

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name <b>MANUEL CALVO</b>	Official Number	Nationality and Port of Registry <b>Spanish, Barcelona</b>	Gross Tonnage <b>5617</b>	Date of Build <b>1892 3 mo.</b>	Port of Survey <b>Cadiz</b>
Moulded Dimensions: Length <b>128.00 m</b> Breadth <b>14.56 m</b> Depth <b>9.830 m</b>					Date of Survey <b>February 1941</b>
Moulded displacement at moulded draught = 85 per cent. of moulded depth tons					Surveyor's Signature <b>R. Langlands</b>
Coefficient of fineness for use with Tables <b>.78 assumed</b>					Particulars of Classification <b>100A1 uncomplicated no classification</b>
Depth for Freeboard (D).		Depth correction.		Round of Beam correction.	
Moulded depth ... .. <b>9.830</b>		(a) Where D is greater than Table depth (D - Table depth) R = <b>8.93(9.847 - 8.533)30 = +328 m/m</b> <b>1.314</b>		Moulded Breadth (B) <b>14.56 m</b>	
Stringer plate ... .. <b>.017</b>		(b) Where D is less than Table depth (if allowed) (Table depth - D) R = <b>✓</b>		Standard Round of Beam = $\frac{B \times 12}{50}$ = <b>291 m/m</b>	
Sheathing on exposed deck T $\left(\frac{L-S}{L}\right)$ = <b>✓</b>		If restricted by superstructures <b>✓</b>		Ship's Round of Beam = <b>305</b>	
Depth for Freeboard (D) = <b>9.847</b>				Difference <b>4 m/m</b> <b>14 m/m</b>	
				Restricted to	
				Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L}\right)$ = $\frac{14}{4} \times 433 = -2 m/m$	

### DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height m/m	Height Correction	Effective Length (E)	
Poop enclosed <b>Equiv.</b>	<b>12.72</b>	<b>12.72</b>	<b>2134</b>	<b>2134/2290</b>	<b>11.85</b>	Standard Height of Superstructure <b>2.290 m</b>
„ overhang ...						„ „ R.Q.D. <b>✓</b>
R.Q.D. enclosed						Deduction for complete superstructure <b>1067 m/m</b>
„ overhang						Percentage covered $\frac{S}{L}$ = <b>56.45</b>
Bridge enclosed...	<b>42.57</b>	<b>42.57</b>	<b>2290</b>	<b>✓</b>	<b>42.57</b>	$\frac{S_1}{L}$ = <b>55.67</b>
„ overhang aft	<b>.22</b>	<b>.17</b>			<b>.17</b>	$\frac{E}{L}$ = <b>54.16</b>
„ overhang forward	<b>.21</b>	<b>.11</b>			<b>.11</b>	Percentage from Table, Line A. <b>✓</b>
Fore enclosed <b>Equiv.</b>	<b>14.85</b>	<b>14.85</b>	<b>2134</b>	<b>2134/2290</b>	<b>13.84</b>	(corrected for absence of forecastle (if required)) <b>✓</b>
„ overhang <b>equiv.</b>	<b>1.68</b>	<b>.84</b>			<b>.78</b>	Percentage from Table, Line B. <b>40.16</b>
Trunk aft						(corrected for absence of forecastle (if required)) <b>✓</b>
„ forward						Interpolation for bridge less than 2L (if required) <b>✓</b>
Tonnage opening aft						Deduction = <b>1067 x .4016 = 428 m/m</b>
„ forward						
Total	<b>72.25</b>	<b>71.26</b>			<b>69.32</b>	

### SHEER CORRECTION.

Station	Standard Ordinate m/m	S	Product	Actual Ordinate m/m	Effective Ordinate	S	Product	
A.P. ...	<b>1320</b>	<b>1</b>	<b>1320</b>	<b>762</b>	<b>762</b>	<b>1</b>	<b>762</b>	Mean actual sheer aft = <b>less than 50%</b>
$\frac{1}{8}$ L from A.P. ...	<b>587</b>	<b>4</b>	<b>2348</b>	<b>203</b>	<b>203</b>	<b>4</b>	<b>812</b>	Mean actual sheer forward = <b>Deficient</b>
$\frac{3}{8}$ L „ ...	<b>147</b>	<b>2</b>	<b>294</b>	-	-	<b>2</b>	-	Mean standard sheer forward
Amidships ...	-	<b>4</b>	-	-	-	<b>4</b>	-	Length of enclosed superstructure forward of amidships =
$\frac{5}{8}$ L from F.P. ...	<b>293</b>	<b>2</b>	<b>586</b>	<b>317</b>	<b>317</b>	<b>2</b>	<b>634</b>	L
$\frac{7}{8}$ L „ ...	<b>1173</b>	<b>4</b>	<b>4692</b>	<b>1029</b>	<b>1029</b>	<b>4</b>	<b>4116</b>	Aft sheer
F.P. ...	<b>2640</b>	<b>1</b>	<b>2640</b>	<b>2692</b>	<b>2692</b>	<b>1</b>	<b>2692</b>	Stand. Actual
Total			<b>11880</b>				<b>9016</b>	1320-1 1320-762-1 762- 587-3 1761-203-3 609- 147-2 441-1 1371- 3522- 4678- 7038- 6730
Correction = $\frac{\text{Difference between sums of products}}{18} \left(75 - \frac{S}{2L}\right)$ = $\frac{2864 \times (75 - .1822)}{18} = +74 m/m$								Forward sheer
If limited on account of midship superstructure. <b>✓</b>								If limited to maximum allowance of $1\frac{1}{2}$ ins. per 100 ft. <b>✓</b>

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 <b>.78 + .68 = 1.46/1.36</b>
Depth to Freeboard Deck = <b>9.847</b>	$\Delta$ =	Depth Correction ... .. <b>328</b>
Summer freeboard = <b>2.690</b>	Tons per inch immersion at summer load water line	Deduction for superstructures ... .. <b>428</b>
Moulded draught (d) = <b>7.757</b>	T =	Sheer correction ... .. <b>74</b>
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{48}$ inches = <b>162 m/m</b>	Deduction = $\frac{\Delta}{40 T}$ inches <b>d = 162 m/m</b>	Round of Beam correction ... .. <b>2</b>
Addition for Winter North Atlantic Freeboard (if required) =		Correction for Thickness of Deck amidships ... .. <b>-</b>
		Other corrections, scantlings, etc. ... .. <b>-</b>
		Summer Freeboard = <b>2090</b>

### SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line

	Wood	Steel	Deck
Tropical Fresh Water Line above Centre of Disc	<b>324 m/m</b>	<b>1766</b>	<b>1928</b>
Fresh Water Line	<b>162</b>	<b>1928</b>	<b>1928</b>
Tropical Line	<b>162</b>	<b>1928</b>	<b>1928</b>
Winter Line below	<b>162</b>	<b>1928</b>	<b>1928</b>
Winter North Atlantic	<b>162</b>	<b>1928</b>	<b>1928</b>