

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

MAY 15 1971

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having Prop, Bridge and Deck

(Type of Superstructures.)

Port of Survey Cebu

Date of Survey February, 1941

Name of Surveyor R. Langlands

Particulars of Classification 100A1  
Contemplated  
Reclassification

Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build
"MANUEL CALVO"	Spanish Barcelona	✓	5617	1892-3

Moulded Dimensions: Length 127.745 Breadth 14.56 Depth 9.826

Moulded displacement at moulded draught = 85 per cent. of moulded depth 9.830 M. tons

Coefficient of fineness for use with Tables

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth ... .. <u>9.826</u>	(a) Where D is greater than Table depth (D - Table depth) R = <u>8.33 (9.843 - 8.514) 30 = +331</u>	Moulded Breadth (B) <u>14.56</u>
Stringer plate ... .. <u>.017</u>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R =	Standard Round of Beam = $\frac{B \times 12}{50} =$ <u>.3494</u>
Sheathing on exposed deck $T \left( \frac{L-S}{L} \right) =$ <u>.0889 (127.745 - 41.677)</u> <u>127.745 = 48</u>	If restricted by superstructures	Ship's Round of Beam = <u>.3048</u>
Depth for Freeboard (D) = <u>9.891</u>		Difference <u>.0446 less.</u>
		Restricted to
		Correction = $\frac{\text{Diff}}{4} \times \left( 1 - \frac{S_1}{L} \right) =$

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)	
Poop enclosed ... ..	<u>11.850</u>	<u>11.850</u>	<u>2.250</u>		<u>11.850</u>	Standard Height of Superstructure <u>2.286</u>
Poop overhang ... ..	<u>.210</u>	<u>.105</u>			<u>.105</u>	" " R.Q.D. <u>✓</u>
R.Q.D. enclosed <u>SIDEHD.</u>	<u>2.550</u>	<u>1.275</u>			<u>1.275</u>	Deduction for complete superstructure <u>1064</u>
" overhang ... ..						Percentage covered $\frac{S}{L} =$ <u>56.10</u>
Bridge enclosed ... ..	<u>42.540</u>	<u>42.540</u>	<u>2.438</u>		<u>42.540</u>	" " $\frac{S_1}{L} =$
" overhang aft ... ..	<u>.220</u>	<u>.110</u>			<u>.110</u>	" " $\frac{E}{L} =$
" overhang forward ... ..	<u>.210</u>	<u>.105</u>			<u>.105</u>	Percentage from Table, Line A.
F'cle enclosed ... ..	<u>14.292</u>	<u>14.292</u>	<u>2.315</u>		<u>14.292</u>	(corrected for absence of forecastle (if required))
" overhang ... ..	<u>.210</u>	<u>.105</u>			<u>.105</u>	Percentage from Table, Line B. <u>40.39%</u>
Trunk aft <u>SIDEHD.</u>	<u>2.530</u>	<u>1.265</u>			<u>1.265</u>	(corrected for absence of forecastle (if required))
" forward ... ..						Interpolation for bridge less than 2L (if required)
Tonnage opening aft ... ..						Deduction = <u>1064 × 40.39 = - 431</u>
" " forward						
Total ... ..	<u>74.640</u>	<u>71.677</u>			<u>71.677</u>	

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P. ... ..	<u>1318</u>	1		<u>1318</u>	<u>960</u>	<u>960</u>	1		<u>960</u>	Mean actual sheer aft = <u>Deficiency.</u>
$\frac{1}{4}$ L from A.P. ... ..	<u>585</u>	4		<u>2340</u>	<u>250</u>	<u>250</u>	4		<u>1000</u>	Mean actual sheer forward = <u>Excess.</u>
$\frac{3}{8}$ L " ... ..	<u>146</u>	2		<u>292</u>	<u>85</u>	<u>85</u>	2		<u>170</u>	Mean standard sheer forward
Amidships ... ..		4					4			Length of enclosed superstructure forward of amidships =
$\frac{3}{8}$ L from F.P. ... ..	<u>1292</u>	2		<u>584</u>	<u>418</u>	<u>418</u>	2		<u>836</u>	" " aft of " =
$\frac{1}{4}$ L " ... ..	<u>1171</u>	4		<u>4684</u>	<u>1045</u>	<u>1045</u>	4		<u>4180</u>	
F.P. ... ..	<u>2179</u>	1		<u>2179</u>	<u>2585</u>	<u>2585</u>	1		<u>2585</u>	
Total ... ..				<u>11394</u>					<u>9431</u>	

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( 75 - \frac{S}{2L} \right) =$  11394  
9431

If limited on account of midship superstructure.

$\frac{1616}{18} \left( .45 - \frac{71.677}{2 \times 127.745} \right) = + 43.45$

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

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck =

Summer freeboard =

Moulded draught (d) =

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

Addition for Winter North Atlantic Freeboard (if required) =

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta =$

Tons per inch immersion at summer load water line

T =

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

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

	+	-
Depth Correction ... ..		
Deduction for superstructures ... ..		
Sheer correction ... ..		
Round of Beam correction ... ..		
Correction for Thickness of Deck amidships		
Other corrections, scantlings, etc. ... ..		

Summer Freeboard =

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.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway	N°1.	N°2.	N°3.	N°4.					
Dimensions of Hatchway	6.520 m	6.230 x 4.250	7.620 x 3.940	6.340 x 3.620					
COAMINGS									
Height above Deck	1.660	1.100	1.100	1.100					
Thickness	11	11	11	11					
Stiffeners	2x 100 x 75 x 8	2x 100 x 75 x 8	2x 100 x 75 x 8	2x 100 x 75 x 8					
Brackets, Stays	2x 100 x 75 x 8	2x 100 x 75 x 8	2x 100 x 75 x 8	2x 100 x 75 x 8					
HATCH BEAMS									
Number	2	2	2	2					
Spacing	2.106	2.093	2.540	2.113					
Scantling and Sketch	CL 100 x 75 x 8	CL 100 x 75 x 8	CL 100 x 75 x 8	CL 100 x 75 x 8					
Bearing Surface	75	75	75	75					
FORE AND AFTERS									
Number	3	3	3	3					
Spacing	1.060	1.062	985	905					
Unsupported Lengths	2.132	2.019	2.466	2.039					
Scantling and Sketch	S. 125 x 125 x 10	S. 125 x 125 x 10	S. 140 x 140 x 10	S. 150 x 150 x 10					
Bearing Surface	75	75	75	75					
HATCH COVERS									
Material	2000	2000	2000	2000					
Thickness	60	60	60	60					
How fitted	134	134	134	134					
Bearing Surface	75	75	75	75					
Spacing of Cleats	865	825	810	760					
Number of Tarpaulins	3	3	3	3					
<p>*Are wood fore and afters steel shod at all bearing surfaces? YES.</p> <p>Are battens and wedges efficient and in good condition? YES.</p> <p>Are tarpaulins in good condition and in accordance with rule requirements? YES.</p> <p>Are lashings provided in accordance with rule requirements? YES.</p>									

Particulars of fiddle, funnel and ventilator coamings:—

Fiddle top on Bridge deck ✓  
 All openings have finger plate covers, ✓  
 permanently fixed.  
 F.R. skylight tunnel and vent coamings.

Particulars of Flush Bunker Scuttles:—

Bunker scuttles; from ports in sides of  
 Bridge, and hatches in Re. alleyways.

Particulars of Companionways:—

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

Exhaustions open on open  
 coamings on ft. dk. 1150 mm x 10 mm.  
 All plugs and canvas covers when  
 closed unslipped. ✓

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

As shown  
 higher wood plugs provided  
 closing appliances

Particulars of Gangway Cargo and Coaling Ports:— 3, In Bridge sides only.

Particulars

Particulars of Scuppers and Sanitary Discharge Pipes —

Scuppers above stanges, in sheathings,  
 etc. discharge from Fire Hoses & H. from  
 Bridge accommodation, with non  
 return valves.

Particulars of Side Scuttles:—

3 on each side in way of big. Room & Tank and one  
 in at the 4 ft. dk. and Re. 210 mm dia & 660 mm  
 from underside of ft. dk. to side of light.  
 fitted with efficient deadlights.

Particulars of Guard Rails:—

Stanchions 1.220 mm high 45 mm dia at top  
 and 50 mm at ftm. Poles in  
 mainway.  
 1 Top rail 50 mm + 3 @ 30 mm. ✓

Particulars of Gangways, Lifelines, etc.:—

Lifelines provided  
 in accordance with rules.

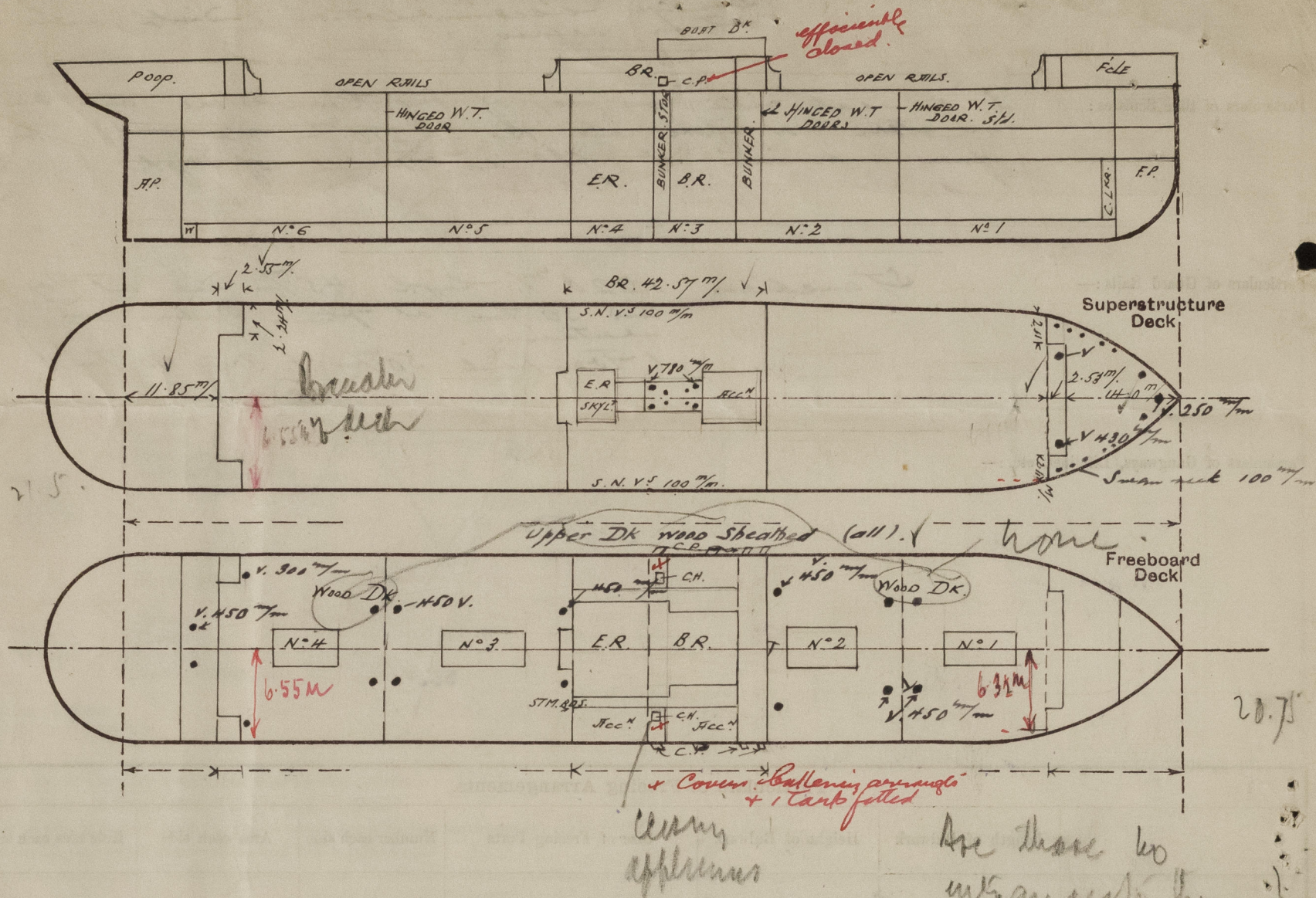
Particulars of Freeing Arrangements.						
	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
After Well			Open ✓ rails and stanchions			
Forward Well						
<p>State position of each freeing port ... After Well:—          (F. and A. position and height above deck edge) Forward Well:—          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.</p>						

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	560 mm	9.5 mm	140 x 90 x 11.5	820 mm	Ang. Lgs.	1450 x 635	560 mm	✓
Raised Quarter Deck Bulkhead	11.5 mm	✓	11.5 mm	✓	✓	✓	✓	✓
Bridge, After Bulkhead	10 mm	10 mm	110 x 75 x 8	620	✓	950 mm	✓	✓
Bridge, Forward Bulkhead	11.5 mm	11.5 mm	522 x 76 x 9.5	450	Re. 11.5	1450 x 915	615 mm	✓
Forecastle Bulkhead	10 mm	9.5 mm	100 x 65 x 8	660	Re. 11.5	1510 x 635	540 mm	✓
Trunk, Aft	✓	✓	✓	✓	✓	✓	✓	✓
Trunk, Forward	✓	✓	✓	✓	✓	✓	✓	✓
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	✓	✓	✓	✓	✓	✓	✓	✓
Exposed Machinery Casings on Superstructure Decks	9	9	75 x 75 x 9	930	Re. 11.5	✓	✓	✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	✓	9	75 x 75 x 9	930	✓	✓	✓	✓
Deckhouses on Flush Deck Ships	✓	✓	✓	✓	✓	✓	✓	✓

Particulars of Closing Appliances (state if capable of being manipulated from both sides).	
Poop Bulkhead	2 wood doors ✓
Raised Quarter Deck Bulkhead	✓
Bridge, After Bulkhead	Steel doors, full height in winter channels
Bridge, Forward Bulkhead	Hinged steel watertight (or weathertight) doors.
Forecastle Bulkhead	wood doors
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	✓
Exposed Machinery Casings on Superstructure Decks	✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	✓
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 shewn on the following sketches:—



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

*Kindly wire assignment of freeboard as soon as possible*

*Pooh equivalent bulk head*

$$\frac{2.55 \times 2.24}{6.55} = \frac{.87}{11.85}$$

*Equiv length = 12.72 m*

*Forecastle equiv. bulk head*

$$\frac{2.53 \times 2.11}{6.32} = \frac{.85}{14.00}$$

*Equiv length = 14.85*

$$\frac{2.53}{.85}$$

*1.68 equiv overhang*

Builder's name and yard number

*Armstrong, Mitchell & Co. Ltd. N° 573*

Names of sister ships

Owners

*Cia Transatlantica, Administracao P.O. de Petrol.*

Fee

*700*

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