

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Index No. **35792**  
(For London Office only).No. **27298**

Ship's Name <b>"CAIRNCORM"</b>	Official Number <b>165950</b>	Nationality and Port of Registry <b>BRITISH GLASGOW.</b>	Gross Tonnage <b>394.39</b>	Date of Build <b>1938-8</b>	Port of Survey <b>ROTTERDAM</b>
Moulded Dimensions: Length <b>137.0'</b> Breadth <b>25.50'</b> Depth <b>11.50'</b>					Date of Survey <b>15<sup>th</sup> SEPTEMBER</b>
Moulded displacement at moulded draught = 85 per cent. of moulded depth <b>707.5</b> tons (1916)					Surveyor's Signature <i>J. van der Veld</i>
Coefficient of fineness for use with Tables <b>.725</b>					Particulars of Classification <b>100.A.1</b> "CLASS CONTINGENT"

<b>Depth for Freeboard (D).</b> Moulded depth ... <b>11.500</b> Stringer plate ... <b>0.026</b> Sheathing on exposed deck $T \left( \frac{L-S}{L} \right) =$ <b>—</b> Depth for Freeboard (D) = <b>11.53</b>	<b>Depth correction.</b> (a) Where D is greater than Table depth (D—Table depth) R = $\frac{11.53-9.13}{2.40} = +2.53"$ (b) Where D is less than Table depth (if allowed) (Table depth—D) R = <b>—</b> If restricted by superstructures	<b>Round of Beam correction.</b> Moulded Breadth (B) <b>25.50</b> Standard Round of Beam = $\frac{B \times 12}{50} = 6.12"$ Ship's Round of Beam = <b>0.54</b> Difference <b>excess .36</b> Restricted to Correction = $\frac{\text{Diff}^e}{4} \times \left( 1 - \frac{S_1}{L} \right) = \frac{.36}{4} (1 - .756) = -.02$
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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 ...	36.85	36.85	7.00		36.85
" overhang SEE SKETCH	1.79				
R.Q.D. enclosed ...	51.96	51.96	3.50		51.96
" overhang ...					
Bridge enclosed ...					
" overhang aft ...					
" overhang forward ...					
Fore enclosed OPEN ...	15.83	14.76	6.50		14.76
" overhang ...					
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" forward ...					
Total ...	104.64	103.57			103.57

Standard Height of Superstructure	6.00'
" " R.Q.D.	3.247'
Deduction for complete superstructure	19.70
Percentage covered $\frac{S}{L} =$	76.39
" " $\frac{S_1}{L} =$	75.60
" " $\frac{E}{L} =$	75.60
Percentage from Table, Line A.	
(corrected for absence of forecastle (if required))	
Percentage from Table, Line B.	69.89
(corrected for absence of forecastle (if required))	
Interpolation for bridge less than 2L (if required)	
Deduction = $19.70 \times .6989 = 13.77$	

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	23.70	1		23.70	35.82	49.25	1		49.25
$\frac{1}{4}$ L from A.P. ...	10.54	4		42.16	15.78	21.92	4		87.68
$\frac{2}{4}$ L " ...	2.61	2		5.22	4	5.42	2		10.84
Amidships ...	—	4		—	0	—	4		—
$\frac{3}{4}$ L from F.P. ...	5.22	2		10.44	5.2	5.50	2		11.00
$\frac{1}{4}$ L " ...	21.08	4		84.32	22.42	22.125	4		88.50
F.P. ...	47.40	1		47.40	52.35	52.75	1		52.75
Total ...				213.24					300.02

MOULDED DRT	MOULD. DISPL.	EXT. DISPLAC.	TONS/INCH.
10-9/8	707.5	795.0	2.6
9-9/8		710.0	
8-9/8		625.0	16.9

Mean actual sheer aft =	Excess
Mean standard sheer aft =	
Mean actual sheer forward =	Excess
Mean standard sheer forward =	
Length of enclosed superstructure forward of amidships =	7.1L
" " aft of " =	.5L

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{86.78}{18} \left( .75 - \frac{382}{368} \right) = -1.77"$

If limited on account of midship superstructure.

If limited to maximum allowance of 1½ ins. per 100 ft.

## Deduction for Tropical Freeboard.

## Addition for Winter and Winter North Atlantic Freeboard.

Depth to <b>Raised Quarter</b> Deck =	15.03
Summer freeboard =	3.67
Moulded draught (d) =	11.36

## Deduction for Tropical freeboard and addition for

Winter freeboard =  $\frac{d}{4}$  inches =  $2.84 = 2\frac{3}{4}"$ Addition for Winter North Atlantic Freeboard (if required) =  $4\frac{3}{4}"$ 

## Deduction for Fresh Water.

Displacement in salt water at summer load water line	
$\Delta =$	845
Tons per inch immersion at summer load water line	
T =	7.16
Deduction = $\frac{\Delta}{40T}$ inches	2.95
	3"

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

Correction for coefficient $\frac{.725 + .68}{1.36} = \frac{1.405}{1.36}$	13.84
	14.30
Depth Correction ...	2.53
Deduction for superstructures ...	13.77
Sheer correction ...	1.77
Round of Beam correction ...	.02
Correction for Thickness of Deck amidships	42.00
Other corrections, scantlings, etc. ...	
Summer Freeboard =	43.27

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, **Raised Quarter** Wood/Steel, Deck:—

Tropical Fresh Water Line above Centre of Disc ...	3"	Tropical Fresh Water Freeboard ...	3'-5"
Fresh Water Line " " ...	3"	Fresh Water " " ...	3'-5"
Tropical Line " " ...	NIL	Tropical " " ...	3'-8" (LIMITED)
Winter Line below " " ...	2 3/4"	Winter " " ...	3'-10 1/4"
Winter North Atlantic Line " " ...	4 1/4"	Winter North Atlantic " " ...	4'-0 1/4"

23 SEP 1938

10m 3.37. T.

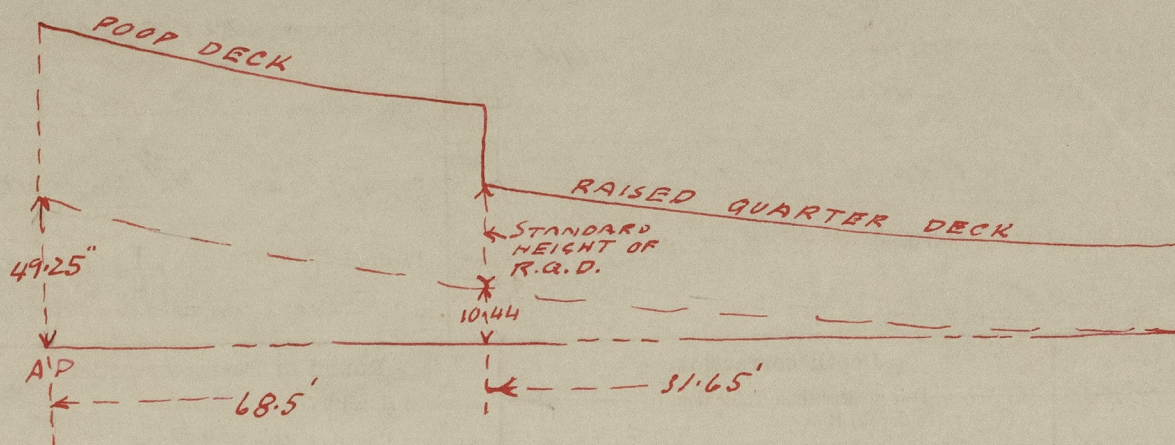
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Cairngorm

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.



Allowed sheer aft

Actual sheer at Poop front 7.47"

Excess height of R.Q.D.  $\frac{3.04}{10.51}$

Virtual sheer at Aft Perp. =  $10.51 \left( \frac{68.50}{31.65} \right)^2 = 49.25"$

Actual height of R.Q.D. 3.500"

Standard " " " 3.247"

Excess = 0.253"

= 3.04"

Trade of ship OVERSEA TRADE

Names of sister ships ✓ Similar ship S.S. "PRASE"

Builder's name and yard number MEERS A. VONK & ZONEN CAPELLE <sup>A/</sup><sub>D</sub> YSEL YARD N° 646.

Owners WILLIAM ROBERTSON GLASGOW.

Fee 72.00



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Foundation