

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

27 AUG 1934

11.346

Computation of Freeboard for Steamer, ~~Sailing Ship, Tanker~~
having Poop, Bridge and Forecastle connected over wells.
Openings in ship's side in way of wells.
(Type of Superstructures.)

Ship's Name "ASTURIAS." Nationality and Port of Registry British
Belfast. Official Number 148146. Gross Tonnage 22048 Date of Build 1925.

Moulded Dimensions: Length 639.0 Breadth 78.0 Depth 44.77 TO "C" DECK.
Moulded displacement at moulded draught = 85 per cent. of moulded depth 40,480. tons
Coefficient of fineness for use with Tables 747

Port of Survey Belfast.
Date of Survey August 13th & subsequently
Name of Surveyor W. M. S. & S. P. Scott
Particulars of Classification 100 A.1.
"with freeboard"
(Contemplated)

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth <u>44.77</u>	(a) Where D is greater than Table depth (D - Table depth) R = <u>(44.84 - 42.60) 3 = 6.72</u>	Moulded Breadth (B) <u>78.0</u>
Stringer plate <u>.05</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>18.72</u>
Sheathing on exposed deck <u>3"</u> $T \left(\frac{L-S}{L} \right) = .25 \times .0622 =$ <u>.02</u>	If restricted by superstructures <input checked="" type="checkbox"/>	Ship's Round of Beam = <u>6"</u>
Depth for Freeboard (D) = <u>44.84</u>		Difference <u>defic</u> <u>12.72</u>
		Restricted to
		Correction = $\frac{\text{Diff}^a}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{12.72 \times .0664}{4} =$ <u>2.1</u>

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed <u>8 ft</u> ...	<u>42.83</u>	<u>42.83</u>	<u>8'-8"</u>	<input checked="" type="checkbox"/>	<u>42.83</u>	Standard Height of Superstructure <u>7.5</u>
" overhang ...	<u>4.25</u>	<u>2.12</u>	<u>8 TO 8</u>		<u>2.12</u>	" " R.Q.D. ...
" R.Q.D. enclosed ...						Deduction for complete superstructure <u>42</u>
" overhang ...						Percentage covered $\frac{S}{L} =$ <u>93.78</u>
Bridge enclosed ...	<u>413.75</u>	<u>413.75</u>	<u>8'-8"</u>	<input checked="" type="checkbox"/>	<u>413.75</u>	" " $\frac{S_1}{L} =$ <u>93.36</u>
" overhang aft ...	<u>.50</u>	<u>.38</u>	<u>8 TO 8</u>		<u>.38</u>	" " $\frac{E}{L} =$ <u>93.36</u>
" overhang forward ...	<u>.50</u>	<u>.25</u>			<u>.25</u>	Percentage from Table, Line A. <input checked="" type="checkbox"/>
" R.Q.D. enclosed ...	<u>136.87</u>	<u>136.87</u>	<u>8'-8"</u>	<input checked="" type="checkbox"/>	<u>136.87</u>	(corrected for absence of forecastle (if required))
" overhang ...	<u>.50</u>	<u>.25</u>	<u>8 TO 8</u>		<u>.25</u>	Percentage from Table, Line B. <u>91.83</u>
Trunk aft ...						(corrected for absence of forecastle (if required))
" forward ...						Interpolation for bridge less than .2L (if required) <input checked="" type="checkbox"/>
Tonnage opening aft ...						Deduction = <u>42</u> \times <u>91.83</u> = <u>38.57</u>
" forward ...						
Total ...	<u>599.20</u>	<u>596.45</u>			<u>596.45</u>	

Lowest point of shear is 62'-7 1/2" aft of midships.
Fall in shear at this point is 3 1/4"

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P. ...	<u>73.90</u>	1		<u>73.90</u>	<u>54.00</u>	<u>54.00</u>	1		<u>54.00</u>	Mean actual shear aft = <u>Defic</u> <u>72.70</u> <u>71.98%</u>
1/4 L from A.P. ...	<u>32.88</u>	4		<u>131.52</u>	<u>26.50</u>	<u>26.50</u>	4		<u>106.00</u>	Mean standard shear aft = <u>Defic</u> <u>72.70</u> <u>71.98%</u>
1/2 L " ...	<u>8.13</u>	2		<u>16.26</u>	<u>2.75</u>	<u>2.75</u>	2		<u>5.50</u>	Mean actual shear forward = <u>Excess</u> <u>72.70</u> <u>71.98%</u>
Amidships ...		4					4			Mean standard shear forward = <u>Excess</u> <u>72.70</u> <u>71.98%</u>
3/4 L from F.P. ...	<u>16.26</u>	2		<u>32.52</u>	<u>24.75</u>	<u>16.69</u>	2		<u>33.38</u>	Length of enclosed superstructure forward of amidships = <u>.26L</u>
1/4 L " ...	<u>65.76</u>	4		<u>263.04</u>	<u>65.75</u>	<u>67.50</u>	4		<u>270.00</u>	" " aft of " = <u>.38L</u>
F.P. ...	<u>147.80</u>	1		<u>147.80</u>	<u>134.25</u>	<u>151.71</u>	1		<u>151.71</u>	Standard Sheer $\times \frac{404.31}{393.86} =$ <u>Effective Sheer</u>
Total ...				<u>665.04</u>					<u>620.59</u>	

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{44.45}{18} \left(.75 - \frac{.64}{2} \right) =$ +0.69

If limited on account of midship superstructure. ☒

If limited to maximum allowance of 1 1/2 ins. per 100 ft. ☒

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Ft.
Depth to Freeboard Deck = 44.82
Summer freeboard = 13.94
Moulded draught (d) = 30.88

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = 7.72 7 3/4

Addition for Winter North Atlantic Freeboard (if required) =

Deduction for Fresh Water.

Displacement in salt water at summer load water line
 $\Delta =$ 32110
Tons per inch immersion at summer load water line
T = 98.6

Deduction = $\frac{\Delta}{40 T}$ inches
= 8.14 = 8 1/4

30'-0" = 30.767 97.9
31'-0" = 31.946 98.6

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{.68 + 747}{1.36} \frac{142.7}{1.36}$

	+	-
Depth Correction	<u>6.72</u>	<u>-</u>
Deduction for superstructures	<u>-</u>	<u>38.57</u>
Sheer correction	<u>.69</u>	<u>-</u>
Round of Beam correction	<u>.21</u>	<u>-</u>
Correction for Thickness of Deck amidships	<u>-</u>	<u>.24</u>
Other corrections, scantlings, etc. and to	<u>52.74</u>	<u>-</u>
Summer Freeboard =	<u>167.25</u>	<u>138.87</u>

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

Tropical Fresh Water Line above Centre of Disc	<u>16</u>
Fresh Water Line	<u>8 1/4</u>
Tropical Line	<u>7 3/4</u>
Winter Line below	<u>7 3/4</u>
Winter North Atlantic Line	<u>7 3/4</u>

Tropical Fresh Water Freeboard	<u>13'-11 1/4"</u>
Fresh Water	<u>12'-7 1/4"</u>
Tropical	<u>13'-3"</u>
Winter	<u>13'-3 1/2"</u>
Winter North Atlantic	<u>14'-7"</u>

MARKING FORM

MARKING FORM

RECEIVED

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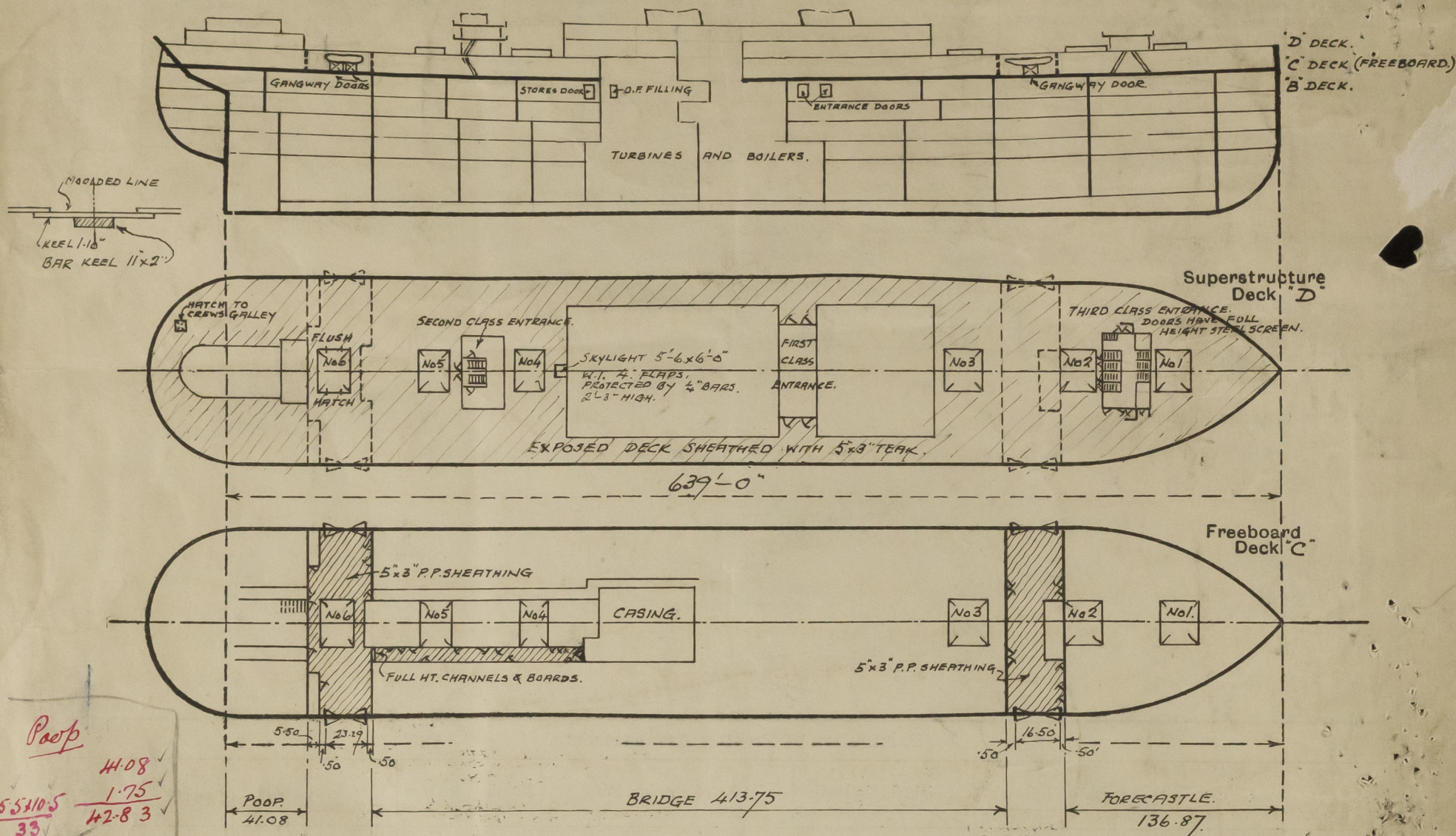
13 SEP 1934

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Foundation
002215-002221-0112-k

Asturias

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 shown on the following sketches:—

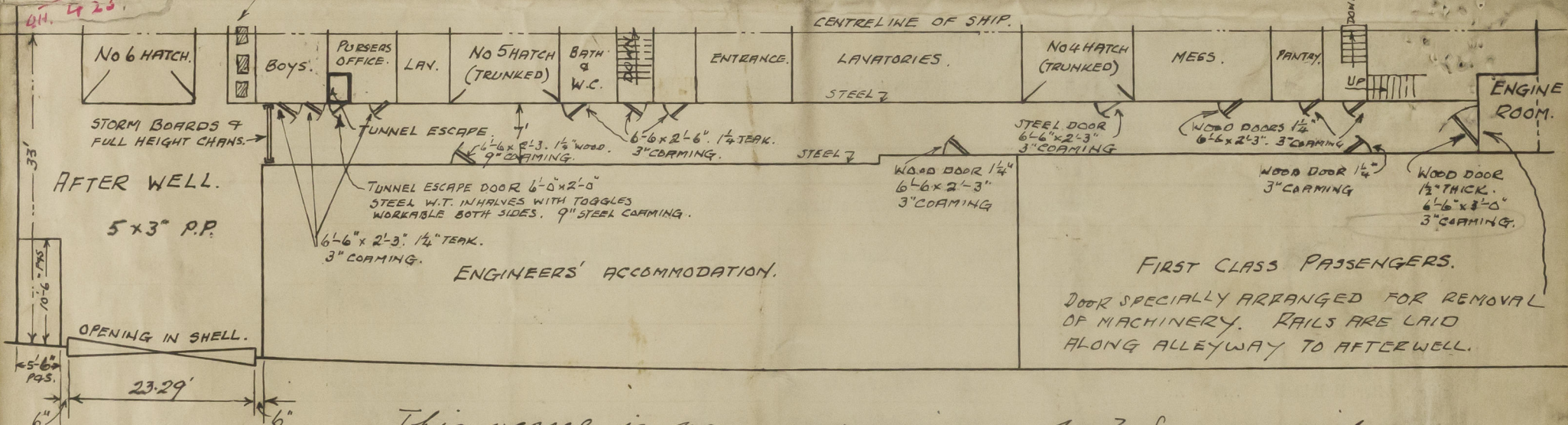
96% LENGTH ON L.W.L. = 634'-0"



Paop
 41.08
 55.10.5
 33
 1.75
 42.83

41.08
5.5
47.88
42.83

State any special features in the construction of the ship:— PLAN AT FREEBOARD DECK SHEWING ENGRS. PASSAGE FROM AFT WELL DIRECT TO ENGINE RM.



This vessel is now undergoing a no 3 Survey with a view to classification with this Society. The length is being increased 10'-0" at the fore end and a new installation of machinery fitted. She is expected to leave Belfast for sea trials on Monday Sept 24th. 1934.

Builder's name and yard number *Messrs Harland & Wolff Ltd. Belfast. Yard no 507.*
 Names of sister ships *"ALCANTARA"*
 Owners *Royal Mail.*
 Fee £ *✓* Received by me *Inclusive fee for ship.*