

11 JUN 1941

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name "ENNERDALE"	Official Number 168196	Nationality and Port of Registry British London	Gross Tonnage 8219 8267 114.27	Date of Build 1941	Port of Survey Newcastle-on-Tyne (Walker.)
Moulded Dimensions: Length 462.5' Breadth 59.0' Depth 34.0'					Date of Survey During Construction
Moulded displacement at moulded draught = 85 per cent. of moulded depth 17730 tons					Surveyor's Signature E.A. Dean.
Coefficient of fineness for use with Tables .787					Particulars of Classification +100A.1. Carrying Petroleum in bulk.

Depth for Freeboard (D). Moulded depth ... 34.0 Stringer plate06 Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ ✓ Depth for Freeboard (D) = 34.06	Depth correction. (a) Where D is greater than Table depth $(D - \text{Table depth}) R =$ $(34.06 - 30.83) 3 = +9.69"$ (b) Where D is less than Table depth (if allowed) (Table depth - D) R = ✓ If restricted by superstructures ✓	Round of Beam correction. Moulded Breadth (B) 59.0' Standard Round of Beam = $\frac{B \times 12}{50} =$ 14.16 Ship's Round of Beam = 14.4 Difference Excess .59" Restricted to Correction = $\frac{\text{Diff}^2}{4} \times \left(1 - \frac{S_1}{L} \right) =$.59 x .58 10 = -.09"
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DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed Equin ...	114.50	114.50	7'-6"	✓	114.50
.. overhang ...	✓				
R.Q.D. enclosed ...	✓				
.. overhang ...	✓				
Bridge enclosed Equin ...	37'-6"	37.33	7'-6"	✓	37.33
.. overhang aft ...	8'-6"	6.37			6.37
.. overhang forward ...	17'-0"	10.08			10.08
F'cle enclosed ...	35'-6"	35.50	7'-6"	✓	35.50
.. overhang ...	✓				
Trunk aft ...	✓				
.. forward ...	✓				
Tonnage opening aft ...	✓				
.. forward ...	✓				
Total ...	195.00	193.78			193.78

Standard Height of Superstructure **7.50'**
 " " R.Q.D. **✓**
 Deduction for complete superstructure **42.00**
 Percentage covered $\frac{S}{L} =$ **42.38**
 " " $\frac{S_1}{L} =$ **41.70**
 " " $\frac{E}{L} =$ **41.90**
 Percentage from Table, Line A. **Tanker** **32.90**
 (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 = **42.00 x .3290 = -13.82"**

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	56.25	
$\frac{1}{2}$ L from A.P. ...	25.03	4	100.12	25.87	25.03	4	100.12	100.12	
$\frac{3}{8}$ L ..	6.19	2	12.38	6.25	6.19	2	12.38	12.38	
Amidships ...	-	4	-	-	-	4	-	-	
$\frac{3}{8}$ L from F.P. ...	12.38	2	24.76	12.25	12.38	2	24.76	24.76	
$\frac{1}{2}$ L ..	50.06	4	200.24	50.0	50.06	4	200.24	200.24	
F.P. ...	112.50	1	112.50	112.5	112.50	1	112.50	112.50	
Total ...			506.25				505.75		

Mean actual sheer aft = **Excess**
 Mean standard sheer aft
 Mean actual sheer forward = **Deficient**
 Mean standard sheer forward
 Length of enclosed superstructure forward of amidships = **Tanker with deficient sheer.**
 " " aft of " **=**
 Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{75-S}{2L} \right) =$ **0.5' (75 - 219) = +01"**
 If limited on account of midship superstructure. **✓**
 If limited to maximum allowance of $1\frac{1}{2}$ ins. per 100 ft. **✓**

Deduction for Tropical Freeboard. Addition for Winter and Winter North Atlantic Freeboard. Depth to Freeboard Deck = 34.06 Summer freeboard = 6.69 Moulded draught (d) = 27.37 Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 6.84 = 6.34" Addition for Winter North Atlantic Freeboard (if required) = 6.84 + 4.62 = 11.46 = 11.2"	Deduction for Fresh Water. Displacement in salt water at summer load water line 16743 $\Delta =$ Tons per inch immersion at summer load water line 56.47 Deduction = $\frac{\Delta}{40T}$ inches = 7.43 = 7.2"	TABULAR FREEBOARD corrected for Flush Deck (if required) Correction for coefficient .787 + .68 = 1.467 / 1.36 <table border="1"> <tr> <th></th> <th>+</th> <th>-</th> </tr> <tr> <td>Depth Correction ...</td> <td>9.69</td> <td>-</td> </tr> <tr> <td>Deduction for superstructures ...</td> <td>-</td> <td>13.82</td> </tr> <tr> <td>Sheer correction ...</td> <td>.01</td> <td>-</td> </tr> <tr> <td>Round of Beam correction ...</td> <td>-</td> <td>.09</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>9.70</td> <td>13.91</td> </tr> </table> Summer Freeboard = 80.27		+	-	Depth Correction ...	9.69	-	Deduction for superstructures ...	-	13.82	Sheer correction01	-	Round of Beam correction ...	-	.09	Correction for Thickness of Deck amidships ...	-	-	Other corrections, scantlings, etc. ...	-	-		9.70	13.91
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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	14 1/4"
Fresh Water Line	7 1/2"
Tropical Line	6 3/4"
Winter Line below	6 3/4"
Winter North Atlantic Line	11 1/2"

Tropical Fresh Water Freeboard	5 1/2"
Fresh Water	6 1/4"
Tropical	6 1/2"
Winter	7 1/4"
Winter North Atlantic	7 3/4"

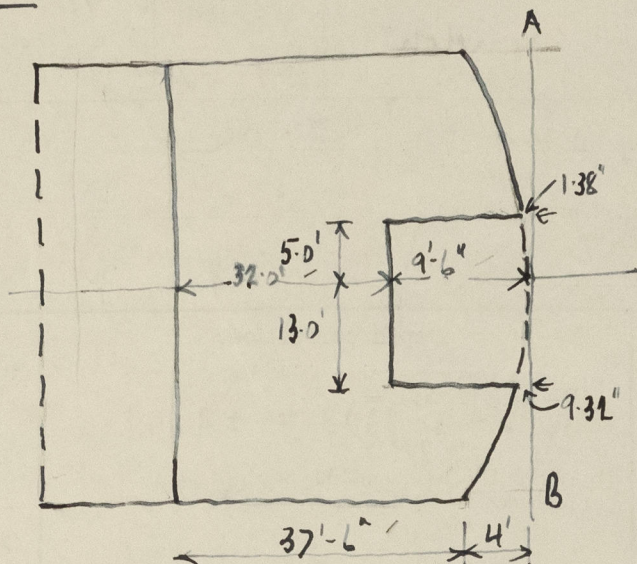
Ennerdale.

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 Bulheads.

Deck. 111.83 ✓
 $\frac{2}{3} \times 4$ 2.67 ✓
114.50

Bridge



Area between curved line and straight line A-B.
 $59.0 \times 4 \frac{2}{3} = 78.67 \text{ ft}^2$

Port recess area
 $= 5' (9.5' - \frac{1}{3} \times 1.38'') = 47.30 \text{ ft}^2$
 $9.5' - .04 = 9.46$

Starboard recess area
 $= 15' (9.5' - \frac{1}{3} \times 7.32'') = 120.12 \text{ ft}^2$
 $9.5' - .26' = 9.24$
245.09

Equivalent bulheads aft of line A-B. = $\frac{245.09}{59} = 4.17'$

Equivalent undred length = 41.5' - 4.17' = 37.33'
 Forward overhang = 4.17 - 4.0 = .17'

Trade of ship Admiralty Service

Names of sister ships

Builder's name and yard number Swan Hunter, Wigham Richardson Ltd. Walker on Tyne No 1656.

Owners The Admiralty.

Fee £ 19-0-0



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