

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

Index. No. 32843  
(For London Office only.)

Mch. No. 7413

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having POOP - Bridge & Forecastle.

(Type of Superstructures.)

Port of Survey ManchesterDate of Survey 14th Dec. 1931Name of Surveyor ChallieParticulars of Classification +100A1

Ship's Name

"GRACEFIELD"

Nationality and Port of Registry

British  
Newcastle

Official Number

149444

Gross Tonnage

4631

Date of Build

1928-8Moulded Dimensions: Length 389.7 Breadth 53.25 Depth 27.83  
Moulded displacement at moulded draught = 85 per cent. of moulded depth 10938 tonsCoefficient of fineness for use with Tables .780 ✓

Depth for Freeboard (D)

Moulded depth ... .. 27.83Stringer plate ... .. .04

Sheathing on exposed deck

 $T \left( \frac{L-S}{L} \right) =$ Depth for Freeboard (D) = 27.87 ✓

Depth correction

(a) Where D is greater than Table depth  
(D - Table depth) R = $(27.87 - 25.98) \cdot 2.998 = +5.67$ (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) 53.25Standard Round of Beam =  $\frac{B \times 12}{50} = 12.78$ Ship's Round of Beam = 13.25Difference .47

Restricted to

Correction =  $\frac{\text{Diff}}{4} \times \left( 1 - \frac{S_1}{L} \right) = \frac{.47}{4} \times .184 = -.02$ 

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ...	<u>36.25</u>	<u>36.25</u>	<u>7'-3"</u>	<u>7.25</u> <u>7.397</u>	<u>35.53</u>
" overhang ...					
R.Q.D. enclosed ...					
" overhang ...					
Bridge enclosed ...	<u>249.75</u>	<u>249.75</u>	<u>8'-0"</u>	✓	<u>249.75</u>
" overhang aft ...					
" overhang forward ...					
Fore enclosed ...	<u>32.00</u>	<u>32.00</u>	<u>7'-0"</u>	<u>7.0</u> <u>7.397</u>	<u>30.28</u>
" overhang ...					
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" forward ...					
Total ...	<u>318.00</u>	<u>318.00</u>			<u>315.56</u>

Standard Height of Superstructure 7.397

" " R.Q.D. ✓

Deduction for complete superstructure 41.31Percentage covered  $\frac{S}{L} = 81.61$  ✓"  $\frac{S_1}{L} = 81.61$ "  $\frac{E}{L} = 80.98$ Percentage from Table, Line A. ✓  
(corrected for absence of forecastle (if required))Percentage from Table, Line B. 76.52  
(corrected for absence of forecastle (if required))

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

Deduction =  $41.31 \times .7652 = -31.61$  ✓

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	<u>48.97</u>	1		<u>48.97</u>	<u>54</u>	<u>54.00</u>	1		<u>54.00</u>
$\frac{1}{4}$ L from A.P. ...	<u>21.79</u>	4		<u>87.16</u>	<u>22.52</u>	<u>22.52</u>	4		<u>90.08</u>
$\frac{2}{4}$ L " ...	<u>5.39</u>	2		<u>10.78</u>	<u>5.63</u>	<u>5.63</u>	2		<u>11.26</u>
Amidships ...	-	4		-	-	-	4		-
$\frac{3}{4}$ L from F.P. ...	<u>10.78</u>	2		<u>21.56</u>	<u>11.65</u>	<u>11.65</u>	2		<u>23.30</u>
$\frac{1}{4}$ L " ...	<u>43.58</u>	4		<u>174.32</u>	<u>46.61</u>	<u>46.61</u>	4		<u>186.44</u>
F.P. ...	<u>97.94</u>	1		<u>97.94</u>	<u>108.5</u>	<u>108.50</u>	1		<u>108.50</u>
Total ...				<u>440.73</u>					<u>473.58</u>

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{32.85}{18} \left( .75 - \frac{.408}{.342} \right) = -.62$  ✓

If limited on account of midship superstructure. ✓

Mean actual sheer aft = EXCESS  
Mean standard sheer aftMean actual sheer forward = EXCESS.  
Mean standard sheer forwardLength of enclosed superstructure forward of amidships = .33 L" " aft of " = .3 L

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = 27.87 ✓Summer freeboard = 3.90Moulded draught (d) = 23.97 ✓

Deduction for Tropical freeboard and addition for

Winter freeboard =  $\frac{d}{4}$  inches = 5.99 ✓

Addition for Winter North Atlantic Freeboard (if required) = ✓

Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta = 11145$  tons

Tons per inch immersion at summer load water line

 $T = 41.90$  tonsDeduction =  $\frac{\Delta}{40 T}$  inches= .665

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient  $\frac{.78 \times .68}{1.36} \cdot \frac{1.46}{1.36} =$ Depth Correction ... .. 5.67Deduction for superstructures ... .. 31.61Sheer correction ... .. .62Round of Beam correction ... .. .02

Correction for Thickness of Deck amidships ... ..

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

Summer Freeboard = 46.76SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, ~~Wood~~ Steel, Deck:—Tropical Fresh Water Line above Centre of Disc ... .. 12 3/4Fresh Water Line " " ... .. 6 3/4Tropical Line " " ... .. 6Winter Line below " " ... .. 6

Winter North Atlantic Line " " ... ..

Tropical Fresh Water Freeboard ... .. 3'-10 3/4Fresh Water " " ... .. 2'-10Tropical " " ... .. 3'-24 3/4Winter " " ... .. 3'-4 3/4

Winter North Atlantic " " ... ..

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# PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway	Freeboard Deck No. 1	Super. Deck No. 2	Freeboard Deck No. 2	Super. Deck No. 3	Super. Deck No. 4	Freeboard Deck No. 4	Freeboard Deck No. 5	Pop. Deck	
Dimensions of Hatchway	29'3" x 20'0"	31'6" x 20'0"	31'6" x 20'0"	22'6" x 18'0"	31'6" x 20'0"	31'6" x 20'0"	29'3" x 20'0"	6'9" x 8'0"	
COAMINGS	Height above Deck	3'3"	2'6"	2'6"	2'8"	2'6"	3'3"	2'6"	
	Thickness	.44	.44	.44	.44	.44	.44	.44	
	Sides	.44	.44	.44	.44	.44	.44	.44	
	Ends	.44	.44	.44	.44	.44	.44	.44	
COAMINGS	Stiffeners	7x3x4 BA	8x3x4 BA	12x4x6 BA	✓	8x3x4 BA	10x3x6 BA	7x3x4 BA	
	Brackets, Stays	Bulb plate stays	Bulb plate stays	Bulb plate stays	✓	Bulb plate stays	Bulb plate stays	Bulb plate stays	
		✓	✓	✓	✓	✓	✓	✓	
		✓	✓	✓	✓	✓	✓	✓	
HATCH BEAMS	Number	5	5	5	4	5	5	5	
	Spacing	4'10"	5'3"	5'3"	4'6"	5'3"	5'3"	4'10"	
	Scantling and Sketch	19"x36" sub	14"x36" sub	20"x36" sub	14"x32" sub	14"x36" sub	20"x36" sub	19"x36" sub	
	Bearing Surface	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"	
FORE AND AFTERS	Number								
	Spacing								
	Unsupported Lengths								
	Scantling* and Sketch	None	None	None	None	None	None	None	
HATCH COVERS	Material	Wood	Wood	Wood	Wood	Wood	Wood	Wood	
	Thickness	3"	3"	3"	3"	3"	3"	3"	
	How fitted	For 7 apt	For 7 apt	For 7 apt	For 7 apt	For 7 apt	For 7 apt	For 7 apt	
	Bearing Surface	3"	3"	3"	3"	3"	3"	3"	
Spacing of Cleats	24" max	24"	24"	24"	24"	24"	24"	24"	
Number of Tarpaulins	3	3	3	3	3	3	3	3	
<p>*Are wood fore and afters steel shod at all bearing surfaces? <i>None</i></p> <p>Are battens and wedges efficient and in good condition? <i>Yes</i></p> <p>Are tarpaulins in good condition and in accordance with rule requirements? <i>Yes</i></p> <p>Are lashings provided in accordance with rule requirements? <i>Yes</i></p>									

Particulars of fiddle, funnel and ventilator coamings:— *Funnel connected direct to fiddle top without open air casing. One grating each side 3'5" x 10'0" and one grating forward 5'8" x 12'6" with steel hinged covers permanently attached.*

*2 stokehold ventilators 33" dia. & 2 engine room ventilators 23" dia. sheet steel, connected direct to fiddle top.*

*Brass hatch on fiddle top 8'0" x 14'6" coamings 1'6" high. 3" wood hatch covers & 3" bearing surface.*

*Engine room skylight of steel, with substantial steel flaps & circular glasses & frames.*

## Particulars of Flush Bunker Scuttles:—

*None*

## Particulars of Companionways:—

*None*

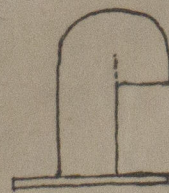
## Particulars of Ventilators in exposed positions on freeboard and superstructure decks:—

Position	Space	No.	Dia.	Coaming Height	Position	Space	No.	Dia.	Coaming Height
Star	FPT	1	6"	30"	Bridge Deck	Lower Bunkers	2	12"	30"
"	"	2	16"	35 1/2"	"	Reserve	2	20"	30"
Bridge Deck	"	2	16"	35 1/2"	"	Lower Bunkers	4	8"x4"	27"
"	"	2	21"	35 1/2"	Pop. Deck	Alpha Deck	1	6"	30"
"	"	2	16"	35 1/2"	Pop. Deck	Alpha Deck	1	6"	30"

*Closing Upframes  
Wood plugs &  
Canvas covers.*

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

Position	Purpose	No.	Dia.	Material	Height	Position	Purpose	No.	Dia.	Material	Height
Star Deck	No. 1 Deck	1	3"	Steel	24 1/2"	Bridge Deck	No. 4 Tank	2	6"	Steel	19"
Well Deck	"	1	3"	"	24 1/2"	"	"	4	3"	"	23 1/2"
Bridge Deck	No. 2 Tank	4	2 1/2"	"	24 1/2"	Pop. Deck	"	2	3"	"	23 1/2"
Bridge Deck	No. 3 "	2	6"	"	19"						



*No means  
Height of casing.*

## Particulars of Gangway Cargo and Coaling Ports:—

*None*



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### Particulars of Scuppers and Sanitary Discharge Pipes —

Particulars of Scuppers and Sanitary Discharge Pipes	Side	N <sup>o</sup>	Size	Type	Position	Material
Star	Star	3	4"	NR Valve	3' 5" below gunband dk.	Brass
Bridge Sh. Sparc	Star.	3	4"	" "	" " " "	"
Pastry Waste Pipe	Port	1	2"	" "	" " " "	"
Captain's Room Waste Pipe	Star.	1	2"	" "	" " " "	"

No positive means of closing.

## Particulars of Side Scuttles :

Compass & one star in fore peak space above freeboard deck, 11" dia. with brass frames & fitted with deadlights.  
One " " One " " " " " below " " " " " " " "  
6 " " 6 " " post space above freeboard deck, 11" " " " " " " "

Particulars of Guard Rails :—

Guard rails round poop, bridge & forecable 3'-6" high & bulwarks in forward & after wells 3'-9" high.  
 Rails round poop & forecable 1" dia. at top & one  $\frac{7}{8}$ " dia. rod, with substantial stanchions.  
 Rails round bridge deck 1" dia. rod at top & two  $\frac{7}{8}$ " dia. rods with substantial stanchions.

Particulars of Gangways, Lifelines, etc. :—

Tangway on starboard side of after well extending from bridge to prop  $8" \times 2\frac{1}{2}"$  Pine with stanchions  $3'-6"$  high & steel wire life line each side. Tangway supported by two substantial angle brackets.

## Particulars of Freeing Arrangements.

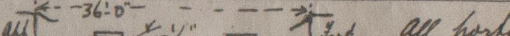
	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
ter Well ... ..	36'-0"	3'-9"	3'-6" x 1'-6"	2	10.5 sq. ft.	10.0 sq. ft.
rward Well ... ..	36'-0"	3'-9"	3'-6" x 1'-6"	2	10.5 sq. ft.	10.0 sq. ft.

ate position of each freeing port ... ..  
, and A. position and height above deck edge)

After Well :—  
Forward Well :—

ate whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:

Additional area where sheer is less than standard.


 all parts  
 $13\frac{1}{2}$  above deck.

Each fore & aft fitted with 1" dia. fore & aft bar & centre.

## Particulars of Superstructures, Trunks, Casings, Deckhouses.

	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Bulkhead ... ..	.40	.36	6 x 3 x .40 angles	30"	Lugs top & bottom	4'-1" x 3'-1" P & S.	18"	4'-3"
Quarter Deck Bulkhead ...	None	✓	✓	✓	✓	✓	✓	✓
ge, After Bulkhead ... ..	.44	.40	4 x 3 x .4 Angles	30"	None	4'-1" x 3'-0" P & S.	18"	8'-0"
ge, Forward Bulkhead ... ..	.44	.40	9 x 3 x .50 BA.	30	Lugs top & bottom	4'-10" x 3'-1" P & S.	18"	8'-0"
astle Bulkhead ... ..	.30	.30	3 1/2 x 3 x .4 angles	30"	None	4'-6" x 4'-0" cranked	18"	4'-0"
k, Aft ... ..	None	✓	✓	✓	✓	✓	✓	✓
c, Forward ... ..	None	✓	✓	✓	✓	✓	✓	✓
ed Machinery Casings on Free- ord or Raised Quarter Decks ...	None	✓	✓	✓	✓	✓	✓	✓
ed Machinery Casings on Super- ecture Decks ... ..	.30	.30	5 x 3 x .4 angles	4'-6"	Continuous to Main dk Brackets at top	2'-9" x 5'-3" P & S.	18"	4'-3"
nery Casings within Superstruc- s not fitted with Class I Closing lances ... ..	.30	.26	5 x 3 x .4 angles	4'-6"	Continuous	2'-9" x 5'-2" P & S.	18"	8'-0"
ouses on Flush Deck Ships ...	None	✓	✓	✓	✓	✓	✓	✓

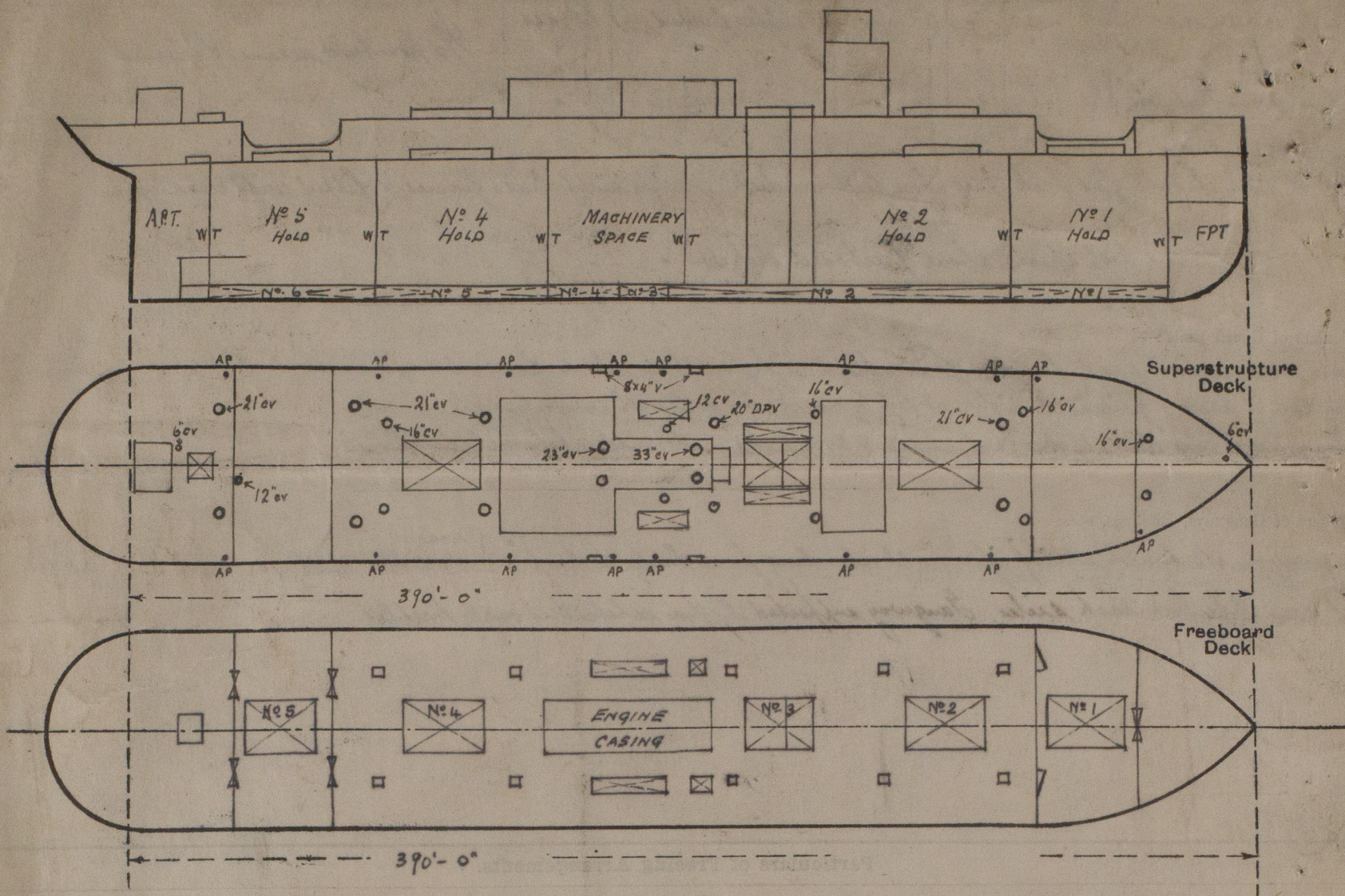
## Particulars of Closing Appliances (state if capable of being manipulated from both sides).

Poop Bulkhead	... ..	Channels & shipping boards to full height of opening. Channels riveted to bulkhead.
Raised Quarter Deck Bulkhead	... ..	Bolted plate secured by hook bolts not passing through bulkhead: spaced 11" apart.
Bridge, After Bulkhead	... ..	None -
Bridge, Forward Bulkhead	... ..	Temporary bolted plates, secured by hook bolts not passing through bulkhead spaced 11" apart.
Forecastle Bulkhead	... ..	Hinged steel doors fastened by 6 heavy steel dogs in each.
Exposed Machinery Casings on Free-board or Raised Quarter Decks	... ..	Channels & shipping boards. A full height of openings. Channels riveted to bulkhead.
Exposed Machinery Casings on Superstructure Decks	... ..	None -
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	... ..	Hinged steel doors capable of being manipulated from both sides.
Deckhouses on Flush Deck Ships	... ..	Hinged steel doors capable of being manipulated from both sides.
		None



Gracefield.

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 shewn on the following sketches:—



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

2 Bulkhead hatches on Superstructure Deck abt. No 3 hatch 22'-6" x 4'-0" coamings 2'-6" high. } Covers 3" thick  
 2 " " " " " amidships 11'-3" x 4'-0" " 2'-6" " }  
 2 " " " " " Freeboard Deck 20'-3" x 4'-0" coamings 9 x 3 1/2 x 5 BA. } Covers 2 1/2" thick  
 1 " " " " " port side 6'-9" x 4'-0" " 9 x 3 1/2 x 5 BA. }  
 1 " " " " " star. side 4'-6" x 4'-0" " 9 x 3 1/2 x 5 BA. }  
 10 Trimming hatches on freeboard deck 28 1/2" x 24" coamings 9 x 3 1/2 x 5 BA.

all 3" with 1/2" bolts

Builder's name and yard number

Names of sister ships

Owners

Fee £ 12 : 15 : 0

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