

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, ~~Sailing Ship, Tanker~~  
having fric. Podge. Raised Gun Deck.

(Type of Superstructures.)

Ship's Name <b>"SILVA GOUVEIA"</b>	Nationality and Port of Registry <b>Portuguese Lisbon.</b>	Official Number <b>560 F.</b>	Gross Tonnage <b>892.54</b>	Date of Build <b>1921.</b>
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Moulded Dimensions: Length **63.830.** Breadth **9.400.** Depth **4.650.**  
Moulded displacement at moulded draught = 85 per cent. of moulded depth tons  
Coefficient of fineness for use with Tables **.76 (Calculated from Underdeck tonnage)**

Port of Survey Lisbon.  
Date of Survey July 1938  
Name of Surveyor As. Pusk.  
Particulars of Classification Contemplated 100A.

<p>Depth for Freeboard (D)</p> <p>Moulded depth ... .. <b>4.650</b></p> <p>Stringer plate ... .. <b>.010</b></p> <p>Sheathing on exposed deck <math>T \left( \frac{L-S}{L} \right) =</math> <input checked="" type="checkbox"/></p> <p>Depth for Freeboard (D) = <b>4.660</b></p>	<p>Depth correction</p> <p>(a) Where D is greater than Table depth (D - Table depth) R = <math>8.33 (4.660 - 4.255) 16.12 = +54 \text{ m}</math></p> <p>(b) Where D is less than Table depth (if allowed) (Table depth - D) R = <input checked="" type="checkbox"/></p> <p>If restricted by superstructures <input checked="" type="checkbox"/></p>	<p>Round of Beam correction</p> <p>Moulded Breadth (B) <b>9.400</b></p> <p>Standard Round of Beam = <math>\frac{B \times 100}{50} =</math> <b>194</b></p> <p>Ship's Round of Beam = <b>200</b></p> <p>Difference = <b>Excess</b> = <b>6</b></p> <p>Restricted to</p> <p>Correction = <math>\frac{\text{Diff}^2}{4} \times \left( 1 - \frac{S_1}{L} \right) = \frac{6^2}{4} \times 3.116 = 28.5</math></p>
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### DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ... ..					
" overhang ... ..					
R.Q.D. enclosed ... ..	<b>19.380</b>	<b>19.380</b>	<b>1.120</b>	<b>1136</b>	<b>19106</b>
" overhang ... ..					
Bridge enclosed ... ..	<b>14.100</b>	<b>16.490</b>	<b>2.130</b>		<b>16490</b>
" overhang aft ... ..					
" overhang forward ... ..					
Fore enclosed <i>Equit.</i> ... ..	<b>7.460</b>	<b>7.956</b>	<b>2.200</b>		<b>7956</b>
" overhang <i>overhang</i> ... ..	<b>.165</b>				
Trunk aft ... ..					
" forward ... ..					
Tonnage opening aft ... ..					
" forward ... ..					
Total ... ..	<b>44.671</b>	<b>43.944</b>			<b>43670</b>

Standard Height of Superstructure **1830 m**

" " R.Q.D. **1136 m**

Deduction for complete superstructure **685 m**

Percentage covered  $\frac{S}{L} = 69.98$

" "  $\frac{S_1}{L} = 68.84$

" "  $\frac{E}{L} = 68.42$

Percentage from Table, Line A. **60.31**  
(corrected for absence of forecastle (if required))

Percentage from Table, Line B. ☒  
(corrected for absence of forecastle (if required))

Interpolation for bridge less than 2L (if required)

Deduction =  $685 \times 60.31 = -413 \text{ m}$

### SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ... ..	<b>486</b>	1		<b>786</b>	<b>830</b>	<b>830</b>	1		<b>830</b>
$\frac{1}{2}$ L from A.P. ... ..	<b>349</b>	4		<b>1396</b>	<b>375</b>	<b>375</b>	4		<b>1500</b>
$\frac{2}{3}$ L " ... ..	<b>84</b>	2		<b>174</b>	<b>80</b>	<b>80</b>	2		<b>160</b>
Amidships ... ..	<b>-</b>	4		<b>00</b>	<b>-</b>	<b>-</b>	4		<b>-</b>
$\frac{2}{3}$ L from F.P. ... ..	<b>145</b>	2		<b>350</b>	<b>342</b>	<b>342</b>	2		<b>684</b>
$\frac{1}{2}$ L " ... ..	<b>698</b>	4		<b>2792</b>	<b>995</b>	<b>995</b>	4		<b>3980</b>
F.P. ... ..	<b>1541</b>	1		<b>1571</b>	<b>2105</b>	<b>2105</b>	1		<b>2105</b>
Total ... ..				<b>7069</b>					<b>9259</b>

Mean actual sheer aft = **Excess**

Mean standard sheer aft = **Excess**

Mean actual sheer forward = **Excess**

Mean standard sheer forward = **Excess**

Length of enclosed superstructure forward of amidships = **.071L**

" " aft of " = **.71L**

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{2190}{18} \left( .75 - \frac{3499}{4001} \right) = -49 \text{ m}$

If limited on account of midship superstructure.  $\frac{.171 \times 490}{.20} = -42 \text{ m}$  If limited to maximum allowance of  $1\frac{1}{2}$  ins. per 100 ft. ☒

<p>Deduction for Tropical Freeboard.</p> <p>Addition for Winter and Winter North Atlantic Freeboard.</p> <p>Depth to Freeboard Deck = <b>4.660</b></p> <p>Summer freeboard = <b>.263</b></p> <p>Moulded draught (d) = <b>4.397</b></p> <p>Deduction for Tropical freeboard and addition for Winter freeboard = <math>\frac{d}{48} = 92 \text{ m}</math></p> <p>Addition for Winter North Atlantic Freeboard (required) = <math>92 + 50 = 142 \text{ m}</math></p>	<p>Deduction for Fresh Water.</p> <p>Displacement in salt water at summer load water line</p> <p><math>\Delta =</math></p> <p>Tons per inch immersion at summer load water line</p> <p>T =</p> <p>Deduction = <math>\frac{\Delta}{40 T}</math> inches</p> <p><math>\frac{1}{4} = 92 \text{ m}</math></p>	<p>TABULAR FREEBOARD corrected for Flush Deck (if required)</p> <p>Correction for coefficient <math>\frac{.76 + .68}{1.36} = \frac{1.44}{1.36}</math></p> <table border="1"> <tr> <th></th> <th>+</th> <th>-</th> </tr> <tr> <td>Depth Correction ... ..</td> <td><b>54</b></td> <td></td> </tr> <tr> <td>Deduction for superstructures ... ..</td> <td></td> <td><b>413</b></td> </tr> <tr> <td>Sheer correction ... ..</td> <td></td> <td><b>42</b></td> </tr> <tr> <td>Round of Beam correction ... ..</td> <td></td> <td></td> </tr> <tr> <td>Correction for Thickness of Deck amidships</td> <td></td> <td></td> </tr> <tr> <td>Other corrections, scantlings, etc. ... ..</td> <td></td> <td></td> </tr> <tr> <td></td> <td><b>54</b></td> <td><b>455</b></td> </tr> </table> <p>Summer Freeboard = <b>263 m</b></p>		+	-	Depth Correction ... ..	<b>54</b>		Deduction for superstructures ... ..		<b>413</b>	Sheer correction ... ..		<b>42</b>	Round of Beam correction ... ..			Correction for Thickness of Deck amidships			Other corrections, scantlings, etc. ... ..				<b>54</b>	<b>455</b>
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### SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, ~~Wood~~ Steel, Deck:

Tropical Fresh Water Line above Centre of Disc ... ..	<b>184 m</b>	Tropical Fresh Water Freeboard ... ..	<b>179</b>
Fresh Water Line " " ... ..	<b>92</b>	Fresh Water " " ... ..	<b>171</b>
Tropical Line " " ... ..	<b>92</b>	Tropical " " ... ..	<b>355</b>
Winter Line below " " ... ..	<b>92</b>	Winter " " ... ..	<b>405</b>
Winter North Atlantic Line " " ... ..	<b>142</b>	Winter North Atlantic " " ... ..	<b>405</b>

12 AUG 1938



# PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway	...	...	...	...	...	...	...	...	...
Dimensions of Hatchway	...	...	...	...	...	...	...	...	...
COAMINGS	Height above Deck	...	...	...	...	...	...	...	...
	Thickness	...	...	...	...	...	...	...	...
	Stiffeners	...	...	...	...	...	...	...	...
	Brackets, Stays	...	...	...	...	...	...	...	...
HATCH BEAMS	Number	...	...	...	...	...	...	...	...
	Spacing	...	...	...	...	...	...	...	...
	Scantling and Sketch	...	...	...	...	...	...	...	...
	Bearing Surface	...	...	...	...	...	...	...	...
FORE AND AFTERS	Number	...	...	...	...	...	...	...	...
	Spacing	...	...	...	...	...	...	...	...
	Unsupported Lengths	...	...	...	...	...	...	...	...
	Scantling and Sketch	...	...	...	...	...	...	...	...
HATCH COVERS	Material	...	...	...	...	...	...	...	...
	Thickness	...	...	...	...	...	...	...	...
	How fitted	...	...	...	...	...	...	...	...
	Bearing Surface	...	...	...	...	...	...	...	...
Spacing of Cleats	...	...	...	...	...	...	...	...	...
Number of Tarpaulins	...	...	...	...	...	...	...	...	...

Particulars of fiddle, funnel and ventilator coamings:—

Fiddle on Boat deck.  
Openings fitted with hinged steel covers permanently attached.

Particulars of Flush Bunker Scuttles:—

none fitted

Particulars of Companionways:—

none fitted

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

fitted in positions shown on sketch overlaid.  
G. I. plugs & canvas covers supplied.

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

Air pipes well protected by bulwarks.  
G. I. pipes 80 mm dia. 900 mm ht.  
Wood plugs for closing same provided, also canvas covers.

Particulars of Gangway Cargo and Coaling Ports:—

none fitted

Particulars of Scuppers and Sanitary Discharge Pipes:—

none fitted draining spaces below freeboard in Raised Quarter Decks.  
Scuppers from Bridge space drain to E.R. bilges P & S.

Particulars of Side Scuttles:—

Substantially constructed & fitted with hinged deadlights.

Particulars of Guard Rails:—

fitted on both decks only.  
1100 mm ht. 3 rails. 32 mm. 19 mm. 19 mm.

Particulars of Gangways, Lifelines, etc.:—

Lifelines provided in forward well.

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	19.380	1.220.	800 x 385.	4	1.232 m <sup>2</sup>	1.199 m <sup>2</sup>
Forward Well	18.345	1.220.	800 x 385.	4	1.232 m <sup>2</sup>	1.163 m <sup>2</sup>

State position of each freeing port ... After Well:—  
(F. and A. position and height above deck edge) Forward Well:— as shown on sketch overlaid.  
State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— One 25 mm rod fitted

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	...	...	...	...	...	...	...	...
Raised Quarter Deck Bulkhead	...	...	...	...	...	...	...	...
Bridge, After Bulkhead	...	...	...	...	...	...	...	...
Bridge, Forward Bulkhead	...	...	...	...	...	...	...	...
Forecastle Bulkhead	...	...	...	...	...	...	...	...
Trunk, Aft	...	...	...	...	...	...	...	...
Trunk, Forward	...	...	...	...	...	...	...	...
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	...	...	...	...	...	...	...	...

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

Poop Bulkhead	...	...	...	...	...	...	...	...
Raised Quarter Deck Bulkhead	...	...	...	...	...	...	...	...
Bridge, After Bulkhead	...	...	...	...	...	...	...	...
Bridge, Forward Bulkhead	...	...	...	...	...	...	...	...
Forecastle Bulkhead	...	...	...	...	...	...	...	...
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	...	...	...	...	...	...	...	...



The drawing is a hand-drawn technical sketch of a ship's hull cross-section, showing two main decks: the Superstructure Deck and the Freeboard Deck.

**Superstructure Deck:**

- Layout:** The deck is divided into several sections. From left to right, there is an "AFT PEAK", a "HOLD", "E & B ROOMS", another "HOLD", and a "FORD PEAK".
- Dimensions:** Horizontal dimensions are marked along the top edge: 2.075, 3.780, 2.640, 2.500, 12.500, 4.560 (with a red "600" above it), 1.610, 2.380, 3.780, and 2.715. A vertical dimension of 12.500 is also indicated.
- Hatches and Openings:**
  - A "HATCH" is located near the aft peak, with a "STORE" below it. Dimensions: dia. 250", ht. 320", blk. 7".
  - A "No. 2 HATCH" is located in the first hold.
  - A "COAL HATCH" is located in the "E & B ROOMS".
  - A "No. 1 HATCH" is located near the ford peak.
- Structural Details:**
  - Vertical stiffeners are labeled "V-1", "V-2", "V-3", "V-4", "V-5", "V-6", "V-7", "V-8", "V-9", "V-10", "V-11", "V-12", "V-13", "V-14", "V-15", "V-16", "V-17", "V-18", "V-19", "V-20", "V-21", "V-22", "V-23", "V-24", "V-25", "V-26", "V-27", "V-28", "V-29", "V-30", "V-31", "V-32", "V-33", "V-34", "V-35", "V-36", "V-37", "V-38", "V-39", "V-40", "V-41", "V-42", "V-43", "V-44", "V-45", "V-46", "V-47", "V-48", "V-49", "V-50", "V-51", "V-52", "V-53", "V-54", "V-55", "V-56", "V-57", "V-58", "V-59", "V-60", "V-61", "V-62", "V-63", "V-64", "V-65", "V-66", "V-67", "V-68", "V-69", "V-70", "V-71", "V-72", "V-73", "V-74", "V-75", "V-76", "V-77", "V-78", "V-79", "V-80", "V-81", "V-82", "V-83", "V-84", "V-85", "V-86", "V-87", "V-88", "V-89", "V-90", "V-91", "V-92", "V-93", "V-94", "V-95", "V-96", "V-97", "V-98", "V-99", "V-100".
  - Horizontal stiffeners are labeled "H-1", "H-2", "H-3", "H-4", "H-5", "H-6", "H-7", "H-8", "H-9", "H-10", "H-11", "H-12", "H-13", "H-14", "H-15", "H-16", "H-17", "H-18", "H-19", "H-20", "H-21", "H-22", "H-23", "H-24", "H-25", "H-26", "H-27", "H-28", "H-29", "H-30", "H-31", "H-32", "H-33", "H-34", "H-35", "H-36", "H-37", "H-38", "H-39", "H-40", "H-41", "H-42", "H-43", "H-44", "H-45", "H-46", "H-47", "H-48", "H-49", "H-50", "H-51", "H-52", "H-53", "H-54", "H-55", "H-56", "H-57", "H-58", "H-59", "H-60", "H-61", "H-62", "H-63", "H-64", "H-65", "H-66", "H-67", "H-68", "H-69", "H-70", "H-71", "H-72", "H-73", "H-74", "H-75", "H-76", "H-77", "H-78", "H-79", "H-80", "H-81", "H-82", "H-83", "H-84", "H-85", "H-86", "H-87", "H-88", "H-89", "H-90", "H-91", "H-92", "H-93", "H-94", "H-95", "H-96", "H-97", "H-98", "H-99", "H-100".

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- Layout:** The deck is divided into several sections. From left to right, there is an "AFT PEAK", a "HOLD", "E & B ROOMS", another "HOLD", and a "FORD PEAK".
- Dimensions:** Horizontal dimensions are marked along the top edge: 2.075, 3.780, 2.640, 2.500, 12.500, 4.560 (with a red "600" above it), 1.610, 2.380, 3.780, and 2.715. A vertical dimension of 12.500 is also indicated.
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Allowed Length of Bridge  
Percentage length of Bridge + R.R. Dh. =  $\frac{36.48}{63.83} = 57.15\%$   
 $\frac{0.75}{20} \times \frac{10}{1} = 3.5\% \therefore$  Allowed length of bridge =  $46.48\%$

Vessel measured in dry dock, whilst undergoing survey for classification

Vessel has an International Freeboard Certificate issued by the Portuguese Government, which expired in April. This certificate gives a summer freeboard 0.346 m.  
tropical. 0.256 m.  
winter 0.436 m.  
winter N. A. 0.487 m.  
F. W. allowance. 0.090 m.

No particulars of displacement in time per ms available.

Builder's name and yard number Schiff. S.W. (V. J. & Sch) A. G.

Names of sister ships \_\_\_\_\_

Owners Soc. Genl de Comercio Industrial e Transportes Ltd.

Fee £ \_\_\_\_\_ Received by me \_\_\_\_\_