

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, ~~Sailing Ship~~, Tanker  
having POOP, BRIDGE, & FORECASTLE

Port of Survey Barny

Date of Survey November 32

Name of Surveyor George R. Chappel

Particulars of Classification 100 A.1  
S.S. Bb 2nd No. 3 - 1,30

Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build
<u>ARMURU</u>	<u>SPANISH</u> <u>BILBAO</u>	<u>✓</u>	<u>2762</u> ✓	<u>1905, 4</u>

Moulded Dimensions: Length 319.0 Breadth 45.76 Depth 23.75  
Moulded displacement at moulded draught = 85 per cent. of moulded depth 6690 tons  
Coefficient of fineness for use with Tables .795

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth ... .. <u>23.75</u>	(a) Where D is greater than Table depth (D - Table depth) R = <u>(23.79 - 21.27) 2.454 = +6.18</u>	Moulded Breadth (B) <u>45.76</u> Standard Round of Beam = $\frac{B \times 12}{50} = 10.98$ Ship's Round of Beam = <u>11 1/4</u> ✓ Difference = <u>.27</u>
Stringer plate ... .. <u>.04</u>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R =	Restricted to
Sheathing on exposed deck $T \left( \frac{L-S}{L} \right) =$ ✓	If restricted by superstructures	Correction = $\frac{\text{Diff}^2}{4} \times \left( 1 - \frac{S_1}{L} \right) = \frac{.27^2}{4} \times .4992 = -.03$
Depth for Freeboard (D) = <u>23.79</u>		

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)	
Poop enclosed ...	<u>29'0"</u>	<u>29.00</u>	<u>7'3"</u>	✓	<u>29.00</u>	Standard Height of Superstructure <u>6.69</u>
" overhang ...	<u>3"</u>	<u>.12</u>		✓	<u>.12</u>	" " R.Q.D. ✓
R.Q.D. enclosed ...	✓		✓			Deduction for complete superstructure <u>36.60</u>
" overhang ...	✓		✓			Percentage covered $\frac{S}{L} = 50.31\%$
Bridge enclosed ...	<u>98'0"</u>	<u>98.00</u>		✓	<u>98.00</u>	" " $\frac{S_1}{L} = 50.08\%$
" overhang aft ...	<u>3"</u>	<u>.19</u>		✓	<u>.19</u>	" " $\frac{E}{L} = 50.08\%$
" overhang forward ...	<u>6"</u>	<u>.25</u>		✓	<u>.25</u>	Percentage from Table, Line A. ✓
Fore enclosed <u>Equival</u> ...	<u>31'12"</u>	<u>31.12</u>	<u>7'3"</u>	✓	<u>31.12</u>	(corrected for absence of forecastle (if required)) ✓
" overhang ...	<u>2'6"</u>	<u>1.08</u>		✓	<u>1.08</u>	Percentage from Table, Line B. <u>36.08%</u>
Trunk aft ...	✓		✓			(corrected for absence of forecastle (if required)) ✓
" forward ...	✓		✓			Interpolation for bridge less than 2L (if required) ✓
Tonnage opening aft ...	✓		✓			Deduction = <u>36.60</u> × <u>.3608</u> = <u>-13.20</u>
" " forward ...	✓		✓			
Total ...	<u>160.50</u>	<u>159.76</u>			<u>159.76</u>	

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P. ...	<u>41.90</u>	✓	1	<u>41.90</u>	<u>44.0</u>	<u>44.00</u>	✓	1	<u>44.00</u>	Mean actual sheer aft = <u>Def &gt; 75%</u>
1/2 L from A.P. ...	<u>18.64</u>	✓	4	<u>74.56</u>	<u>17.5</u>	<u>17.38</u>	✓	4	<u>69.52</u>	Mean actual sheer forward = <u>Excess</u>
1/4 L " ...	<u>4.61</u>	✓	2	<u>9.22</u>	<u>4.3</u>	<u>4.34</u>	✓	2	<u>8.68</u>	Mean standard sheer forward
Amidships ...	✓	✓	4	✓	✓	✓	✓	4	✓	Length of enclosed superstructure forward of amidships = <u>&gt; 1L</u>
1/2 L from F.P. ...	<u>9.22</u>	✓	2	<u>18.44</u>	<u>9.7</u>	<u>9.68</u>	✓	2	<u>19.36</u>	" " aft of " = <u>&gt; 1L</u>
1/4 L " ...	<u>37.29</u>	✓	4	<u>149.16</u>	<u>38.75</u>	<u>38.71</u>	✓	4	<u>154.84</u>	
F.P. ...	<u>83.80</u>	✓	1	<u>83.80</u>	<u>94.5</u>	<u>94.50</u>	✓	1	<u>94.50</u>	
Total ...				<u>377.08</u>					<u>390.90</u>	

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{13.82}{18} \times (.75 - .2515) = -.38$

If limited on account of midship superstructure. ✓ If limited to maximum allowance of 1 1/2 ins. per 100 ft. ✓

Deduction for Tropical Freeboard.	Deduction for Fresh Water.	TABULAR FREEBOARD corrected for Flush Deck (if required)	
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient $\frac{795 + .68}{1.36} = \frac{1475}{1.36}$	<u>48.15</u>
Depth to Freeboard Deck = <u>23.79</u>	Δ =	Depth Correction ... .. <u>6.18</u> ✓	<u>52.22</u>
Summer freeboard = <u>3.73</u>	Tons per inch immersion at summer load water line	Deduction for superstructures ... .. ✓ <u>13.20</u>	
Moulded draught (d) = <u>20.06</u>	T =	Sheer correction ... .. ✓ <u>.38</u>	
Deduction for Tropical freeboard and addition for	Deduction = $\frac{\Delta}{40T}$ inches	Round of Beam correction ... .. ✓ <u>.03</u>	
Winter freeboard = $\frac{d}{4}$ inches = <u>5.01</u> = <u>127 7/8</u>	= <u>5.01</u>	Correction for Thickness of Deck amidships ... .. ✓	
Addition for Winter North Atlantic Freeboard (if required) = <u>2</u> = <u>51 7/8</u>	= <u>127 7/8</u>	Other corrections, scantlings, etc. ... .. ✓	
		<u>6.18</u> <u>13.61</u> <u>-7.43</u>	
		Summer Freeboard = <u>44.79</u>	

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

Tropical Fresh Water Line above Centre of Disc	<u>10.02</u> = <u>254 7/8</u>	Tropical Fresh Water Freeboard ...	<u>34.77</u> = <u>884 7/8</u>
Fresh Water Line " "	<u>5.01</u> = <u>127 7/8</u>	Fresh Water " "	<u>39.78</u> = <u>1011 7/8</u>
Tropical Line " "	<u>5.01</u> = <u>127 7/8</u>	Tropical " "	<u>39.78</u> = <u>1011 7/8</u>
Winter Line below " "	<u>5.01</u> = <u>127 7/8</u>	Winter " "	<u>51.80</u> = <u>1265 7/8</u>
Winter North Atlantic Line " "	<u>7.01</u> = <u>178 7/8</u>	Winter North Atlantic " "	<u>51.80</u> = <u>1265 7/8</u>

8 NOV 1932

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10 NOV 1932

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# PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS							
FREEBOARD DECK				BUNKER H. POOP H.			
Description of Hatchway	No.1.	No.2.	BUNKER H.	No.3.	No.4.	BUNKER H.	POOP H.
Dimensions of Hatchway	22'x16'	24'x16'	10'x14'	24'x16'	22'x16'	10'x14'	8'x8'
COAMINGS	Height above Deck	36"	36"	18"	36"	36"	20"
	Thickness	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"
	Sides	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"
	Stiffeners	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"
HATCH BEAMS	Number	2	2	1	2	2	1
	Spacing	7'6"	8'0"	5'0"	8'0"	7'6"	5'0"
	Scantling and Sketch	3 1/2"x38"	3 1/2"x38"	1 1/2"x38"	3 1/2"x38"	3 1/2"x38"	1 1/2"x38"
	Bearing Surface	3"	3"	2"	3"	3"	2"
FORE AND AFTERS	Number	3	3	3	3	3	1
	Spacing	4'0"	4'0"	3'6"	4'0"	4'0"	4'0"
	Unsupported Lengths	7'6"	8'0"	5'0"	8'0"	7'6"	8'0"
	Scantling and Sketch	7 1/2"x7"	7 1/2"x7"	7 1/2"x7"	7 1/2"x7"	7 1/2"x7"	7 1/2"x7"
HATCH COVERS	Material	Wood	Wood	Wood	Wood	Wood	Wood
	Thickness	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"
	How fitted	Thrust	Thrust	Thrust	Thrust	Thrust	Thrust
	Bearing Surface	3"	3"	2"	3"	3"	3"
Spacing of Cleats	24"	24"	24"	24"	24"	24"	24"
Number of Tarpaulins	2	2	1	2	2	2	2

Particulars of fiddle, funnel and ventilator coamings:— E.R. skylights of steel strongly constructed, with hinged steel flaps, fitted with bullheads. Funnel ventilator coamings of sound construction. Fiddle gratings fitted with hinged steel storm plates.

Particulars of Flush Bunker Scuttles:— None.

Particulars of Companionways:— None.

Particulars of Ventilators in exposed positions on freeboard and superstructure decks:— On fore. dk. one 15" vent, coaming 30"x30". On fore. well. Three 15" vents, coaming 42"x32". On Bdg. dk. Two 6" goose neck vents. 1st of opening 10". On aft. well. Three 15" vents, coaming 42"x32". On Poop dk. one 8" vent, coaming 18"x20". Wood plugs & canvas covers supplied for closing.

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks:— Air pipes in exposed positions fitted flush with deck, & closed by means of screw caps or wood plugs.

Particulars of Gangway Cargo and Coaling Ports:— Port in ship's sides P.S. in bridge space. 18"x15" — 9" above dk. closed by steel hinged plate, & secured by two strongbacks.

Particulars of Scuppers and Sanitary Discharge Pipes — Scuppers from bridge space, discharge overboard below freeboard dk., fitted with storm valve on ship's side. Sanitary discharge pipes, discharge overboard below freeboard dk., fitted with storm valves on ship's side.

Particulars of Side Scuttles:— Side scuttles in accommodation in forecabin, of sound construction, fitted with hinged deadlights.

Particulars of Guard Rails:— On fore. 2 rails, height 39" 4'6" between stanchions. On bridge 3 rails, height 39" 4'0" between stanchions. On poop. 3 rails, height 40" 5'0" between stanchions. Bulwarks in wells as stated below.

Particulars of Gangways, Lifelines, etc.:— None. Suitable provision made for rigging lifelines available for use in any part of the ship which might be used by the crew in the regular working of the ship.

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	82'0"	4'0"	38"x20"	3.	15.85.5	16.2
Forward Well	78'0"	4'0"	38"x20"	3.	15.85.5	16.2

State position of each freeing port (F. and A. position and height above deck edge) After Well:— 12'6" — 37'6" — 74'6" 11" above dk. edge. Forward Well:— 9'0" — 26'0" — 63'0" 12" above dk. edge. State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— Fitted with 2 cross rails. Additional area where sheer is less than standard.

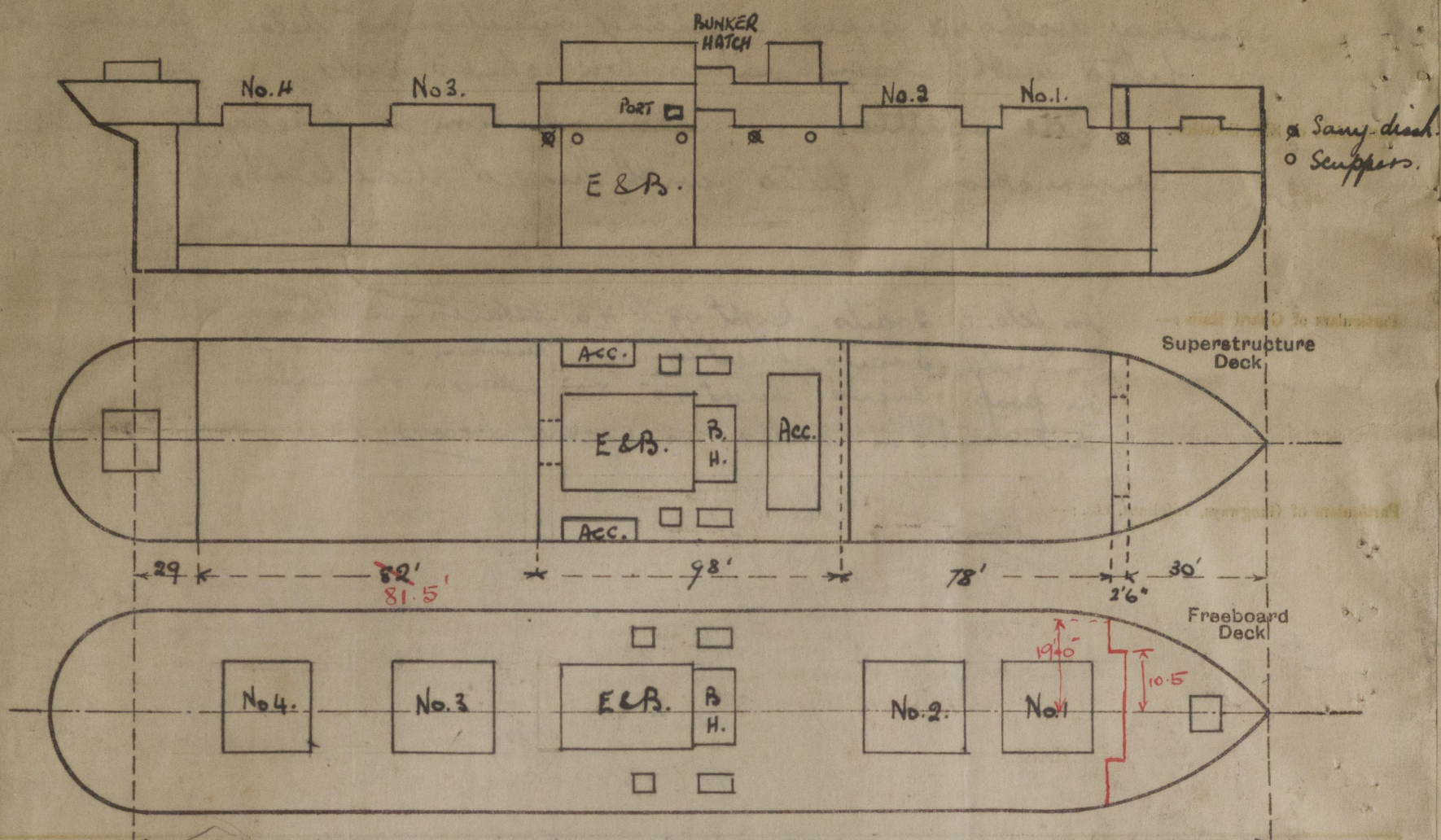
Particulars of Superstructures, Trunks, Casings, Deckhouses.								
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead	36"	34"	5x3 1/2" 0.45	30"	None.	3'6"x5'6"	24"	7'3"
Raised Quarter Deck Bulkhead	✓	✓	✓	✓	✓	✓	✓	✓
Bridge, After Bulkhead	32"	26"	3x3" 0.45	36"	None.	3'3"x4'9"	24"	7'3"
Bridge, Forward Bulkhead	38"	34"	7x3" 2	30"	Bkts. T & B.	None.	✓	7'3"
Forecabin Bulkhead	28"	26"	2 1/2"x2 1/2" 0.45	30"	None.	24"x4'8"	18"	7'3"
Trunk, Aft	✓	✓	✓	✓	✓	✓	✓	✓
Trunk, Forward	✓	✓	✓	✓	✓	✓	✓	✓
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	32"	28"	3x3" 0.45	24"	None.	None.	✓	7'3"
Exposed Machinery Casings on Superstructure Decks	32"	28"	3x3" 0.45	38"	None.	24"x4'8"	18"	7'3"
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	32"	28"	3 1/2"x3 1/2" 0.45	26"	None.	9'x4'9"	18"	7'3"
Deckhouses on Flush Deck Ships	✓	✓	✓	✓	✓	✓	✓	✓

Particulars of Closing Appliances (state if capable of being manipulated from both sides).	
Poop Bulkhead	3" Weather boards in riveted channels, full height.
Raised Quarter Deck Bulkhead	✓
Bridge, After Bulkhead	2 1/2" Weather boards in riveted channels, full height.
Bridge, Forward Bulkhead	✓
Forecabin Bulkhead	Hinged steel doors, locks man. bth. sides to acc. & bolts outside to lockers.
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	✓
Exposed Machinery Casings on Superstructure Decks	Hinged steel doors, locks man. bth. sides, or bolts outside.
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	Hinged steel doors, locks manipulated both sides, or bolts.
Deckhouses on Flush Deck Ships	✓

MS33-0042



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:—



Stone hatch in fore. 3'9" x 3'0". 13" coaming 2 1/2" covers thut. 1" rests cleats 32" battens at top.  
On bridge deck. Bunkers hatches P. & S. 6'0" x 3'0" and 3'9" x 3'0". 15" coaming. 2 1/2" covers thut. 1 1/4" rests cleats 20" battens 2 2" tanp. S.

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

In bridge space. Bunkers hatches P. & S. 6'0" x 3'0" and 5'6" x 3'0". 15" coaming. 3" rests cleats 20". ~~As 2 covers~~ battens ~~1/4" tanpaulin each~~  
Escape hatches 20" x 30", 3" coaming, 3" rests, 2 1/2" covers ~~one tanpaulin means of battening down efficient~~

#### Draught Scale.

Draft.	Draught Tons.	Tons/in
20' 1 3/4"	4570.	30.1 — 20'6"
19'0"	4160	30. — 19'6"
18'0"	3800	29.9 — 18'6"
17'0"	3440.	29.8 — 17'6"

Vessel measured in dry dock.

F.C.L.E.	LEN = 32.50
DED 10.5 x 2.5 = 19.0	1.38
	31.12
TP1 29.85	
28 x 29.95 = 839.	
	5885
	6720
	33
	6690

Builder's name and yard number.

Sir James Laing & Sons, Ltd. Sunderland.

Names of sister ships.

Owners.

Cia. Nav. Vascongada.

Fee £

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