

Lloyd's Register of Shipping.
SURVEYS FOR FREEBOARD.
(COMPUTATION FOR STEAMER, ~~SAILING SHIP, TANKER.~~)

Ship's Name **HARMAC GROFTON** Official Number **175,361** Nationality and Port of Registry **British Montreal, P.Q.** Gross Tonnage **7160.59** Date of Build **1944** Port of Survey **North Vancouver, B.C.**
Date of Survey **January, 1944**
Surveyor's Signature *James Sinclair*
Particulars of Classification **Contemplated 100A with freeboard corresponding to a Summer moulded Dft. of 26'-10"**
Moulded Dimensions: Length **417.35'** Breadth **56.90'** Depth **(37.33' to Upper Deck (28.58' to 2nd Deck))**
Moulded displacement at moulded draught = 85 per cent. of moulded depth **16,600** tons
Coefficient of fineness for use with Tables **.771.**

Depth for Freeboard (D). Moulded depth ... **37.33'**
Stringer plate ... **.06'**
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$
Depth for Freeboard (D) = **37.39**
Depth correction. (a) Where D is greater than Table depth (D-Table depth) R= $(37.39 - 27.82) \times 3 = +28.71$
(b) Where D is less than Table depth (if allowed) (Table depth-D) R= **9.57**
If restricted by superstructures
Round of Beam correction. Moulded Breadth (B) **56.9'**
Standard Round of Beam = $\frac{B \times 12}{50} = 13.66$
Ship's Round of Beam = **14.00"**
Difference **.34**
Restricted to
Correction = $\frac{\text{Diff}^o}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.34}{4} = -.09$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...					
" overhang ...					
R.Q.D. enclosed ...					
" overhang ...					
Bridge enclosed ...					
" overhang aft ...					
" overhang forward ...					
Forecastle enclosed ...					
" overhang ...					
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" " forward ...					
Total ...					

Standard Height of Superstructure
" " R.Q.D.
Deduction for complete superstructure
Percentage covered $\frac{S}{L} =$
" " $\frac{S_1}{L} =$
" " $\frac{E}{L} =$
Percentage from Table, Line A. (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 = **Nil**

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate Ins.	Effective Ordinate	S M	Product
A.P. ...	51.73	1	51.73	55.00	55.00	1	55.00
%L from A.P. ...	23.02	4	92.08	23.25	23.25	4	93.00
%L " ...	5.69	2	11.38	6.50	6.50	2	13.00
Amidships ...	-	4	-	-	-	4	-
%L from F.P. ...	11.38	2	22.76	11.63	11.63	2	23.26
%L " ...	46.04	4	184.16	46.75	46.75	4	187.00
F.P. ...	103.47	1	103.47	105.00	105.00	1	105.00
Total ...			465.58				476.26

Mean actual sheer aft =
Mean standard sheer aft =
Mean actual sheer forward =
Mean standard sheer forward =
Length of enclosed superstructure forward of amidships =
" " aft of " =

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{10.68 \times .75}{18} = -.45$
If limited on account of midship superstructure. **No. Flush Deck.** 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 = **37.39** Ft. Summer freeboard = **10.56** Moulded draught (d) = **26.83**
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = **6.71 = 6 3/4**
Addition for Winter North Atlantic Freeboard (if required) =
Deduction for Fresh Water. Displacement in salt water at summer load water line $\Delta = 13760$ Tons per inch immersion at summer load water line $T = 48.20$ Deduction = $\frac{\Delta}{40T}$ inches = **7 1/4**
TABULAR FREEBOARD corrected for Flush Deck (if required) $\frac{76.95 + 6.26}{1.36} = 1.451/1.36$ Correction for coefficient. **83.21**
Depth Correction ... **28.71**
Deduction for superstructures ... **-**
Sheer correction ... **.45**
Round of Beam correction ... **.09**
Correction for Thickness of Deck amidships ... **-**
Other corrections, scantlings, etc. to correspond to a summer moulded draught of **26'-10"** **9.80**
Summer Freeboard = **126.75**

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, **WALL** Steel, Deck:—

Tropical Fresh Water Line above Centre of Disc ...	14"	Tropical Fresh Water Freeboard ...	10'-6 3/4"
Fresh Water Line " " ...	7 1/4"	Fresh Water " " ...	9'-4 3/4"
Tropical Line " " ...	6 3/4"	Tropical " " ...	9'-11 1/2"
Winter Line below " " ...	6 3/4"	Winter " " ...	10'-0"
Winter North Atlantic Line " " ...	-	Winter North Atlantic " " ...	11'-1 1/2"

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.

Trade of ship.....

Names of sister ships..... Burrard Dry Dock Co. Ltd., North Vancouver, B.C. (Yard No. 180)

Builder's name and yard number..... Burrard Dry Dock Co. Ltd., North Vancouver, B.C. (Yard No. 198)

Owners Minister of Munitions & Supply of Canada

Fee £ \$100.00 *ph*



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