

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name <b>"EMPIRE FLINT"</b> <b>ATHELSTANE</b>	Official Number <b>165814</b>	Nationality and Port of Registry <b>British</b> <b>London</b> <b>Newcastle</b>	Gross Tonnage <b>8129</b>	Date of Build <b>1941</b>	Port of Survey <b>Newcastle-on-Tyne</b>
Moulded Dimensions: Length <b>462.5'</b> Breadth <b>59.0'</b> Depth <b>34.0'</b>					Date of Survey <b>During Construction</b>
Moulded displacement at moulded draught = 85 per cent. of moulded depth <b>17730</b> tons					Surveyor's Signature <b>E.A. Dean</b>
Coefficient of fineness for use with Tables <b>.787</b>					Particulars of Classification <b>+100 A.1.</b> <b>Carrying petroleum in bulk.</b>

<b>Depth for Freeboard (D).</b> Moulded depth ... <b>34.0'</b> Stringer plate ... <b>.06'</b> Sheathing on exposed deck $T \left( \frac{L-S}{L} \right) =$ <b>✓</b> Depth for Freeboard (D) = <b>34.06</b>	<b>Depth correction.</b> (a) Where D is greater than Table depth $(D - \text{Table depth}) R =$ $(34.06 - 30.83) \times 3 = +9.69"$ <b>3.23</b> (b) Where D is less than Table depth (if allowed) (Table depth - D) R = If restricted by superstructures	<b>Round of Beam correction.</b> Moulded Breadth (B) <b>59.0'</b> Standard Round of Beam = $\frac{B \times 12}{50} =$ <b>14.16</b> Ship's Round of Beam = <b>14.3/4</b> Difference <b>Excess</b> <b>.59"</b> Restricted to Correction = $\frac{\text{Diff}^2}{4} \times \left( 1 - \frac{S_1}{L} \right) =$ $\frac{.59^2}{4} \times .5749 = -.08"$
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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 <b>Egnite</b>	<b>114.38</b>					Standard Height of Superstructure <b>7.5</b>
overhang ...						" " R.Q.D. <b>✓</b>
R.Q.D. enclosed						Deduction for complete superstructure <b>42.40"</b>
overhang						Percentage covered $\frac{S}{L} =$ <b>42.51</b>
Bridge enclosed <b>Egnite</b>	<b>46.75</b>	<b>46.75</b>	<b>7.6"</b>	<b>✓</b>	<b>46.75</b>	" " $\frac{S_1}{L} =$ <b>42.51</b>
overhang aft						" " $\frac{E}{L} =$ <b>42.51</b>
overhang forward						Percentage from Table, Line <b>A. Tanker</b> <b>33.51</b>
P'cle enclosed	<b>35.50</b>	<b>35.50</b>	<b>7.6"</b>	<b>✓</b>	<b>35.50</b>	(corrected for absence of forecastle (if required)) <b>✓</b>
overhang						Percentage from Table, Line 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>42 x .3351 = 14.07</b>
forward						
Total	<b>196.63</b>	<b>196.63</b>			<b>196.63</b>	

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P.	56.25	1		56.25	58.0	56.25	1		56.25	Mean actual sheer aft = <b>Excess</b>
1/2 L from A.P.	25.03	4		100.12	25.37	25.03	4		100.12	Mean actual sheer forward = <b>Deficient</b>
3/4 L	6.19	2		12.38	6.25	6.19	2		12.38	Mean standard sheer forward
Amidships	-	4		-	-	-	4		-	Length of enclosed superstructure forward of amidships = <b>Tanker</b>
3/4 L from F.P.	12.38	2		24.76	12.28	12.38	2		24.56	" " aft of " = <b>with deficient sheer.</b>
1/2 L	50.06	4		200.24	50.0	50.00	4		200.00	
F.P.	112.50	1		112.50	112.5	112.50	1		112.50	
Total				506.25					505.81	

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{.44}{18} (.75 - .2126) = +.01"$

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.

Depth to Freeboard Deck = **34.06**  
 Summer freeboard = **6.67**  
 Moulded draught (d) = **27.39**

## Deduction for Tropical freeboard and addition for

Winter freeboard =  $\frac{d}{4}$  inches = **6.85 = 6 3/4"**

Addition for Winter North Atlantic Freeboard (if required) = **6.85 + 4.62 = 11.47 = 11 1/2"**

## Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta =$  **16800**

Tons per inch immersion at summer load water line

T = **56.50**

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

= **7.44**

= **7 1/4"**

## TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient **.787 + .68 = 1.467**

**1.36**

Depth Correction ... **9.61**

Deduction for superstructures ... **14.07**

Sheer correction ... **.01**

Round of Beam correction ... **.08**

Correction for Thickness of Deck amidships ... **-**

Other corrections, scantlings, etc. ... **-**

**9.70** **14.15** **-4.45**

Summer Freeboard = **80.03**

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

Tropical Fresh Water Line above Centre of Disc	<b>14 1/4"</b>	<b>261 mm</b>	Tropical Fresh Water Freeboard	<b>5' 5 3/4"</b>	<b>1671 mm</b>
Fresh Water Line	<b>7 1/2"</b>	<b>190 mm</b>	Fresh Water	<b>6' 0 1/2"</b>	<b>1842 mm</b>
Tropical Line	<b>6 3/4"</b>	<b>171 mm</b>	Tropical	<b>6' 1 1/4"</b>	<b>1861 mm</b>
Winter Line below	<b>6 3/4"</b>	<b>171 mm</b>	Winter	<b>7' 2 3/4"</b>	<b>2203 mm</b>
Winter North Atlantic Line	<b>11 1/2"</b>	<b>292 mm</b>	Winter North Atlantic	<b>7' 7 1/2"</b>	<b>2324 mm</b>



A new form should be prepared if any alterations that affect the freeboard have been made. If no such alterations have been made, the Surveyor should endorse the form on this side with his signature and the date.

Equivalent bulk heads.

Pooh 111.83  
 $\frac{2}{3} \times 3.83$  2.55  
114.38 = equivalent length.

Bridge 44.08  
 $\frac{2}{3} \times 4$  2.67  
46.75 = equivalent length.

Trade of ship Carrying Petroleum in bulk

Names of sister ships Similar Vessel "ENNERDALE"

Builder's name and yard number Swan Hunter & Wigham Richardson, Wallsend No 1601.

Owners The Ministry of Shipping.

File 19-0-0



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