

Lloyd's Register of Shipping.
SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker
having Prop Long Bridge and Tole Port of Survey Cardiff
EMIRE SOLDIER Date of Survey 31/12/31 - 31/1/32
KONSUL HENDRIK FISER (Type of Superstructures.) Name of Surveyor J.G. Buchanan
Ship's Name AELYBRYN Nationality and Port of Registry British Norwegian Official Number 143991 Gross Tonnage 4437 Date of Build 1928-8
Swansea HAMBOURG LONDON
Moulded Dimensions: Length 384 Breadth 51.75 Depth 28.5 Particulars of Classification 100 A1
Moulded displacement at moulded draught = 85 per cent. of moulded depth. 10852 tons
Coefficient of fineness for use with Tables .789

Depth for Freeboard (D)		Depth correction		Round of Beam correction	
Moulded depth	<u>28.50</u>	(a) Where D is greater than Table depth (D-Table depth) R =		Moulded Breadth (B)	<u>51.75</u>
Stringer plate	<u>0.38</u>	$(28.54 - 25.60) \times 2.954 = + 8.68$		Standard Round of Beam = $\frac{B \times 12}{50} =$	<u>12.42</u>
Sheathing on exposed deck	<u>.04</u>	(b) Where D is less than Table depth (if allowed) (Table depth-D) R =		Ship's Round of Beam =	<u>13.06</u>
T $\left(\frac{L-S}{L}\right) =$	<u>28.54</u>			Difference	<u>.58</u>
Depth for Freeboard (D) =	<u>28.638</u>	If restricted by superstructures		Restricted to	
				Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L}\right) =$	<u>.58 \times .204 = -.03</u>

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed ...	<u>28.75</u>	<u>28.75</u>	<u>7.99</u>	✓	<u>28.75</u>	Standard Height of Superstructure <u>7.34</u> ✓
" overhang ...						" " R.Q.D. ✓
R.Q.D. enclosed ...						Deduction for complete superstructure <u>40.93</u> ✓
" overhang ...						Percentage covered $\frac{S}{L} =$ <u>79.60</u>
Bridge enclosed ...	<u>237.92</u>	<u>237.92</u>	<u>7.99</u>	✓	<u>237.92</u>	" " $\frac{S_1}{L} =$ <u>79.60</u>
" overhang aft ...						" " $\frac{E}{L} =$ <u>79.60</u> ✓
" overhang forward ...						Percentage from Table, Line A. ✓
Fore enclosed & HOUSES	<u>39.03</u>	<u>39.03</u>	<u>8.00</u>	✓	<u>39.03</u>	(corrected for absence of forecastle (if required))
" overhang ...						Percentage from Table, Line B. <u>74.80</u> ✓
Fore aft ...						(corrected for absence of forecastle (if required))
" forward ...						Interpolation for bridge less than .2L (if required) ✓
Tonnage opening aft ...						Deduction = <u>40.93 \times .748 = -30.62</u> ✓
" forward						
Total ...	<u>305.70</u>	<u>305.70</u>			<u>305.70</u>	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P. ...	<u>48.40</u>	1		<u>48.40</u>	<u>60</u>	<u>60.00</u>	1		<u>60.00</u>	Mean actual sheer aft = EXCESS.
1/2 L from A.P. ...	<u>21.54</u>	4		<u>86.16</u>	<u>26.07</u>	<u>26.07</u>	4		<u>104.28</u>	Mean standard sheer aft
2/3 L " ...	<u>5.32</u>	2		<u>10.64</u>	<u>6.52</u>	<u>6.52</u>	2		<u>13.04</u>	Mean actual sheer forward = EXCESS.
Amidships ...	-	4		-	0	-	4		-	Mean standard sheer forward
2/3 L from F.P. ...	<u>10.64</u>	2		<u>21.28</u>	<u>13.04</u>	<u>13.04</u>	2		<u>26.08</u>	Length of enclosed superstructure forward of amidships = <u>.30L</u>
1/2 L " ...	<u>43.08</u>	4		<u>172.32</u>	<u>52.14</u>	<u>52.14</u>	4		<u>208.56</u>	" " aft of " = <u>.32L</u>
F.P. ...	<u>96.80</u>	1		<u>96.80</u>	<u>120</u>	<u>120.00</u>	1		<u>120.00</u>	
Total ...				<u>435.60</u>					<u>531.96</u>	

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - \frac{S}{2L}}{.75} \right) = \frac{96.36}{18} \left(\frac{.75 - .398}{.75} \right) = -1.88$$

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.

$$\begin{aligned} \text{Depth to Freeboard Deck} &= \text{Ft. } 28.54 \\ \text{Summer freeboard} &= 4.01 \\ \text{Moulded draught (d)} &= 24.53 \end{aligned}$$

Deduction for Tropical freeboard and addition for

$$\text{Winter freeboard} = \frac{d}{4} \text{ inches} = 6.13 = 6 \frac{1}{4}$$

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

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$$\Delta = 11058$$

Tons per inch immersion at summer load water line

$$T = 39.25$$

Deduction = $\frac{\Delta}{40T}$ inches

$$= 7.04$$

$$= 7$$

TABULAR FREEBOARD corrected for Flush Deck (if required)

$$\text{Correction for coefficient} = \frac{789 + 68}{1.36}$$

	+	-
Depth Correction ...	<u>8.68</u>	-
Deduction for superstructures ...	-	<u>30.62</u>
Sheer correction ...	-	<u>1.88</u>
Round of Beam correction ...	-	<u>.03</u>
Correction for Thickness of Deck amidships ...	-	-
Other corrections, scantlings, etc. ...	-	-
	<u>8.68</u>	<u>32.53</u>
		<u>- 23.85</u>

$$\text{Summer Freeboard} = 48.09$$

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

Tropical Fresh Water Line above Centre of Disc ... 337 13 1/4Fresh Water Line ... 178 7Tropical Line ... 159 6 1/4Winter Line ... 159 6 1/4Winter North Atlantic Line ... 159 6 1/4Tropical Fresh Water Freeboard ... 882 2 1/10 3/4Fresh Water ... 1041 3 1/5 1/2Tropical ... 1060 3 1/5 1/4Winter ... 1378 4 1/6 1/4Winter North Atlantic ... 1378 4 1/6 1/4

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Exposed									
* within Superstructure									
Description of Hatchway	on upper Dk No. 1	on Bridge Dk No. 2	No. 3	No. 4	on upper Dk No. 5	on upper Deck No. 2	No. 3	No. 4	
Dimensions of Hatchway	29'-10" x 19'	28' x 19'	18'-8" x 19'	32'-8" x 19'	30'-4" x 19'	28' x 19'	18'-8" x 19'	32'-8" x 19'	
COAMINGS	Height above Deck	42"	30"	30"	30"	30"			
	Thickness	44"	44"	44"	44"	44"			
	Sides	44"	44"	44"	44"	44"			
	Ends	44"	44"	44"	44"	44"			
Stiffeners	...	7 x 3 1/2 x 46 L	7 x 3 1/2 x 46 L	7 x 3 1/2 x 46 L	7 x 3 1/2 x 46 L	7 x 3 1/2 x 46 L			
	Brackets, Stays	3 - 2 1/2 dia pts	2 - 2 dia pts	1 - 2 dia pts	3 - 2 dia pts	2 - 2 dia pts			
HATCH BEAMS	Number	5	5	3	6	5	5	3	6
	Spacing	4'-11 1/2"	4'-8"	4'-8"	4'-8"	5'-0 1/2"	4'-8"	4'-8"	4'-8"
	Scantling and Sketch								
	plate	17 x 36	14 x 32	14 x 32	14 x 32	17 x 36	16 x 36	16 x 36	16 x 36
mounting bars	...	4 x 3 x 44	4 x 3 x 44	4 x 3 x 44	4 x 3 x 44	4 x 3 x 44	4 x 3 x 44	4 x 3 x 44	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			White	pine				
	Thickness			2 1/2"					
	How fitted			fore and aft					
	Bearing Surface			3" at coamings	4" on beams				
Spacing of Cleats				24"					
Number of Tarpaulins	3	3	3	3	3	2	2	2	

Particulars of fiddle, funnel and ventilator coamings:—

- Boiler Casing top - gratings covered by strong steel hinged covers, permanently attached
- E.R. skylights - constructed of steel with hinged flaps and bullseyes
- 2 Vents to Boiler Room - 30" dia coaming 33" high 25" thick } canvas covers for closing
- 2 " " Engine " - 24" dia " 33" " 25" " }
- Funnel casing - coaming 8'-6" high 25" thick efficiently riveted to casing top

Particulars of Flush Bunker Scuttles:—

None -

Particulars of Companionways:—

None

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

- 1 Vent in fore well to hold - 18" dia coamings 36" high 40" thick
- 7 Vents on Bridge Deck to tunnel decks & hold - 18" dia coamings 30" high 40" thick
- 1 " in after well to hold - 18" " 36" " 40"
- 1 " " " " tunnel - 6" " 36" " 40"

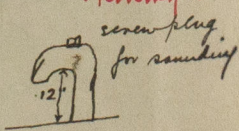
3 1/2 x 3 1/2 x 40 angle riveted to deck rivets spaced 32"

Angle bolted to deck bolts 3" apart

Work keeps fitted to ventilator

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

- 10 - 3" dia steel air pipes on Bridge Deck - Height of opening above deck 18" to 25"
- 1 - 3" cast iron combined air sounding on Br. Dk - " " bend " 12"



Work keeps fitted to air pipes

Particulars of Gangway Cargo and Coaling Ports:—

None



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Particulars of Scuppers and Sanitary Discharge Pipes —

3 scuppers (pts) - 2½" dia with storm valves draining Bridge tween decks thro' shell. ✓

A number of scupper and sanitary discharge pipes (pts) from Deckhouses on Bridge Deck and leading thro' Bridge sides efficiently constructed ✓

Particulars of Side Scuttles:

Side scuttles fitted in fore space to crew's quarter, with deadlights permanently attached, of substantial construction and can be secured watertight. ✓

Particulars of Guard Rails:—



Particulars of Gangways, Lifelines, etc.:—

None fitted

Satisfactory means for the protection of the crew posted in the wells.

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 ...	42'-0" ✓	4'-0" ✓	3'-11" x 1'-6" ✓	2 ✓	11.8 sq. ft. ✓	10.7 sq. ft. ✓
Forward Well ...	31'-6" ✓	4'-1" ✓	1 @ 3'-6" x 1'-8" ✓ 1 @ 3'-11" x 1'-6" ✓	2 ✓	11.8 sq. ft. ✓	9.65 sq. ft. ✓

State position of each freeing port ...

After Well: — Poop

BRIDGE

Lower edges 12" above deck

(F. and A. position and height above deck edge)

Forward Well: — Bridge

FORE

one rail half light in each

State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:—

Additional area where sheer is less than standard.

Particulars of Superstructures, Trunks, Casings, Deckhouses.

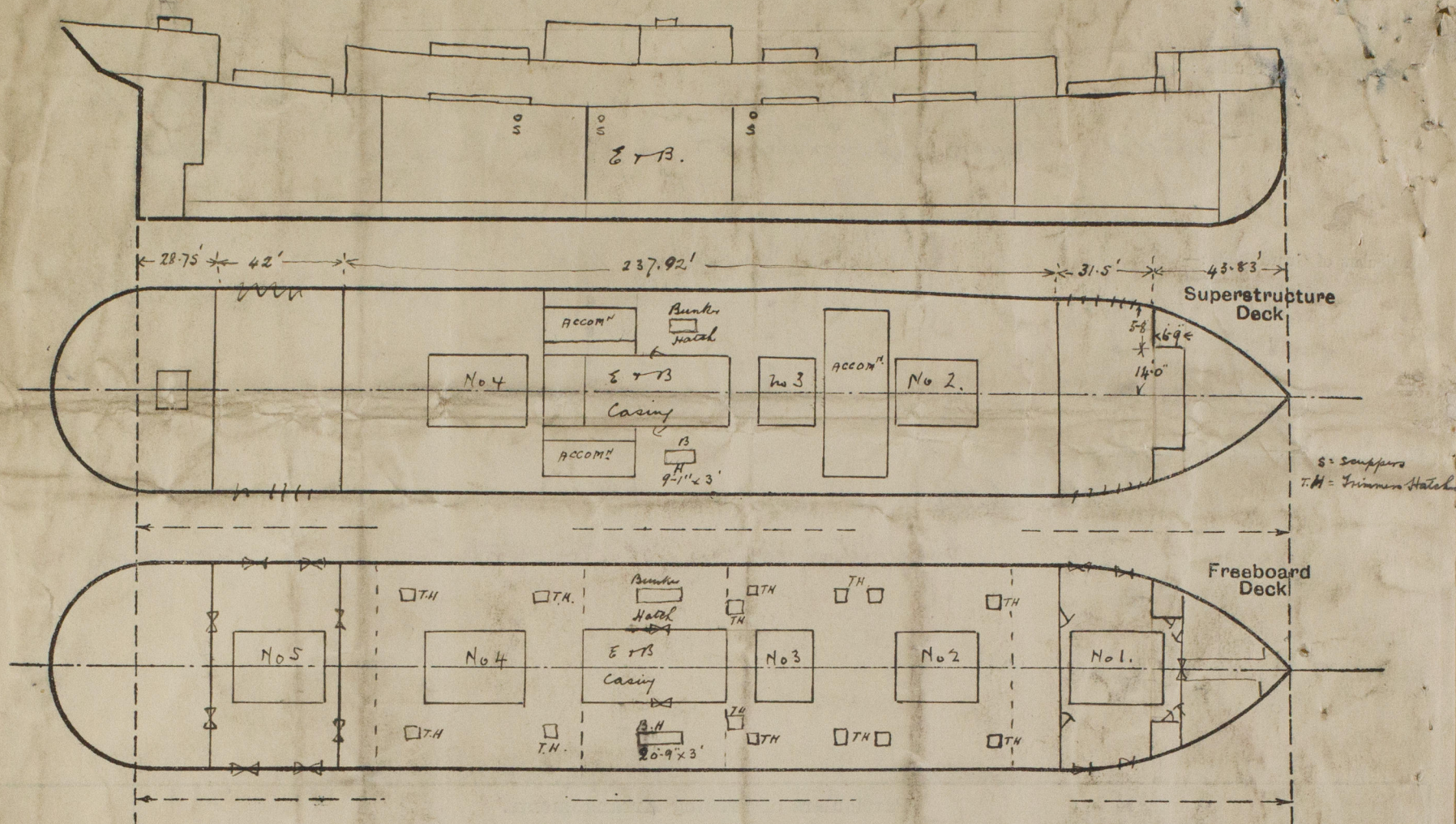
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead ...	45" x 40" ✓	36" ✓	6 x 3 x 40" ✓	30" ✓	lugged top & bottom ✓	1 @ Gr. 5'9" x 4' ✓	18" ✓	✓
Raised Quarter Deck Bulkhead ...	✓	✓	✓	✓	✓	✓	✓	✓
Bridge, After Bulkhead ...	42" x 36" ✓	28" ✓	3 x 3 x 36" ✓	32" ✓	none ✓	1 (pts) 5'9" x 4' ✓	19" ✓	✓
Bridge, Forward Bulkhead ...	40" x 44" ✓	40" ✓	9 x 3 x 42" ✓	27"-30" ✓	lugged top & bottom ✓	1 (pts) 5' x 2'-5" ✓	19" ✓	✓
Forecastle Bulkhead ...	36" x 36" ✓	30" ✓	3 x 3 x 30" ✓	25" ✓	none ✓	1 @ Gr. 5' x 2' ✓ 1 (pts) 5' x 2' ✓ 1 (pts) 5' x 2' ✓	18" ✓	✓
Trunk, Aft ...	✓	✓	✓	✓	✓	1 (pts) 5' x 2' ✓ to side houses	18" ✓	✓
Trunk, Forward ...	✓	✓	✓	✓	✓	✓	✓	✓
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	✓	✓	✓	✓	✓	✓	✓	✓
Exposed Machinery Casings on Superstructure Decks ...	33" x 40" ✓	38" ✓	3 x 3 x 30" ✓	27"-32" ✓	Bkts at top and extending down to 2nd deck ✓	1 (pts) 5' x 2' ✓	18" ✓	7'-0" ✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ...	30" x 30" ✓	30" ✓	3 x 3 x 30" ✓	27"-32" ✓	✓	1 (pts) 4' x 4' ✓	18" ✓	7'-9" ✓
Deckhouses on Flush Deck Ships ...	✓	✓	✓	✓	✓	✓	✓	✓

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

Poop Bulkhead ...	Weather boards full light in riveted channels. ✓	Thickness as per Convention Requirements
Raised Quarter Deck Bulkhead ...	✓	
Bridge, After Bulkhead ...	Weather boards full light in riveted channels. ✓	Thickness as per Convention Requirements
Bridge, Forward Bulkhead ...	Hinged steel door permanently attached, closed with screw clips 14"-16" apart. ✓	Character of being operated from both sides
Forecastle Bulkhead ...	Gr. door, weather boards full light in riveted channels. ✓	1 (pts) to lamp room - efficient steel hinged door
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	✓	1 (pts) to side houses - efficient steel
Exposed Machinery Casings on Superstructure Decks ...	Steel hinged doors & can be operated from both sides. ✓	(to B.S.)
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ...	Bolted plate. Permanently attached, not capable of being removed. ✓	
Deckhouses on Flush Deck Ships ...	✓	

Empire Soldier

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:—



Bunker Hatchway on Tidy top - 4'7" x 18'8" - strongly constructed - 6" coaming - wood covers (2 1/2")
tarpanlin's & battening down arrangements!

Bunker Hatchway on Bridge Deck - Ht of coaming, covers, tarpanlin's & battening down arrangements same as those hatches on Bridge deck!

Bunker & Trimmer Hatches in Br. Tween Decks - Coamings, covers, tarpanlin's etc same as for hatches in that space!

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

FORECASTLE

Enclosed = 37.08 ✓

Houses $\frac{6.75 \times 5.67 \times 2}{39.33} = 1.95$ ✓

Allowed = 39.03 ✓

85% of 28.5' = 24.2'

Deadweight at 23'-1" = 7600 tons

" 23-5 3/4" = 7800 "

" 23-10 3/4" = 8000 "

" 24-3 1/2" = 8200 "

" 24-6 1/4" = 8280 "

Extreme load draught = 24'-8 1/4"

Extreme disp @ 24'-6" = 10970 tons } From 1906 report.

2 1/4" @ 39.25 = 88 "

11,058 tons @ 24'-8 1/4"

Builder's name and yard number

Names of sister ships

Owners

Cook Shipping Co. Ltd, Coleridge House, Swansea.

Fee £

Received by me



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