

# DEPARTMENT OF MARINE

## (STEAMSHIP INSPECTION SERVICE)

### SURVEYS FOR FREEBOARD

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having

Poop - Bridge - Forecastle

Port of Survey *Halifax, N.S.*Date of Survey *April 7th. 1933.*Name of Surveyor *S. J. Hill*Particulars of Classification *Lloyds 100A1**Lloyds Reg. of Shipping London July 20th 1920*

(Type of Superstructures)

Ship's Name

Nationality and Port of Registry

Official Number

Gross Tonnage

Date of Build

*Canadian Prospector**British Montreal**141729**5492**1920*Moulded Dimensions: Length (XXXII) *400* Breadth (XXXIII) *52* Moulded Depth (XXXIV) *31.0*Moulded displacement at moulded draught = 85 per cent of moulded depth (XXXVI) *1215.2* tonsCoefficient of fineness for use with Tables (XXXVI) *.776*

Depth for Freeboard (D) (XXXV)

Moulded depth *31.0*Stringer plate *.04*

Sheathing on exposed deck

$$T \left( \frac{L-S}{L} \right) =$$

Depth for Freeboard (D) = *31.04*

Depth correction (XXXV) (LXVII)

(a) Where D is greater than Table depth  
(D - Table depth) R =  $(31.0 - 26.66)3 = 13.00$ (b) Where D is less than Table depth (if allowed)  
(Table depth - D) R =

If restricted by superstructures

Round of Beam correction (LX-LXI)

Moulded Breadth (B) *52.00*

$$\text{Standard Round of Beam} = \frac{B \times 12}{50} = \frac{52 \times 12}{50} = 12.48$$

Ship's Round of Beam = *13.00*Difference = *.52*

Restricted to

$$\text{Correction} = \frac{\text{Diff}^e}{4} \times \left( 1 - \frac{S_1}{L} \right) = \frac{.52}{4} \times (1 - .5) = .065$$

DEDUCTION FOR SUPERSTRUCTURES (XXXVIII-LIII)

	Mean Covered Length (S) (XL)	Equivalent Enclosed Length (S <sub>1</sub> ) (Uncorrected for height)	Height (XXXVIII)	Height Correction (XLVI)	Effective Length (E)
Poop enclosed (XLVII) ....	<i>49.00</i>	<i>49.00</i>	<i>7.9</i>		<i>49.00</i>
" overhang ....					
R.Q.D. enclosed (XLVIII) ....					
" overhang ....					
Bridge enclosed (XLIX) ....	<i>112.80</i>	<i>112.80</i>	<i>7.9</i>		<i>112.80</i>
" overhang aft ....					
" overhang forward ....					
F'cle enclosed (L) ....	<i>38.50</i>	<i>38.50</i>	<i>7.9</i>		<i>38.50</i>
" overhang ....	<i>1.50</i>	<i>0.75</i>			<i>0.75</i>
Trunk aft (LI) ....					
" forward ....					
Tonnage opening aft ....					
" " forward ....					
Total ....	<i>201.80</i>	<i>201.05</i>			<i>201.05</i>

Standard Height of superstructure (XXXIX) *7.5'*

" " R.Q.D. (XXXIX) .....

Deduction for complete superstructure (LIII) *42"*

$$\text{Percentage covered} = \frac{S}{L} = \frac{201.8}{400} = .504$$

$$\frac{S_1}{L} = \frac{201.05}{400} = .5$$

$$\frac{E}{L} = \frac{201.05}{400} = .5$$

Percentage from Table, Line A.

(corrected for absence of forecastle (if required))

Percentage from Table, Line B.

*36%*

(corrected for absence of forecastle (if required))

Interpolation for bridge less than .2L (if required)

Deduction = *15.12*

SHEER CORRECTION (LIV-LIX)

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P. ....	$\cdot 1L + 10 = 50.00$	1	<i>50.00</i>	<i>62.25</i>	<i>62.25</i>	1	<i>62.25</i>
$\frac{1}{2}L$ from A.P. ....	$\cdot 0445L + 4.45 = 22.25$	4	<i>89.00</i>	<i>24.87</i>	<i>24.87</i>	4	<i>99.48</i>
$\frac{3}{4}L$ " ....	$\cdot 011L + 1.1 = 5.50$	2	<i>11.00</i>	<i>6.25</i>	<i>6.25</i>	2	<i>12.50</i>
Amidships	0	4	-	-	-	4	-
$\frac{3}{4}L$ from F.P. ....	$\cdot 022L + 2.2 = 11.00$	2	<i>22.00</i>	<i>14.75</i>	<i>14.75</i>	2	<i>29.50</i>
$\frac{1}{2}L$ " ....	$\cdot 089L + 8.9 = 44.50$	4	<i>178.00</i>	<i>54.75</i>	<i>54.75</i>	4	<i>219.00</i>
F.P. ....	$\cdot 2L + 20 = 100.00$	1	<i>100.00</i>	<i>125.37</i>	<i>125.37</i>	1	<i>125.37</i>
Total			<i>450.00</i>				<i>548.10</i>

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{548.1 - 450}{18} \left( .75 - \frac{201.8}{800} \right) = 2.71$$

If limited on account of midship superstructure (LIX) *No.*If limited to maximum allowance of  $1\frac{1}{2}$  ins. per 100 ft. (LIX) *No.*

Deduction for Tropical Freeboard (LXIII)

Addition for Winter and Winter North Atlantic Freeboard (LXIV-LXV)

Depth to Freeboard Deck = *31.04*Summer Freeboard = *5.96*Moulded draught (d) = *25.08*

Deduction for Tropical Freeboard and addition for

Winter Freeboard =  $\frac{d}{4}$  inches =  $\frac{25}{4} = 6\frac{1}{4}$ 

Addition for Winter North Atlantic Freeboard (if required) =

Deduction for Fresh Water (LXVI)

Displacement in salt water at summer load water line

 $\Delta = 11640$ 

Tons per inch immersion at summer load water line

T = *42.5*Deduction =  $\frac{\Delta}{40 T}$  inches=  $6\frac{3}{4}$ 

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

Correction for coefficient  $\frac{.776 + .68}{1.36} = 1.07$ 

Depth Correction ....

Deductions for superstructures ....

Sheer correction ....

Round of Beam correction ....

Correction for Thickness of Deck amidships

Other corrections, scantlings, etc. ....

	+	-
Depth Correction	<i>13.00</i>	
Deductions for superstructures		<i>15.12</i>
Sheer correction		<i>2.71</i>
Round of Beam correction		<i>.06</i>
Correction for Thickness of Deck amidships		
Other corrections, scantlings, etc.	<i>13.00</i>	<i>17.89</i>

Summer Freeboard (LXII) = *71.6*

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

Tropical Fresh Water Line above Centre of Disc .... *13"*  
 Fresh Water Line " " " " .... *6 3/4"*  
 Tropical Line " " " " .... *6 1/4"*  
 Winter Line below " " " " .... *6 1/4"*  
 Winter North Atlantic Line " " " " ....

Tropical Fresh Water Freeboard *4'*  
 Fresh Water " *5'*  
 Tropical " *5'*  
 Winter " *6'*  
 Winter North Atlantic " *6'*

NOTE—ROMAN NUMERALS INDICATE APPROPRIATE RULES PARTS I, II, III IN ANNEX I.  
 LOAD LINE CONVENTION. FOR SAILING SHIPS, STEAMERS CARRYING TIMBER DECK  
 CARGOES AND TANKERS ADDITIONAL RULES IN PARTS IV, V, VI MUST BE CONSULTED.



## PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS (VIII-XVIII) (XLV)											
Description of Hatchway	Upper Deck						Bridge Superst. Deck		Upper Deck		Poop
	No. 1	No. 2	No. 3	No. 4	No. 5	Trimming Hatchway (2)	No. 3	Bunker Hatchway (4)	Inside	Forecastle	Superst.
Dimensions of Hatchway	32.6' x 26'	34.5' x 26'	11.0' x 18.2'	34.5' x 26'	30.3' x 26'	30' x 23'	10.9' x 18.0'	8.3' x 4.0'	2.5' x 2.5'	23' x 20"	24' x 24'
COAMINGS	Height above Deck	30"	30"	30"	30"	30"	30"	18"	27"	24"	16"
	Thickness	7/16"	7/16"	BA 10' x 1/2"	7/16"	7/16"	BA 10' x 1/2"	7/16"	3/8"	3/8"	1/2"
	Stiffeners	BA 8' x 1/2"	BA 8' x 1/2"	BA 8' x 1/2"	BA 8' x 1/2"	BA 8' x 1/2"	BA 8' x 1/2"	—	—	—	—
	Brackets, Stays	2	3	3	2	NONE	—	—	—	—	—
HATCH BEAMS	Number	6	6	—	6	5	—	1	—	—	—
	Spacing	4.7'	5.0'	—	5.0'	5.0'	—	—	—	—	—
	Scantling and Sketch	Depth ends	15"	—	—	—	—	Barn Bulkhead in centre	—	—	—
	Double angles	4 x 3 3/4 7/16"	—	—	Same as No. 1	Same	—	DA 3 x 3 x 3/8	—	—	—
FORE AND AFTERS	Web plates	7/16"	—	—	—	—	—	Plate 3/8 Rivetted to side coaming	—	—	—
	Bearing Surface	3 1/2"	3 1/2"	—	3 1/2"	3 1/2"	—	—	—	—	—
	Number	—	—	3	—	—	3	—	—	—	—
	Spacing	—	—	4.5	—	—	4.5	—	—	—	—
HATCH COVERS	Ununsupported Lengths	—	—	Depth ends 9"	—	—	Same as No. 3 inside Superstructure	—	—	—	—
	Scantling and Sketch	—	—	" 4 13"	—	—	—	—	—	—	—
	Bearing Surface	—	—	—	—	—	3	—	—	—	—
	Material	Wood 2 3/4"	Same	Wood 2 3/4"	Wood 2 3/4"	Wood 2 3/4"	Wood 2 3/4"	Wood 2 3/4"	Wood 2 3/4"	Wood 2 3/4"	Wood 2 3/4"
HATCH COVERS	Thickness	2 3/4"	—	2 3/4"	2 3/4"	2 3/4"	2 3/4"	2 3/4"	2 3/4"	2 3/4"	2 3/4"
	How Fitted	F & A	—	P & S	F & A	F & A	P & S	P & S	P & S	P & S	P & S
	Bearing Surface	2 1/2 x 4"	—	3	2 1/2 x 4"	2 1/2 x 4"	2 1/2	2 1/4	2 1/4	2 1/4	2 1/2
	Spacing of Cleats	22"	22"	48" outside	22"	22"	22" 1/4"	22"	18"	12"	15"
HATCH COVERS	Number of Tarpaulins	3	3	10" outside none	3	3	none	3	2	none	2

\*Are wood fore and afters steel shod at all bearing surfaces? *Yes*  
 Are battens and wedges efficient and in good condition? *Yes*  
 Are tarpaulins in good condition and in accordance with rule requirements? *Yes, except the trimming latches & latches inside Forecastle.*  
 Are lashings provided in accordance with rule requirements? *Yes*

Particulars of fiddle, funnel and ventilator coamings:—(XIX) *Funnel and Ventilator coamings protected by Bridge Superstructure and fiddle casing.*  
*Fiddle top fitted with hinged steel doors.*

Particulars of Flush Bunker Scuttles:—(XXII)

*None*

Particulars of Companionways:—(XXIII) *Poop Deck:— 2 Steel companionways to brow's quarters 4.0' x 2.7' x 5.7' high.*  
*Hinged doors (halves) 5' x 2.25' x 1/4" Sill—10" high.*  
*Steel Skylights (1) 6.0' x 5.0' x 2.4" high } 4 Hinged covers on each skylight.*  
*(1) 5.6' x 3.6' x 3.0" "*

Particulars of Ventilators in exposed positions on freeboard and superstructure decks:—(XXIV)

	No.	DIA.	Height Coaming
Forecastle Deck	2	18"	36"
"	1	9	36
Forward Well	4	18	37
"	2	18	36
Bridge Superst.	2	12	36
after Well	4	18	37

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks:—(XXV)

	No.	DIA.	Height
Forecastle Deck	3	6"	22"
"	1	6"	6"
Forward Well	3	3"	10"
"	2	4"	36"
Bridge Superst.	6	4"	32"
after Well	4	3"	36"

Particulars of Gangway Cargo and Coaling Ports:—(XXVI)

*None.*

Particulars of Scuppers and Sanitary Discharge pipes:—(XXVII)

*No Discharges below Freeboard Deck.*

Particulars of Side Scuttles:—(XXVIII)

	No.	DIA.	Deadlights
Forecastle Sides	6	9"	6
" Ends	1	9"	—
Bridge Superst. Sides	2	9"	2
" Ends	1	9"	—
Poop Sides	16	9"	15
" Ends	6	9"	6

Particulars of Guard Rails:—(XXIX)

*Forecastle Deck 2 Rails & Stanchions 3.2' high.*  
*Forward Well Steel Bulwarks*  
*Bridge Superst. Deck do.*  
*after Well do.*  
*Poop Sup. Deck 3 Rails & Stanchions 3.6' "*

Particulars of Gangways, Lifelines, etc.:—(XXXI)

*None provided.*

## Particulars of Freeing Arrangements:—(XXX)

	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each Side	Area each Side	Rule area each side
After Well	99.7'	3.6'	4.0' x 1.3'	4	20.8'	20.0'
Forward Well	100.0'	3.6'	4.0' x 1.3'	4	20.8'	20.0'

State position of each freeing port (F. and A. position and height above deck edge) { After Well:— 12.7' — 20' — 19.5' — 19.6' — 11.9' }  
 { Forward Well:— 11.1' — 20.8' — 19.8' — 20.1' — 12.3' }  
 State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:—  
 Additional area where sheer is less than standard.

## Particulars of Superstructures, Trunks, Casings, Deckhouses:—(XIX-XXI) (XLII)

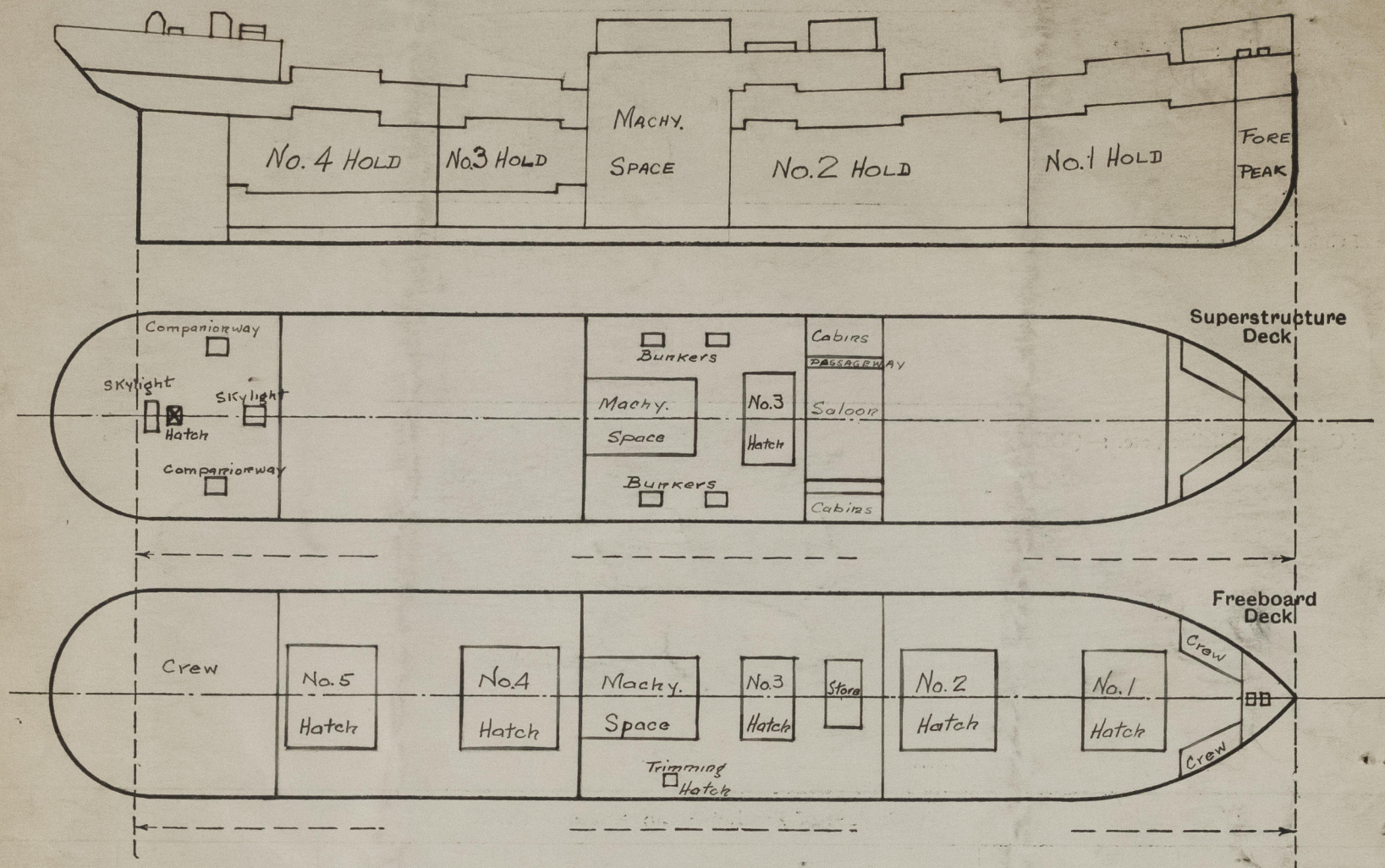
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead	Deck L 4' x 4 1/2"	7/16"	6' x 4' x 3/8" L	32"	—	5.0' x 2.0'	18"	8.0
Raised Quarter Deck Bulkhead								
Bridge, After Bulkhead	4' x 4' x 1/2"	3/8"	4' x 4' x 7/16" L	30"	—	5.0' x 3.3'	18"	7.9
Bridge, Forward Bulkhead	4' x 4' x 1/2"	7/16"	BA 9' x 1/2"	33"	Brackets T & B	5.0' x 3.3'	18"	7.9
Forecastle Bulkhead								
Trunk, Aft								
Trunk, Forward								
Exposed Machinery Casings on Freeboard or Raised Quarter Decks								
Exposed Machinery Casings on Superstructure Decks	7/16"	3/8"	3 1/2 x 3 x 3/8 L	28"	Brackets Top	5.0' x 2.0'	18"	7.5'
Machinery Casings within Superstructure not fitted with Class I Closing Appliances	7/16"	3/8"	3 1/2 x 3 x 3/8 L	28"	do	5.0' x 2.0'	18"	7.9'
Deckhouses on Flush Deck Ships								

Particulars of Closing Appliances (state if capable of being manipulated from both sides:—(XLIII-XLIV)

Poop Bulkhead	2 W.T. Steel Hinged Doors Class I manipulated from outside only.
Raised Quarter Deck Bulkhead	
Bridge, After Bulkhead	2 Class II Steel plate covers fastened with hooked bolts & nuts from outside.
Bridge, Forward Bulkhead	2 W.T. Steel Doors Hinged - Class I manipulated from outside only.
Forecastle Bulkhead	Open
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	
Exposed Machinery Casings on Superstructure Decks	2 Steel Doors to Stokhold and 1 door to Eng. Room, manipulated from both sides
Machinery Casings within Superstructure not fitted with Class I Closing Appliances	2 Steel Doors to Engine Room.
Deckhouses on Flush Deck Ships	



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:—



State any special features in the construction of the ship. (In the case of Steamers carrying timber deck cargoes and tankers additional requirements are to be shown in this space).

Present Freeboard Certificate No. 40993  
20836

Lloyd's Registry of Shipping London July 14th-1920

Centre of disc 6 ft. 2 ins. below upper deck line

Maximum Load Line in fresh water 6 ins. above upper edge of line through centre of disc.

Maximum Load Line, Indian Summer, 5 1/2 ins. above upper edge of line through centre of disc.

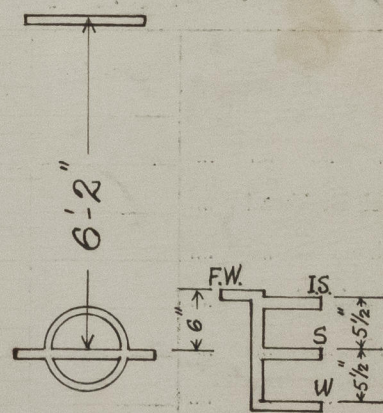
Maximum Load Line, Winter, 5 1/2 ins. below line through centre of disc.

Top of Statutory deck line above top of steel deck at side - 1 3/4 ins.

Note:— Brackets on hatch coamings Nos. 1, 2, 4 & 5 were not fitted at the time of this survey, but were fitted subsequently, before the ship sailed from Halifax.

Draft at Summer Load Line  
= 25 ft. 2 7/8 ins.

Tons per inch immersion at the above draft = 42.5 tons.



Builder's name and yard number..... J. Coughlan & Sons, B.L.

Names of sister ships.....

Owners .....