

Rpt. 11.

Lloyd's Register of Shipping.  
SURVEYS FOR FREEBOARD.Index. No. 2106  
(For London Office only.)

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having *Raised Quarter Deck & Forecastle*Port of Survey *Belfast*

(Type of Superstructures.)

Date of Survey *Sept 30<sup>th</sup> 1932*

Ship's Name

Nationality and Port of Registry

Official Number

Gross Tonnage

Date of Build

*CARNDUFF**British  
Belfast**129633**257**1910-7*Name of Surveyor *John K. Williams*Moulded Dimensions: Length *125.25* Breadth *22.47* Depth *10.5*  
Moulded displacement at moulded draught = 85 per cent. of moulded depth *508* tons  
Coefficient of fineness for use with Tables *.708*Particulars of Classification *+100A1*  
*S.S. Reg. No 3. 7.24.*  
*S.S. Reg. No 1-28.*

## Depth for Freeboard (D)

Moulded depth ... .. *10.5*Stringer plate ... .. *.03*

Heating on exposed deck

 $T \left( \frac{L-S}{L} \right) =$ Depth for Freeboard (D) = *10.53*

## Depth correction

(a) Where D is greater than Table depth

 $(D - \text{Table depth}) R =$   
 $(10.53 - 8.35) \times .963 = + 2.10$ 

(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) *22.47*Standard Round of Beam =  $\frac{B \times 12}{50} =$  *5.39*Ship's Round of Beam = *5.5*Difference *.23*Restricted to *.5078*Correction =  $\frac{\text{Diff}^2}{4} \times \left( 1 - \frac{S_1}{L} \right) =$  *.23*  $\left( 1 - \frac{.4922}{125.25} \right) =$  *-.03*

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ...	✓		✓		
" overhang ...	✓		✓		
R.Q.D. enclosed ...	<i>46'-0"</i>	<i>46.00</i>	<i>2'-9"</i>	<i>2.75</i> <i>3.169</i>	<i>39.92</i>
" overhang ...	✓		✓		
Bridge enclosed ...	✓		✓		
" overhang aft ...	✓		✓		
" overhang forward ...	✓		✓		
Forecastle enclosed ...	<i>18'-9"</i>	<i>15.64</i>	<i>6'-9"</i> FROM STEEL DECK		<i>15.64</i>
" overhang ...	✓		✓		
Trunk aft ...	✓		✓		
" forward ...	✓		✓		
Tonnage opening aft ...	✓		✓		
" forward ...	✓		✓		
Total ...	<i>64.75</i>	<i>61.64</i>			<i>55.56</i>

Standard Height of Superstructure *6.00*" " R.Q.D. *3.169*Deduction for complete superstructure *18.53*Percentage covered  $\frac{S}{L} =$  *51.70%*"  $\frac{S_1}{L} =$  *49.22%*"  $\frac{E}{L} =$  *44.36%*Percentage from Table, Line A. *27.20*

(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 = *18.53*  $\times$  *.2720* = *-5.04*

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	<i>22.52</i>	1		<i>22.52</i>	<i>22.00</i>	<i>22.00</i>	1		<i>22.00</i>
$\frac{1}{2}$ L from A.P. ...	<i>10.02</i>	4		<i>40.08</i>	<i>9.48</i>	<i>9.48</i>	4		<i>37.92</i>
$\frac{3}{4}$ L " ...	<i>2.48</i>	2		<i>4.96</i>	<i>2.37</i>	<i>2.37</i>	2		<i>4.74</i>
Amidships ...		4					4		
$\frac{3}{4}$ L from F.P. ...	<i>4.96</i>	2		<i>9.92</i>	<i>5.33</i>	<i>5.33</i>	2		<i>10.66</i>
$\frac{1}{2}$ L " ...	<i>20.04</i>	4		<i>80.16</i>	<i>21.33</i>	<i>21.33</i>	4		<i>85.32</i>
F.P. ...	<i>45.05</i>	1		<i>45.05</i>	<i>48.00</i>	<i>48.00</i>	1		<i>48.00</i>
Total ...				<i>202.69</i>					<i>208.64</i>

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) =$  *202.69*  $\frac{.4915}{5.95} \left( .75 - \frac{.2585}{125.25} \right) - .16$  *no sheer deduction allowed.*

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 = *10.53*Summer freeboard = *.81*Moulded draught (d) = *9.72*

Deduction for Tropical freeboard and addition for

Winter freeboard =  $\frac{d}{4}$  inches = *2.43* = *2\frac{1}{2}*Addition for Winter North Atlantic Freeboard (if required) = *2"*

## Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta =$ 

Tons per inch immersion at summer load water line

T =

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

=

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

Correction for coefficient  $\frac{.708 + .68}{1.36} = \frac{1.388}{1.36}$ 

+ -

Depth Correction ... .. *2.10* -Deduction for superstructures ... .. - *5.04*Sheer correction ... .. - *hil*Round of Beam correction ... .. - *.03*

Correction for Thickness of Deck amidships ... ..

Other corrections, scantlings, etc. ... ..

Summer Freeboard = *9.82*

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

Tropical Fresh Water Line above Centre of Disc ...		Tropical Fresh Water Freeboard ...	
Fresh Water Line " " ...		Fresh Water " " ...	
Tropical Line " " ...		Tropical " " ...	
Winter Line below " " ...	<i>2\frac{1}{2}</i>	Winter " " ...	
Winter North Atlantic Line " " ...		Winter North Atlantic " " ...	



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## PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS											
Description of Hatchway ... ..				MAIN HATCH.	ESCAPE HATCH.	BUNKER HATCH.					
Dimensions of Hatchway ... ..				45'-0" x 13'-0"	21" x 23"	6'-9" x 12'-0"					
COAMINGS	{	Height above Deck ...	42" ✓	30" ✓	SKETCH						
		Thickness { Sides ...	3" ✓	5" ✓							
		{ Ends ...	8" ✓	16" ✓							
		Stiffeners ... ..		None.							
Brackets, Stays ...				None.							
HATCH BEAMS	{	Number ... ..	4. ✓	None.	FOR FURTHER PARTICULARS SEE ON BACK PAGE. ✓						
		Spacing ... ..	9'-5" ✓								
		Scantling and Sketch		26" deep ✓ 40" thick ✓ angle iron ✓ bolt 3x3x40. ✓							
		Bearing Surface ..	3" ✓								
FORE AND AFTERS	{	Number ... ..	3 ✓	None.	FOR FURTHER PARTICULARS SEE ON BACK PAGE. ✓						
		Spacing ... ..	3'-3" ✓								
		Unsupported Lengths ...	9'-5" ✓								
		Scantling* and Sketch		Wood batten 8 1/2" x 7 1/4" ✓ Sides 7 1/2" x 7 1/4" ✓							
Bearing Surface ... ..			3" ✓								
HATCH COVERS	{	Material ... ..	Wood. ✓	Wood. ✓	Wood. ✓						
		Thickness ... ..	2 1/2" ✓	2 1/2" ✓	2 1/2" ✓						
		How fitted ... ..	athwart. ✓	athwart. ✓	FY A. ✓						
		Bearing Surface ...	2" ✓	1" ✓	2 1/2" ✓						
Spacing of Cleats ... ..				21" ✓	10 1/2" ✓						
Number of Tarpaulins ... ..				2. ✓	1. ✓						

\*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. ✓*

Are lashings provided in accordance with rule requirements? *yes. ✓*

Particulars of fiddley, funnel and ventilator coamings:—

Tunnel thro' casing. Opening protected by steel caps.  
2 stockhold ventilator. 5'-8" steel coamings.

~~Tiddle gratings fitted with steel covers. Hinges require repairing.~~

Particulars of Flush Bunker Scuttles:—

Particulars of Companionways :—

Companionway to accommodation fwd. Door into steel trunk. Opening 5'-0" x 2'-0". 10" sill. 1 1/2" panelled teakwood door. 1/2" thick panels. ~~Door requires repairing.~~ Manipulated from both sides. ✓

Companionway to accommodation aft. Door into steel trunk. Opening 4'-5" x 21". 16" sill. 1 1/2" panelled teakwood door. 1/2" thick panels. Manipulated from both sides. ✓

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

Forecastle deck. 2 ventilators 5" dia x 30" steel coamings to accommodation. Screwed mushroom covers. ✓  
1 ventilator to forecabin, below main deck. Particulars not obtained.

Fore deck.	1	"	"	"	"	"	"	"	"	6" dia x 36" steel coaming.
	1	"	"	"	"	"	"	"	"	fore hold. 9" dia x 36" steel coaming. <del>Coaming requires to be repaired.</del>
	1	"	"	"	"	"	"	"	"	Steel cover & canvas cover. <del>used</del>

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

1 air pipe from fore peak inside open fore-castle. ~~air pipe broken.~~

Wood plugs fitted

Particulars of Gangway Cargo and Coaling Ports :—



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Particulars of Scupper and Sanitary Discharge Pipes:—

1" scupper pipe from after accommodation to engine room bilge.

Particulars of Side Scuttles:—

In crew space forward below freeboard deck. Fitted with deadlights.  
" " " aft " raised quarter " " " " " "

Particulars of Guard Rails:—

On raised quarter deck, steel bulwarks, 36" high. Efficient.  
" freeboard " " " " 41" " "  
" forecastle " " guard rails, 2 rows, 39" high. " "

Particulars of Gangways, Lifelines, etc.:—

~~No permanent fittings for lifelines in forward well.~~

Fittings provided on each side of fore deck & one lifeline placed on board which can be fitted on either side. The fore hatch forms an efficient Gangway.

Particulars of Freeing Arrangements.

	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
Raised Quarter Deck After Well ... ..	46.0' /	36"	2'-11" x 1'-6 1/2"	3	13.5 sq ft	11.1 sq ft
Forward Well ... ..	60.5' /	41"	2'-5" x 1'-10"	4	16.1 sq ft	12.6 sq ft
State position of each freeing port ... .. } Raised Quarter Deck 13" 1', 28' & 35' from R.O.D. bulkhead (P. and A. position and height above deck edge) } After Well:— Deck 13" 7', 28', 44' & 55' from fore-castle bulkhead State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— } Shutters (Hinged) /						
Additional area where sheer is less than standard.						

Particulars of Superstructures, Trunks, Casings, Deckhouses.

	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead ... ..	✓							
Raised Quarter Deck Bulkhead ...	—	.25" /	5" x 2 1/2" x 37" BA.	26" /	none intermediate two at top /	✓		
Bridge, After Bulkhead ... ..	✓							
Bridge, Forward Bulkhead ... ..	✓							
Forecastle Bulkhead ... ..	✓							
Trunk, Aft ... ..	✓							
Trunk, Forward ... ..	✓							
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	.31" /	.25" /	3" x 3" x 37"	36" /	bracketed top only /	4 @ 4' 6" x 28"	18" /	6' 6"
Exposed Machinery Casings on Super-structure Decks ... ..	✓							
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ... ..	✓							
Deckhouses on Flush Deck Ships ...	✓							

Particulars of Closing Appliances (state if capable of being manipulated from both sides).

Poop Bulkhead ... ..	✓
Raised Quarter Deck Bulkhead ...	✓
Bridge, After Bulkhead ... ..	✓
Bridge, Forward Bulkhead ... ..	✓
Forecastle Bulkhead ... ..	✓
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	1/2" thick hinged steel doors in halves. Not secured.
Exposed Machinery Casings on Super-structure Decks ... ..	✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ... ..	✓
Deckhouses on Flush Deck Ships ...	✓



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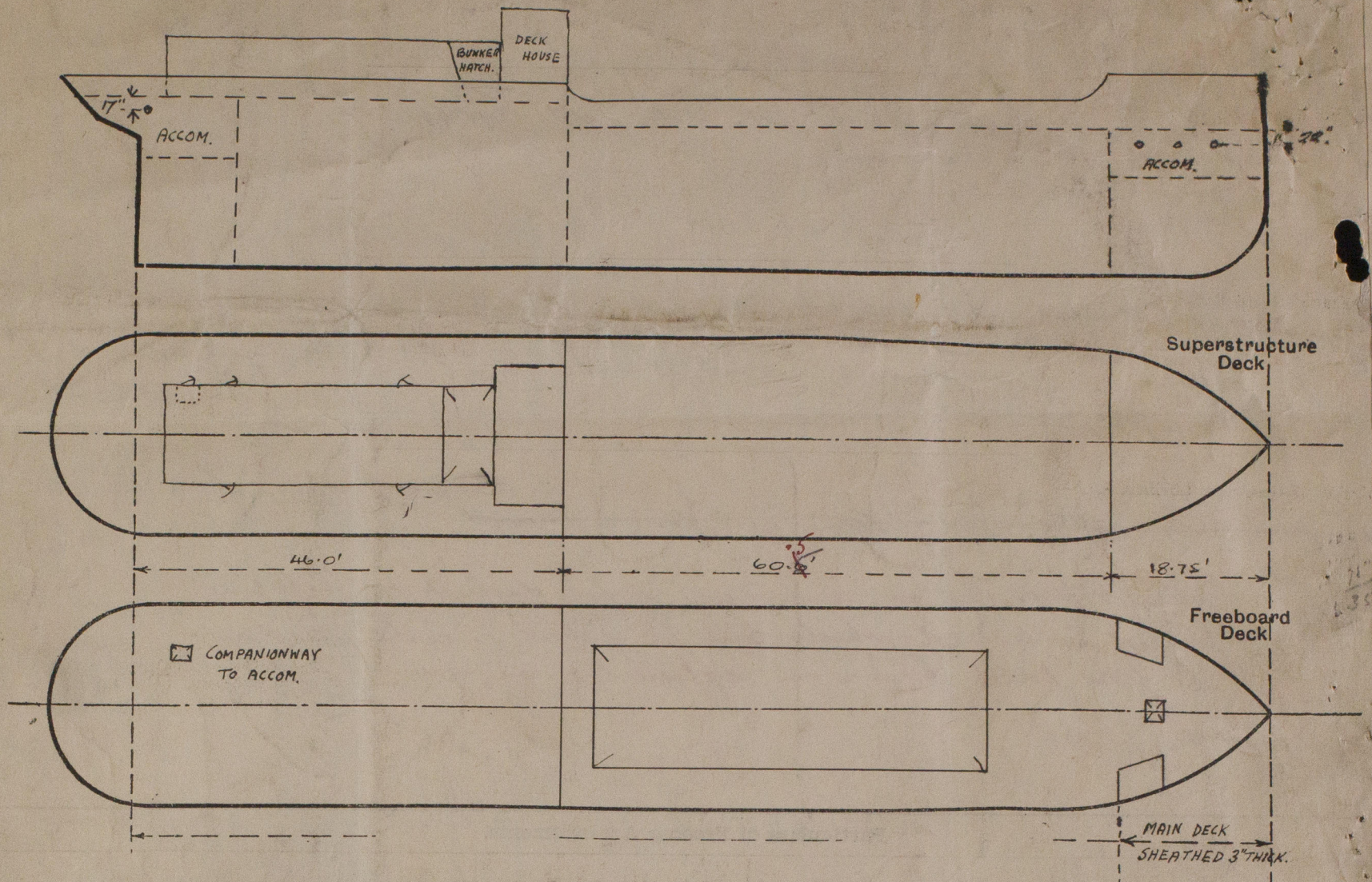
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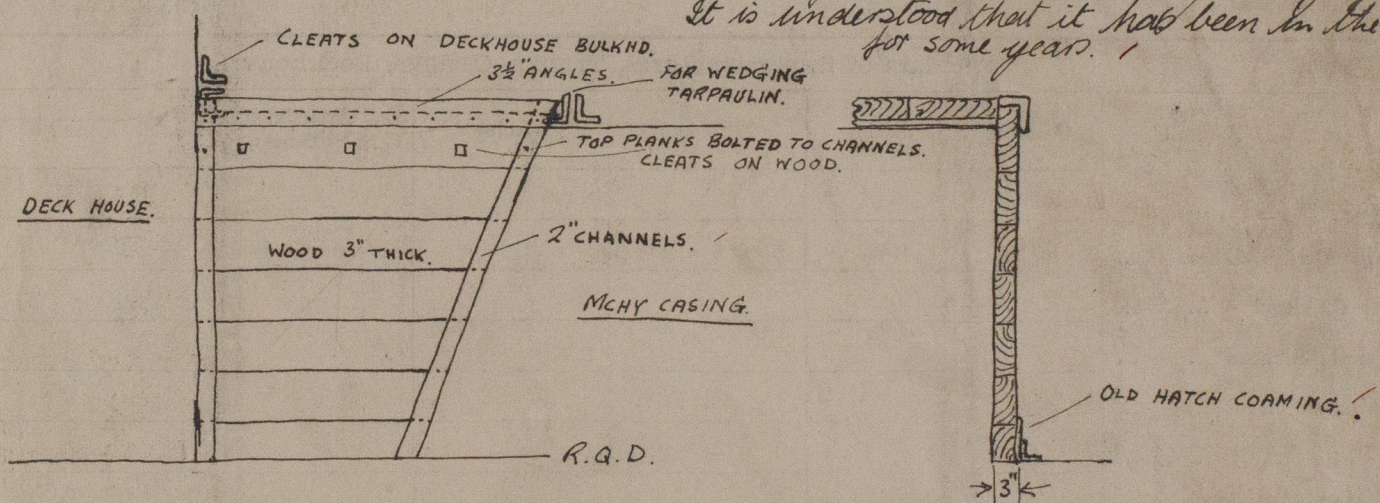
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Superstructure bulkheads, trunks, deckhouses, casings, cargo and coaling hatchways, extent and thickness of sheathing on the freeboard deck, gangway, cargo coaling ports, and any other openings, etc., which would affect the seaworthiness of the ship are to be shewn on the following sketches:—



State any special features in the construction of the ship:—

PARTICULARS OF BUNKER HATCH.



*This structure is in my opinion efficient, taking into consideration that it is adequately protected by the deck house fore and the machinery casing aft. It is understood that it has been in the vessel for some years.*

Builder's name and yard number Ramage & Ferguson Ltd. Leith.

Names of sister ships

Owners Housten Bros Ltd

Fee £ 3 : 8 : 0

Received by me



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