

AMENDED COMPUTATION

Rpt. C.11 (Comp.).

ACONCAGUA 35548
IMPERIAL 35638

Lloyd's Register of Shipping.

Index. No. 35436
(For London Office only).

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name "COPIAPO"	Official Number	Nationality and Port of Registry <i>Chilian</i> <i>Valparaiso</i>	Gross Tonnage	Date of Build <i>1937</i>	Port of Survey
Moulded Dimensions: Length <i>410.00'</i> Breadth <i>58.00'</i> Depth <i>33.75'</i>					Date of Survey <i>19.7.38</i>
Moulded displacement at moulded draught = 85 per cent. of moulded depth <i>13742</i> tons					Surveyor's Signature
Coefficient of fineness for use with Tables <i>.705</i>					Particulars of Classification <i>+ 100 A1</i> <i>with freeboard.</i>

Depth for Freeboard (D).	Depth correction.	Round of Beam correction.
Moulded depth <i>33.75</i>	(a) Where D is greater than Table depth (D - Table depth) R = <i>(33.93 - 27.33) 3 = + 19.80"</i>	Moulded Breadth (B) <i>58.00'</i>
Stringer plate <i>.04</i>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = <i>6.60</i>	Standard Round of Beam = $\frac{B \times 12}{50} = 13.92$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) = \frac{2.48}{12} \times .7028 = .14$	If restricted by superstructures	Ship's Round of Beam = <i>5.90</i>
Depth for Freeboard (D) = <i>33.93</i>		Difference <i>8.02</i>
		Restricted to
		Correction = $\frac{\text{Diff}^*}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{8.02}{4} \times \left(\frac{747}{82} \right) = + 1.50"$

DEDUCTION FOR SUPERSTRUCTURES.

Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed <i>42.78</i>	<i>42.78</i>	<i>7.5</i>		<i>42.78</i>
„ overhang				
R.Q.D. enclosed				
„ overhang				
Bridge enclosed <i>OPEN</i> <i>35.93</i>	<i>17.96</i>	<i>8.01</i>		<i>17.96</i>
„ overhang aft				
„ overhang forward				
Fore enclosed <i>42.81</i>	<i>42.81</i>	<i>8.01</i>		<i>42.81</i>
„ overhang <i>.33</i>	<i>.17</i>			<i>.17</i>
Trunk aft				
„ forward				
Tonnage opening aft				
„ „ forward				
Total <i>121.85</i>	<i>103.72</i>			<i>103.72</i>

Standard Height of Superstructure <i>7.50'</i>	
„ „ R.Q.D. <i>✓</i>	
Deduction for complete superstructure <i>42.00"</i>	
Percentage covered $\frac{S}{L} = 29.72$	
„ „ $\frac{S_1}{L} = 25.30$	
„ „ $\frac{E}{L} = 25.30$	
Percentage from Table, Line A. <i>12.65</i>	
(corrected for absence of fore-castle (if required))	
Percentage from Table, Line B. <i>16.04</i>	
(corrected for absence of fore-castle (if required))	
Interpolation for bridge less than 2L (if required) <i>12.65 + (3.39 × $\frac{17.96}{82}$) = 13.39</i>	
Deduction = <i>42 × 1.339 = - 5.62"</i>	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	<i>51.00</i>	<i>1</i>		<i>51.00</i>	<i>50.99</i>	<i>50.99</i>	<i>1</i>		<i>50.99</i>
$\frac{1}{2}$ L from A.P.	<i>22.695</i>	<i>4</i>		<i>90.78</i>	<i>22.64</i>	<i>22.64</i>	<i>4</i>		<i>90.56</i>
$\frac{3}{4}$ L „	<i>5.61</i>	<i>2</i>		<i>11.22</i>	<i>5.71</i>	<i>5.71</i>	<i>2</i>		<i>11.42</i>
Amidships		<i>4</i>					<i>4</i>		
$\frac{3}{4}$ L from F.P.	<i>11.22</i>	<i>2</i>		<i>22.44</i>	<i>11.42</i>	<i>11.42</i>	<i>2</i>		<i>22.84</i>
$\frac{1}{2}$ L „	<i>45.39</i>	<i>4</i>		<i>181.56</i>	<i>45.28</i>	<i>45.28</i>	<i>4</i>		<i>181.12</i>
F.P.	<i>102.00</i>	<i>1</i>		<i>102.00</i>	<i>101.97</i>	<i>101.97</i>	<i>1</i>		<i>101.97</i>
Total				<i>459.00</i>					<i>458.90</i>

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - S}{2L} \right) = \frac{.10}{18} \left(\frac{.75 - .1486}{.6014} \right) = \text{Negligible}$
If limited on account of midship superstructure.

Mean actual sheer aft =
Mean standard sheer aft = } *Standard*

Mean actual sheer forward =
Mean standard sheer forward = }

Length of enclosed superstructure forward of amidships =
L

„ „ aft of „ = } *Kil.*

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

Deduction for Tropical Freeboard.	Deduction for Fresh Water.	TABULAR FREEBOARD corrected for Flush Deck (if required)	<i>74.60</i>
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient $\frac{.705 + .68}{1.36} = \frac{1.385}{1.36}$	<i>75.97</i>
Depth to Freeboard Deck = <i>34.00</i>	$\Delta = 11000$	Depth Correction <i>19.80</i>	
Summer freeboard = <i>10.50</i>	Tons per inch immersion at summer load water line	Deduction for superstructures <i>5.62</i>	<i>87.8</i>
Moulded draught (d) = <i>23.50</i>	T = <i>44.50</i>	Sheer correction <i>-</i>	<i>20.7.38</i>
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <i>5.875 = 149mm</i>	Deduction = $\frac{\Delta}{40T}$ inches = <i>6.18</i>	Round of Beam correction <i>1.50</i>	
Addition for Winter North Atlantic Freeboard (if required) = <i>✓</i>	= <i>157mm</i>	Correction for Thickness of Deck amidships <i>.80</i>	
		Other corrections, scantlings, etc. AND TO CORRESPOND TO A SUMMER MOULDED DRAUGHT OF 23'6"	<i>33.55</i>
			<i>55.65 5.62 + 50.03</i>
			Summer Freeboard = <i>126.00</i>

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

Tropical Fresh Water Line above Centre of Disc <i>306mm</i>	Tropical Fresh Water Freeboard <i>2894</i>
Fresh Water Line „ „ <i>157</i>	Fresh Water „ „ <i>3043</i>
Tropical Line „ „ <i>149</i>	Tropical „ „ <i>3051</i>
Winter Line below „ „ <i>149</i>	Winter „ „ <i>3349</i>
Winter North Atlantic Line „ „	Winter North Atlantic „ „

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