition? yes ✓

Are tarpaulins in good condition and in accordance with rule requirements? yes ✓

Are lashings provided in accordance with rule requirements? yes - double sets, athwartship + fore & aft. ✓

Particulars of fiddley, funnel and ventilator coamings :—

E.H. skylight - strongly constructed of steel, with steel hinged flaps & bull-eyes. ✓
 Tidley top gratings - have metal hinged flaps, strongly constructed & permanently attached ✓
 Vent coamings. E.H. - 2 @ 18" dia - 3 1/2" high .35" thick, 2 @ 18" dia, 2 1/2" high .20 thick ✓
 " " B.H. - 2 @ 14" dia - 12" " .40" thick c.i., 2 @ 27" dia, 40" high & .32" ✓

Particulars of Flush Bunker Scuttles:—

None. ✓

Particulars of Companionways :—

On foreboard deck forward, under foil deck, leading down to crews quarters, strongly constructed of steel 6'x4'-6" with opening closed by a 12" teak wood door, capable of being operated from both sides, height of sill 16 1/2" above wood sheathing (3 1/2" thick) ✓

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

On Trunk Top -	8 @ 18" dia x 36" - 12"	above trunk top leading to Hold & Bunkers	with wood plugs & covers	✓
On Fore Deck -	1 @ 18" dia x 36" - 12"	fore dk	has Hold	✓
	2 @ 8" dia x 30" - 12"	} to Crews accommodation		✓
	2 @ 8" dia x 30" - 12"			✓
	1 @ 8" dia x 26" - 12"		to fore peak space	✓

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

On foile DK - 1 @ 3" dia. wrot iron - 102" above fore deck - to fore peak tank. ✓
On fore' DK - 4/105 @ 2 1/2" dia wrot iron - opening 22" above deck - will saw an necks
and smifting holes at top of bend - to double bottom. ✓
On poop DK - 1 @ 3" dia - to A.P. tank - flush with deck & has screwed cover. ✓
Two pipes have wood plugs for ^{and canvas covers} the openings. ✓

Particulars of Gangway Cargo and Coaling Ports :—

None.

Particulars of Scuppers and Sanitary Discharge Pipes —

4 (pts) 4" - w.c. discharge pipe from poop econⁿ - yellow metal with storm valve - also flap valve at inner end.

Particulars of Side Scuttles:

Side scuttles in crew's quarters below freeboard of substantial construction & have deadlights permanently attached. ✓

side scuttles in poop accom^{ny} an of substantial construction with portable deadlights.

Particulars of Guard Rails :—

Guard rails on side DK, 3'-3" high with 3 rods & stanchions spaced 4' apart. ✓
Bulwark on poop deck - 3'-4" high - with bulk plate (7") stanchions 6'-6" apart ✓
Bulwark on foreboard deck - 5' high of steel efficiently constructed & supported. ✓

Particulars of Gangways, Lifelines, etc.:—

Two rows of stanchions (1p & 1S) fitted in riveted sockets with steel wire complete length of well. Height of wire above trunk tops 4'-0"

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 <i>Pop Co. Pöble</i>	<i>198. ⁷⁵33</i>	<i>5'-0"</i>	<i>2.42 x 1.58 2'-7" x 1'-7"</i>	<i>5 5</i>	<i>19.12 sq ft 39 ³/₄</i>	<i>39.8 ⁷⁵sq ft</i>
Forward Well	✓	✓	✓	✓	✓	✓

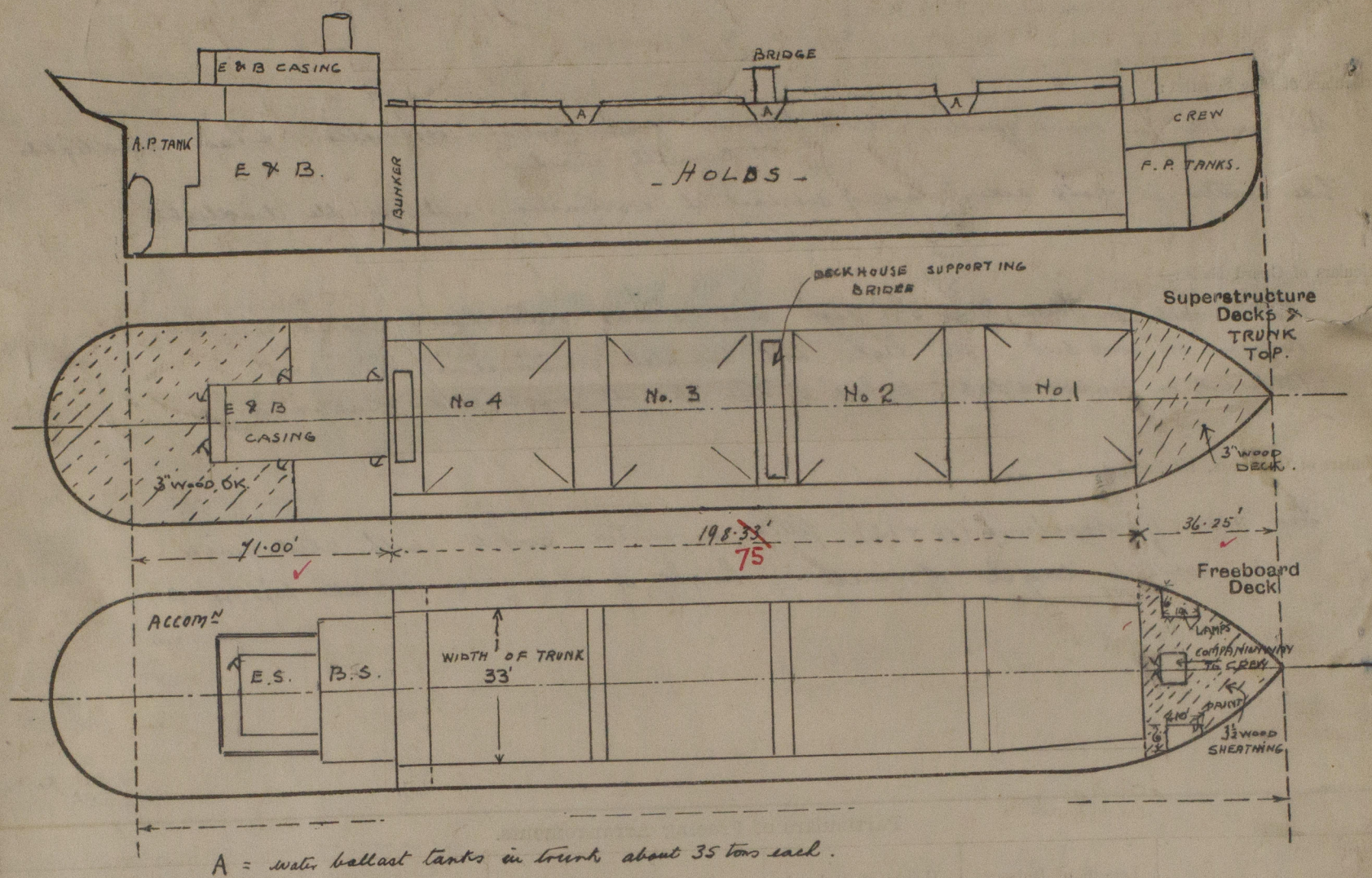
State position of each freeing port ... } After Well: — *Pop Co. Pöble* — *23'* — *68'7"* — *40'5"* — *128'2"* — *104'* —
(F. and A. position and height above deck edge) } Forward Well: — *11'* — *11'* — *11'* — *11'* — *11'* — *11'* — *11'* — *11'* —
State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such: — *one bar mid height* — *11"* —
Additional area where sheer is less than standard.

	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead ... ..	.44 ✓	.40 ✓	7x3x.44 L ✓	30" ✓	Lapped to upper stiffener extending below deck.	None ✓	✓	7'-4" ✓
Raised Quarter Deck Bulkhead ...	✓	✓	✓	✓	✓	✓	✓	✓
Bridge, After Bulkhead	✓							
Bridge, Forward Bulkhead	✓							
Forecastle Bulkhead	No bulkhead - open forecabin				✓	✓	✓	✓
Trunk, ^{At extends from poop} _{Back to end of fore S/C}	.60	Top plating .40	Horizontal 8x3x.40 L	24" above deck and	Flanged bracket.	✓	✓	
Trunk, Forward	✓							
Exposed Machinery Casings on Freeboard or Raised Quarter Decks ...	✓							
Exposed Machinery Casings on Superstructure Decks	18"x40" ✓	.32 ✓	3x2½x.30 X ✓	26" ✓	Bracketed at top & extending below	1 @ 4'-10" x 2' (P.T.S) 1 @ 5' x 2' (P.T.S)	18" ✓ 16" ✓	7'-0" ✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	18"x70" ✓	.30 ✓	3x3x.25 Z ✓	33" ✓	Extends above & below decks.	1 (P.T.S) 5' x 2' into poop 1 @ 5' x 2'	18" ✓	7'-4" ✓
Deckhouses on Flush Deck Ships ...	✓	✓	✓	✓	✓	✓	-	✓

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

Poop Bulkhead	no openings ✓
Raised Quarter Deck Bulkhead ...	✓
Bridge, After Bulkhead	✓
Bridge, Forward Bulkhead	✓
Forecastle Bulkhead	open ✓
Exposed Machinery Casings on Freeboard or Raised Quarter Decks ...	✓
Exposed Machinery Casings on Superstructure Decks	Steel Ringed doors - can be manipulated from both sides. to S or B space ✓ 15 inch hinged doors - can be manipulated from both sides - no Poop access ✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	Steel Ringed door - can be manipulated both sides - from Poop to S or B ✓
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:—

Trunk connected to loop bulkhead and runs continuous to coll. bulkhead.

The vessel has been examined afloat.

D.W.				FROM Blue Sheet		TPI
Depth	Displ ^t	Δ	T.p.I			
21'			26.94	17-1/4	Δ 4830	26.1
20'	3935	5740	26.81	17'-0	Δ 4800	
19'	3615	5420	26.68	85% wtd	19.23	
18'	3295	5100	26.54	Keel =	19.37	
17'	2995	4800	26.38		19.37 = 19'-4 1/2"	
					Δ = 5544	
					x.995 = 5516	
					F.W	
					wtd = 18.83	
					Keel = 18.97	
					18.97 = 18'-11 3/4"	
					Δ = 5413 & TPI = 26.62	

Builder's name and yard number R. Duncan & Co. Ltd. Port Glasgow.

Names of sister ships

Owners Agnes Duncan S.S. Co Ltd (J. V. Duncan & Co.)

Fee £ 11 : 1 : 0

Received by me



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