

26 AUG 1935

Index. No. **13213**
(For London Office only.)

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker
having *poop, bridge and forecastle*

(Type of Superstructures.)

Ship's Name <i>Danubian ex "Kavalamos P"</i>	Nationality and Port of Registry <i>British Larnaca (Cyprus)</i>	Official Number <i>105198</i>	Gross Tonnage <i>2728</i>	Date of Build <i>July 1898</i>
Moulded Dimensions: Length <i>320'</i> ✓ Breadth <i>43.8'</i> ✓ Depth <i>24.25'</i> ✓		Moulded displacement at moulded draught = 85 per cent. of moulded depth <i>6416</i> tons		
Coefficient of fineness for use with Tables <i>777</i>		Particulars of Classification <i>100 A1 with freeboard</i>		

Port of Survey *Salata*

Date of Survey *5th, 6th and 14th August 1935*

Name of Surveyor *Jackie Leach*

<p>Depth for Freeboard (D)</p> <p>Moulded depth <i>24.25'</i></p> <p>Stringer plate <i>0.5'</i></p> <p>Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ <i>✓</i></p> <p>Depth for Freeboard (D) = <i>24.30'</i></p>	<p>Depth correction</p> <p>(a) Where D is greater than Table depth (D - Table depth) R = <i>✓</i> $(24.30 - 21.33) \times 2.461 = +7.31$ <i>2.97'</i></p> <p>(b) Where D is less than Table depth (if allowed) (Table depth - D) R = <i>✓</i></p> <p>If restricted by superstructures <i>✓</i></p>	<p>Round of Beam correction</p> <p>Moulded Breadth (B) <i>43.8</i></p> <p>Standard Round of Beam = $\frac{B \times 12}{50} =$ <i>10.51</i></p> <p>Ship's Round of Beam = <i>11.00</i></p> <p>Difference <i>0.49</i></p> <p>Restricted to <i>✓</i></p> <p>Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) =$ $\frac{.49}{4} \times \frac{5834}{1320} =$ <i>0.07</i></p>
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DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed	<i>29.0</i>	<i>29.00</i>	<i>5.0</i>	$\times \frac{5}{8.7}$	<i>21.64</i>
" overhang					
R.Q.D. enclosed					
" overhang					
Bridge enclosed <i>71.33</i>	<i>71.33</i>	<i>71.33</i>	<i>7.16</i>		<i>71.33</i>
" overhang aft					
" overhang forward					
Fore enclosed	<i>33.0</i>	<i>33.00</i>	<i>7.50</i>		<i>33.00</i>
" overhang					
Trunk aft					
" forward					
Tonnage opening aft					
" forward					
Total	<i>133.33</i>	<i>133.33</i>			<i>125.97</i>

Standard Height of Superstructure *6.70*

" " R.Q.D. *✓*

Deduction for complete superstructure *36.67*

Percentage covered $\frac{S}{L} =$ *41.66* ✓

" " $\frac{S_1}{L} =$ *41.66* ✓

" " $\frac{E}{L} =$ *39.36* ✓

Percentage from Table, Line A. *✓*
(corrected for absence of fore-castle (if required))

Percentage from Table, Line B. *26.95*
(corrected for absence of fore-castle (if required))

Interpolation for bridge less than 2L (if required)

Deduction = $36.67 \times 26.95 =$ *9.88*

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	<i>42.00</i>	1		<i>42.00</i>	<i>45.5</i>	<i>45.00</i>	1		<i>45.00</i>
$\frac{1}{4}$ L from A.P.	<i>18.69</i>	4		<i>74.76</i>	<i>19.75</i>	<i>19.75</i>	4		<i>79.00</i>
$\frac{2}{4}$ L "	<i>4.62</i>	2		<i>9.24</i>	<i>6.0</i>	<i>4.94</i>	2		<i>9.88</i>
Amidships	-	4		-	-	-	4		-
$\frac{3}{4}$ L from F.P.	<i>9.24</i>	2		<i>18.48</i>	<i>9.28</i>	<i>9.28</i>	2		<i>18.56</i>
$\frac{1}{4}$ L "	<i>37.38</i>	4		<i>149.52</i>	<i>37.12</i>	<i>37.12</i>	4		<i>148.48</i>
F.P.	<i>84.00</i>	1		<i>84.00</i>	<i>84.0</i>	<i>84.0</i>	1		<i>84.00</i>
Total				<i>378.00</i>					<i>384.92</i>

Correction = $\frac{\text{Difference between sums of products}}{18} = \frac{6.92}{18} =$ *0.38* (if limited on account of midship superstructure. *0.21*)

If limited on account of midship superstructure. *0.21*

Mean actual sheer aft = *Even*

Mean standard sheer aft = *Even*

Mean actual sheer forward = *Standard*

Mean standard sheer forward = *Standard*

Length of enclosed superstructure forward of amidships = *7.16*

" " aft of " = *0.97L*

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

Depth to Freeboard Deck = *Ft.*

Summer freeboard = *Ft.*

Moulded draught (d) = *Ft.*

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = *5.58*

Addition for Winter North Atlantic Freeboard (if required) = *5.5*

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta =$ *6372*

Tons per inch immersion at summer load water line

$T =$ *28.57*

Deduction = $\frac{\Delta}{40T}$ inches = *5.58*

= *5.5*

TABULAR FREEBOARD corrected for Flash Deck (if required)

Correction for coefficient $\frac{777+68}{1.36} = \frac{1445}{1.36} =$ *1062.5*

	+	-
Depth Correction	<i>7.31</i>	
Deduction for superstructures		<i>9.88</i>
Sheer correction		<i>0.21</i>
Round of Beam correction		<i>0.07</i>
Correction for Thickness of Deck amidships		
Other corrections, scantlings, etc.		
	<i>7.31</i>	<i>10.16</i>
Summer Freeboard =	<i>42.00</i>	

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, *W*, Steel, Deck:—

Existing freeboard as measured, but was computed under the Convention regulations

Tropical Fresh Water Line above Centre of Disc	<i>9"</i>	<i>1229</i>	Tropical Fresh Water Freeboard
Fresh Water Line " "	<i>5 1/2"</i>	<i>1140</i>	Fresh Water " "
Tropical Line " "	<i>3 1/2"</i>	<i>89</i>	Tropical " "
Winter Line below " "	<i>3 1/2"</i>	<i>89</i>	Winter " "
Winter North Atlantic Line " "	<i>5 1/2"</i>	<i>1140</i>	Winter North Atlantic " "

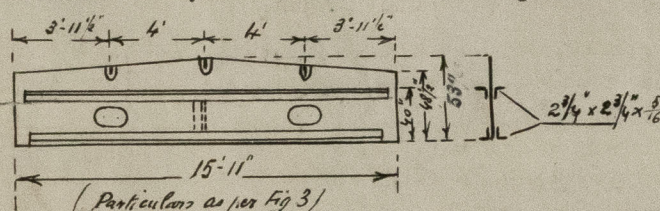
30 AUG 1935

RECEIVED
24 SEP 1935

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS											
Description of Hatchway	No. 1 Upper Deck	No. 2 Upper Deck	No. 3 & 4 Upper Deck	Cross Bulkhead Hatchway Upper Deck	Coal Hatchway No. 1, 2, 11/3 Upper Deck	Coal Hatchway No. 3, 11/3 Upper Deck	Cross Bulkhead Hatchway Bridge Deck	Coal Hatchway No. 5 Bridge Deck	Coal Hatchway No. 6 Bridge Deck	Coal Hatchway No. 7 Bridge Deck	Coal Hatchway No. 8 Bridge Deck
Dimensions of Hatchway	22'0", 16'0"	24'0", 16'0"	24'0", 16'0"	6'0", 13'0"	5'4", 12'0"	3'10", 12'0"	6'0", 13'0"	5'8", 12'0"	3'4", 2'7"	3'7", 3'6"	3'7", 3'6"
COAMINGS	Height above Deck ...	38"	41"	34"	16"	17"	23"	18"	9"	12"	12"
	Thickness ...	3/16"	3/16"	3/16"	3/16"	3/16"	3/16"	3/16"	3/16"	3/16"	3/16"
	Stiffeners ...	17 x 3 x 1/2"	17 x 3 x 1/2"	17 x 3 x 1/2"	17 x 3 x 1/2"	17 x 3 x 1/2"	17 x 3 x 1/2"	17 x 3 x 1/2"	17 x 3 x 1/2"	17 x 3 x 1/2"	17 x 3 x 1/2"
	Brackets, Stays ...	24 x 23"	24 x 23"	24 x 23"	24 x 23"	24 x 23"	24 x 23"	24 x 23"	24 x 23"	24 x 23"	24 x 23"
HATCH BEAMS	Number ...	2	2	2	2	2	2	2	2	2	2
	Spacing ...	4'10"	4'10"	4'10"	4'10"	4'10"	4'10"	4'10"	4'10"	4'10"	4'10"
	Scantling and Sketch ...	Plate: 45" x 4 1/2" x 3/16"	Plate: 45" x 4 1/2" x 3/16"	Plate: 45" x 4 1/2" x 3/16"	Plate: 45" x 4 1/2" x 3/16"	Plate: 45" x 4 1/2" x 3/16"	Plate: 45" x 4 1/2" x 3/16"	Plate: 45" x 4 1/2" x 3/16"	Plate: 45" x 4 1/2" x 3/16"	Plate: 45" x 4 1/2" x 3/16"	Plate: 45" x 4 1/2" x 3/16"
	Bearing Surface ...	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"
FORE AND AFTERS	Number ...	9 in all	9 in all	9 in all	3	3	3	3	3	3	3
	Spacing ...	3'11 1/2" x 4'0"	3'11 1/2" x 4'0"	3'11 1/2" x 4'0"	3'3"	3'3"	3'3"	3'3"	3'3"	3'3"	3'3"
	Unsupported Lengths ...	6'6" x 3'8" x 3/16"	6'6" x 3'8" x 3/16"	6'6" x 3'8" x 3/16"	6'6" x 3'8" x 3/16"	6'6" x 3'8" x 3/16"	6'6" x 3'8" x 3/16"	6'6" x 3'8" x 3/16"	6'6" x 3'8" x 3/16"	6'6" x 3'8" x 3/16"	6'6" x 3'8" x 3/16"
	Scantling and Sketch ...	2 1/2" x 3 1/2" x 3/16"	2 1/2" x 3 1/2" x 3/16"	2 1/2" x 3 1/2" x 3/16"	2 1/2" x 3 1/2" x 3/16"	2 1/2" x 3 1/2" x 3/16"	2 1/2" x 3 1/2" x 3/16"	2 1/2" x 3 1/2" x 3/16"	2 1/2" x 3 1/2" x 3/16"	2 1/2" x 3 1/2" x 3/16"	2 1/2" x 3 1/2" x 3/16"
HATCH COVERS	Material ...	Pine	Pine	Pine	Pine	Pine	Pine	Pine	Pine	Pine	Pine
	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"
	How fitted ...	Transverse	Transverse	Transverse	Transverse	Transverse	Transverse	Transverse	Transverse	Transverse	Transverse
	Bearing Surface ...	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"
Spacing of Cleats	Side 11'0"	Side 12'0"	Side 12'0"	Side 12'0"	Side 12'0"	Side 12'0"	Side 12'0"	Side 12'0"	Side 12'0"	Side 12'0"	Side 12'0"
Number of Tarpaulins	Ends 8'0"	Ends 8'0"	Ends 8'0"	Ends 8'0"	Ends 8'0"	Ends 8'0"	Ends 8'0"	Ends 8'0"	Ends 8'0"	Ends 8'0"	Ends 8'0"
*Are wood fore and afters steel shod at all bearing surfaces? None											
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											

Particulars of fiddle, funnel and ventilator coamings:—



Engine and boiler casings enclosed by bridge. Tunnel riveted to top of fiddle casing. Stokhold grating covered by steel hinged covers in good condition. Fiddle and engine room ventilators in efficient condition.

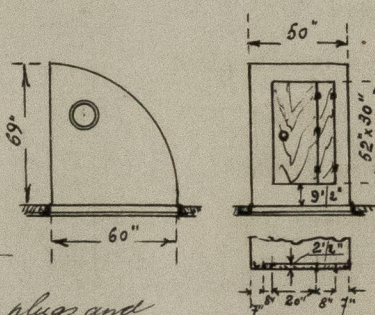
Particulars of Flush Bunker Scuttles:—

None fitted

Particulars of Companionways:—

One on poop (as per sketch)

Substantially constructed and riveted to deck plating. Fitted with fixed lights. Doors opened from inside and outside.



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

All coamings closed with wood plugs and canvas covers.

4 ventilators forward well 14" diam, coaming 36" x 38" led to hold grates.	4 ventilators, bridge deck 8" diam, coaming 14"
4 " after well 14" " " 36" x 28 " " 33"	2 " " " 13 1/2" " " 14"
2 " fore-castle 10" " " 12" x 28 " " 14"	2 " " " 11" " " 14"
1 " " 6" " " 6" x 24 " " 14"	
1 " " 4" " " 4" x 24 " " 14"	
1 " " 10 1/2" " " 10 1/2" x 28 " " 14"	
5 " poop 6" " " 6" x 24 " " 14"	

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

One pipe in forward and after wells fitted with screwed lids. Two air pipes on bridge deck 14" high and 4 1/2" diam, with swan necks closed with canvas covers and wood plugs. One air pipe on poop deck 18" high with wood plug for closing.

Particulars of Gangway Cargo and Coaling Ports:—

None fitted

Particulars of Scuppers and Sanitary Discharge Pipes:—

All scuppers thro ship's sides in wells and on bridge, forward well, port and starboard, 5 scuppers 6" x 4"; bridge deck, port and starboard 3 1/2" x 3"; after well, port and starboard, five scuppers 6" x 4".
Sanitary discharge pipes from W.C. in fore-castle, port and starboard, discharging thro ship's sides, above freeboard deck.

Particulars of Side Scuttles:—

None fitted below freeboard deck. Side scuttles to crew space in fore-castle 7 1/2" diam; 9" below fore-castle deck, fitted with dead lights permanently attached. Fore-castle bulkhead four fixed scuttles. Poop, three side scuttles port and starboard, 8" diam; 2 1/2" below poop deck, with attached dead lights. Poop, port bulkhead 4 scuttles without dead lights. All substantially constructed.

Particulars of Guard Rails:—

Substantial rails and stanchions fitted on fore-castle, bridge and poop. Fore-castle, top and bottom rails 1" diam, 3'3" high; stanchions 1 1/2" to 2" diam, average spacing 47". Bridge deck, railings 47" length, top and bottom rails 1" diam, 3 1/2" high, spacing 3'6"; bulwark plating 210" length. Poop, railings same as on fore-castle. Forward and after wells strong bulwark plates 3'9" high with bulb angle rail, and supported by strong round iron stays 2" diam.

Particulars of Gangways, Lifelines, etc.:—

No gangways and no lifelines fitted in fore and after wells.

Lifelines fitted in both wells in accordance with the regulations.

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	100'0"	3'9"	2'6" x 1'7"	4	3.95 sq. ft. total 15.13 sq. ft.	30 sq. ft.
Forward Well	85'6"	3'9"	2'6" x 1'7"	5	3.95 sq. ft. total 19.75 sq. ft.	18 sq. ft.
State position of each freeing port ... After Well:— height above deck edge 14'10", from after bridge bulkhead 6", from poop bulkhead 15'8" (F. and A. position and height above deck edge) Forward Well:— " " " 11'12", from forward bridge bulkhead 4'10", from forward bulkhead 12'0". State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— No shutters, only one horizontal bar 1 1/2" diam. Additional area where sheer is less than standard.						

Particulars of Superstructures, Trunks, Casings, Deckhouses.

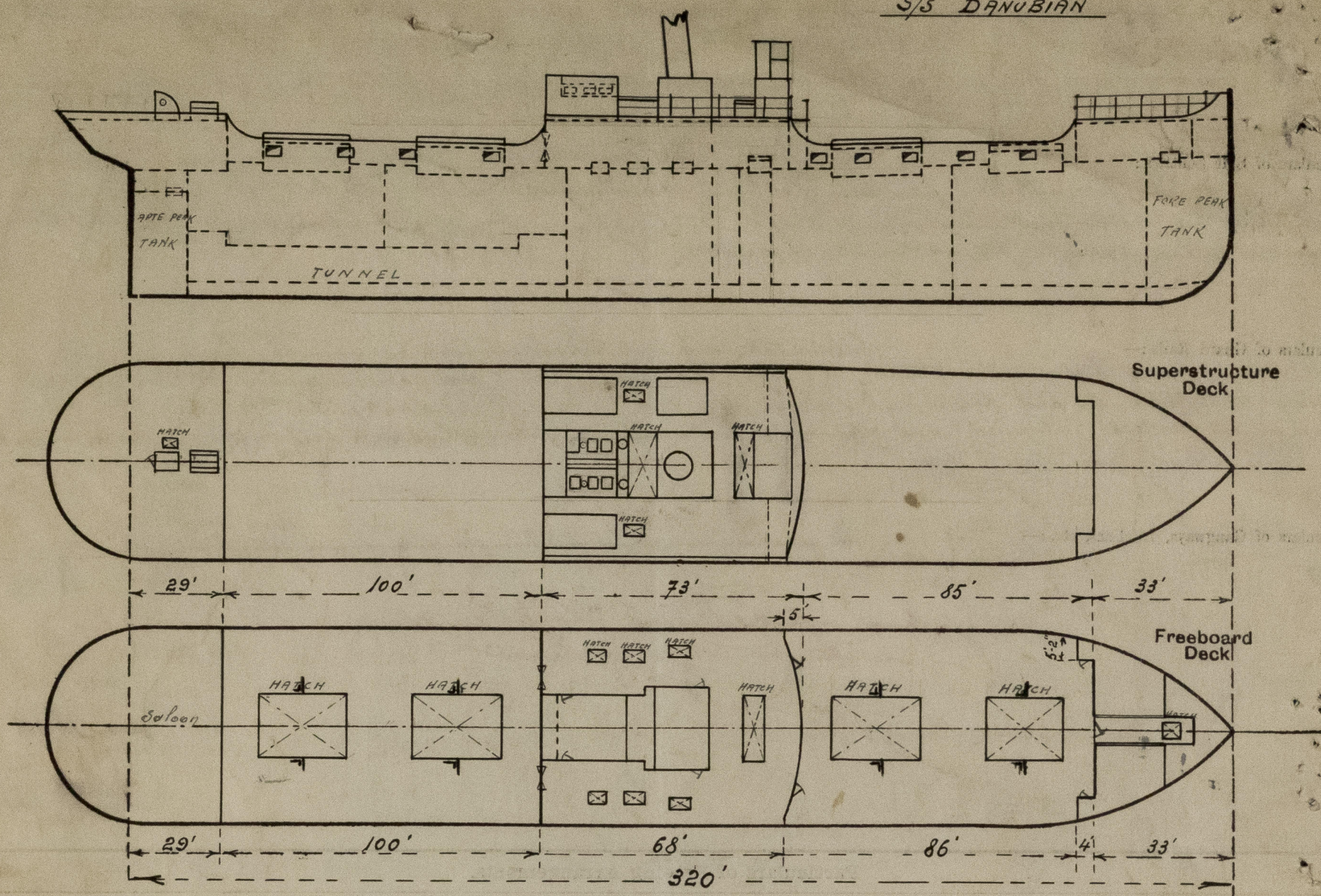
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead	✓	3/16"	Could not be examined on account of the saloon casing.	✓	✓	✓	✓	5'0"
Raised Quarter Deck Bulkhead	✓	✓	✓	✓	✓	✓	✓	✓
Bridge, After Bulkhead	✓	3/16"	4 1/2" x 3 1/2" x 3/16"	2'6" x 3'0"	none	6'3" x 3'10"	wood sill 1'4"	7'4"
Bridge, Forward Bulkhead	✓	2'3" x 1'4"	5 1/2" x 3 1/2" x 3/16"	2'6"	Practiced top and bottom	2'6" x 2'6"	3'0"	7'4"
Fore-castle Bulkhead	✓	1'7" x 3/16"	3 1/2" x 3 1/2" x 3/16"	2'5"	none	5'11" x 2'8"	wood sill 3 1/2"	7'4"
Trunk, Aft	✓	✓	✓	✓	✓	✓	✓	✓
Trunk, Forward	✓	✓	✓	✓	✓	✓	✓	✓
Exposed Machinery Casings on Free-board or Raised Quarter Decks	✓	✓	✓	✓	✓	✓	✓	✓
Exposed Machinery Casings on Super-structure Decks	✓	2'0" x 1'4"	3 1/2" x 3 1/2" x 3/16"	4'14"	none	4'12" x 2'1"	2'1"	7'2"
Machinery Casings within Super-structures not fitted with Class I Closing Appliances	✓	1'3"	3 1/2" x 3 1/2" x 3/16"	4'8" x 4'6"	none	4'17" x 2'4"	1'6"	7'4"
Deckhouses on Flush Deck Ships	✓	✓	✓	✓	✓	✓	✓	✓

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

Poop Bulkhead	No opening ✓
Raised Quarter Deck Bulkhead	✓
Bridge, After Bulkhead	Openings with shifting boards 2 1/2" thick secured to wood uprights by bolts; wood uprights secured to angle bars 3'2" high, as per sketch, 2 doors (fig 2)
Bridge, Forward Bulkhead	Hinged steel doors with 2 strong horizontal bars, door stiffened by angle bar, closing only from inside, as per sketch (fig 3) 3 doors
Fore-castle Bulkhead	Hinged steel doors for W.C. manipulated from both sides 5'3" x 2'5" w. sill 19" " " (fig 4)
Exposed Machinery Casings on Free-board or Raised Quarter Decks	Hinged steel fiddle, 4'12" x 2'1" w. sill 21" manipulated from both sides
Exposed Machinery Casings on Super-structure Decks	Hinged double half doors 4'7" x 2'1" w. sill 19" for galley manipulated from both sides
Machinery Casings within Super-structures not fitted with Class I Closing Appliances	Hinged steel door for engine room 4'2" x 2'1" w. sill 21" manipulated from both sides
Deckhouses on Flush Deck Ships	Hinged steel doors for stokehold 4'7" x 2'1" w. manipulated from both sides

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:—

S/S DANUBIAN



State any special features in the construction of the ship:— Fore and aft centre line guides in C.D.B. tanks. Cargo battens in holds. Steering chains and rods led along after well gunwale.

The followings are recommended:

1. ~~One additional freeing port to be fitted in after well port and starboard, to bring the freeing port area up to the requirements of the Convention.~~
2. ~~Locking bolts for fidley doors on bridge deck to be made efficient for manipulating from both sides.~~
3. ~~All wood hatches for hatchways on freeboard deck to be placed in good condition.~~
4. ~~Coaling hatchway on freeboard deck, starboard side, 4 new cleats to be fitted to the after end hatchway, 3 to middle hatchway, 8 to the forward hatchway and 10 to the port middle hatchway.~~
5. ~~To attach to the forecathle side scuttles, two missing deadlights.~~
6. ~~Forecathle hatchway, warning plates to be repaired.~~
7. ~~Life lines to be provided for both forward and after wells, on port and starboard sides.~~

For the carriage of timber deck cargo, I recommended:

8. ~~Strong angles or sockets to be fitted, riveted to the stringer plate and spaced 10' apart, for the uprights.~~
9. ~~Eye plates to be riveted to the sheerstrake at intervals of 10', the distance from the end bulkheads of the superstructure to the first eye plate being 6'6", for lashings.~~

Bridge 68.00
+ 2 1/2 x 5 = 3.33
71.33

Jack Corke
(Surveyor)

100 2 + 4 D.B. Tanks within the midship half length of the vessel have the holes in centre guide fitted with wood plugs except in way of suction for discharge of effluent.

Efficient provision made for steering in case of break down with the main steering gear. Hand steering gear placed in order & locked.

Builder's name and yard number *Agnew & Son, Stockton*

Names of sister ships

Owners *Cyprian Shipping Co. Ltd*

Fee £ 13 : 0 : 0

Received by me *not yet*

Expenses 3 : 0 : 0



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