

Lloyd's Register of Shipping.  
SURVEYS FOR FREEBOARD.

19 AUG 1932

Computation of Freeboard for Steamer, Sailing Ship, Tanker					Port of Survey <b>NEWCASTLE</b>	
having <b>POOP BRIDGE &amp; FORECASTLE</b>					Date of Survey <b>17<sup>th</sup> AUG. 1932</b>	
Ship's Name <b>GORDIAN</b> <b>SPRINGHAM</b> (Type of Superstructures.)					Name of Surveyor <b>J. Young</b>	
Ship's Name <b>NERVA</b>		Nationality and Port of Registry <b>BRITISH</b> <b>NEWCASTLE</b>	Official Number <b>148056</b>	Gross Tonnage <b>3020</b> <b>2874</b> <i>net 1146 3mo</i>	Date of Build <b>1924</b>	
Moulded Dimensions: Length <b>334.0</b> Breadth <b>44.33</b> Depth <b>24.0</b>					Particulars of Classification <b>+ 100 R.I.</b>	
Moulded displacement at moulded draught = 85 per cent. of moulded depth <b>6520</b> tons					<b>S.S. Nava. No. 1-27</b>	
Coefficient of fineness for use with Tables <b>.756</b>						

Depth for Freeboard (D)		Depth correction		Round of Beam correction	
Moulded depth	24.0	(a) Where D is greater than Table depth (D - Table depth) R =		Moulded Breadth (B)	44.33
Stringer plate	.03	(24.03 - 22.27) 2.569 = + 4.52"		Standard Round of Beam = $\frac{B \times 12}{50}$	10.64"
Sheathing on exposed deck $T \left( \frac{L-S}{L} \right) =$		(b) Where D is less than Table depth (if allowed) (Table depth - D) R =		Ship's Round of Beam	11"
Depth for Freeboard (D) =	24.03	If restricted by superstructures		Difference	.36"
				Restricted to	
				Correction = $\frac{\text{Diff}}{4} \times \left( 1 - \frac{S_1}{L} \right)$	$\frac{.36}{4} \times .6236 = -.06$

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ...	25.67				
" overhang ...	24.66	25.67	7'-0"		25.67
R.Q.D. enclosed ...	+ 2.54	.79			.79
" overhang ...	1.53				
Bridge enclosed ...	69.75	69.75	7'-0"		69.75
" overhang aft ...					
" overhang forward ...					
F'cle enclosed ...	27.5	27.50	7'-0"		27.50
" overhang ...	2.0	2.00			2.00
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" forward ...					
Total ...	126.45	125.69			125.69

Standard Height of Superstructure	6.84
" " R.Q.D.	
Deduction for complete superstructure	37.60
Percentage covered $\frac{S}{L} =$	37.87%
" " $\frac{S_1}{L} =$	37.64%
" " $\frac{E}{L} =$	37.64%
Percentage from Table, Line A. (corrected for absence of forecastle (if required))	
Percentage from Table, Line B. (corrected for absence of forecastle (if required))	25.49%
Interpolation for bridge less than .2L (if required)	
Deduction = 37.60 x 25.49 =	- 9.59"

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	43.40	1		43.40	45	45.00	1		45.00
$\frac{1}{2}$ L from A.P. ...	19.31	4		77.24	19	19.55	4		78.20
$\frac{2}{3}$ L " ...	4.77	2		9.54	5	4.87	2		9.74
Amidships ...		4			0		4		
$\frac{2}{3}$ L from F.P. ...	9.54	2		19.08	11	10.40	2		20.80
$\frac{1}{2}$ L " ...	38.62	4		154.48	41 1/2	41.71	4		166.84
F.P. ...	86.80	1		86.80	96	96.00	1		96.00
Total ...				390.54					416.58

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{26.04}{18} \left( .75 - \frac{189.5}{334} \right) = -.81"$$

If limited on account of midship superstructure.

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 =	Ft.	
Summer freeboard =	24.03	
Moulded draught (d) =	4.08	
	19.95	

## Deduction for Tropical freeboard and addition for

$$\text{Winter freeboard} = \frac{d}{4} \text{ inches} = 5"$$

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

## Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta =$ 

Tons per inch immersion at summer load water line

 $T =$ 

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

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

Correction for coefficient

	+	-
Depth Correction	4.52	-
Deduction for superstructures	-	9.59
Sheer correction	-	.81
Round of Beam correction	-	.06
Correction for Thickness of Deck amidships		
Other corrections, scantlings, etc.		

$$4.52 - 10.46 = - 5.94$$

$$\text{Summer Freeboard} = 49.05$$

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

Tropical Fresh Water Line above Centre of Disc	...
Fresh Water Line	"
Tropical Line	"
Winter Line	below
Winter North Atlantic Line	"

Tropical Fresh Water Freeboard	...
Fresh Water	"
Tropical	"
Winter	"
Winter North Atlantic	"



# PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS											
Description of Hatchway	...	...	N <sup>o</sup> 1	N <sup>o</sup> 2	N <sup>o</sup> 3	N <sup>o</sup> 4	UPPER DK		U.D. UNDER	BRIDGE DK	SADDLEBACK CASING TYP.
							CROSS BUNKER	CROSS BUNKER	FOOTLE TO STORE	SIDE BKR HATCHES	
Dimensions of Hatchway	...	...	41'-9" x 27'-0"	42'-9" x 29'-6"	39'-3" x 29'-6"	39'-3" x 29'-6"	6'-4" x 16'-3"	8'-0" x 18'-2"	4'-4" x 2'-0"	4'-3" x 2'-9"	4'-3" x 12'-9"
COAMINGS	{	Height above Deck	36"	36"	42"	42"	40"	9" B.A.	31"	10" B.A.	9" B.A.
		Thickness	.44	.48	.48	.44	.44		.44	.40	
		Stiffeners	7" x 3" B.A.	7" x 3" B.A.	7" x 3" B.A.	7" x 3" B.A.	5 1/2" x 3" x .44				
		Brackets, Stays	3 @ 2" dia	3 @ 2" dia	3 @ 2" dia	3 @ 2" dia					
HATCH BEAMS	{	Number	7	5-4"	4-11"	4-11"					
		Spacing	5-2 1/2"	5-4"	4-11"	4-11"					
		Scantling and Sketch	24" to 17" .40	AS N <sup>o</sup> 1	23" to 16" x .40	AS N <sup>o</sup> 3					
		Bearing Surface	5 1/2"	5 1/2"	5 1/2"	5 1/2"					
FORE AND AFTERS	{	Number									
		Spacing									
		Unsupported Lengths									
		Scantling* and Sketch									
HATCH COVERS	{	Material	W.P.						W.P.	W.P.	W.P.
		Thickness	3"						3"	3"	3"
		How fitted	F & A						2 1/2"	3"	2 1/2"
		Bearing Surface	3"						18"	20"	22"
Spacing of Cleats	...	...	25"	25"	24"	24"	24"	20"	18"	20"	24"
Number of Tarpaulins	...	...	2	2	2	2	2	2	2	2	2
*Are wood fore and afters steel shod at all bearing surfaces? <input checked="" type="checkbox"/> 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:—

Fidley gratings are protected by hinged steel covers  
 Funnel & Vents are in efficient condition  
 Engine Skylight well constructed of steel.

Particulars of Flush Bunker Scuttles:—

None.

Particulars of Companionways:—

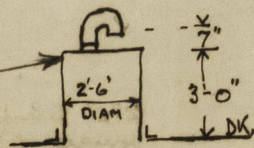
Poop to Crew. Steel built 5'-3" x 5'-6" x 6'-0"  
 Openings (2) 1'-11" x 4'-3" Sills 15"  
 Doors 1 1/2" Teak. (~~fastenings to repair~~)  
 capable of being secured from both sides

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

Upper Deck W<sup>o</sup> 1, 2, 3 & 4 Holes 15" diam. 3'-0" high.  
 " " " W<sup>o</sup> 2 15" diam 9'-4" high stayed to Bridge.  
 Bridge Deck Bunkers 14" diam 2'-7" high  
 Poop to Crew 6" " 12" "  
 U.D. to Tunnel 6" " 3'-0" "  
 Vents are all well constructed in accordance with requirements  
 Wood Plugs & Covers are on board.

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

Footle to F.P. 3 1/2" diam 16" to mouth  
 Upper Deck D.B. 2 1/2" " 33 1/2" to mouth  
 Bridge " " 2 1/2" " 10" high to mouth  
 U.D. to Air Peak 6" " 43" " "  
 Wood plugs attached by chains to air pipes



Particulars of Gangway Cargo and Coaling Ports:—

None.



## Particulars of Scuppers and Sanitary Discharge Pipes:—

Scuppers on Weather decks all thro. gunwale bar.  
none elsewhere.

Sanitary Discharges all iron pipe fitted with storm valves.

## Particulars of Side Scuttles:—

In. Crew Space. 8" diam. all fitted with hinged iron deadlights.

## Particulars of Guard Rails:—

Fore. 3'0" high. Stanchions 4'-6" apart 2 Rails

U. D. Bulwark 3'-7" high Stays 5" x 3/2" x 40 Space 5'10" Rail 6 1/2" x 3" B.A.

Bridge " 3'-1" " 5" x 3/2" x 40 6'-3" " 4" x 3" x 40.

Poop. 3'-2" Stanchions 4'-3" apart 2 Rails

## Particulars of Gangways, Lifelines, etc.:—

None.

Lifelines of 2 1/4" wire rope fitted from Br. to F'de, and Br. to Poop.

## Particulars of Freeing Arrangements.

	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
After Well ... ..	103'-6"	3'-7"	3'-6" x 1'-3 1/2"	9	40.7 $\frac{1}{2}$	20.7 $\frac{1}{2}$
Forward Well ... ..	103'-7"	3'-7"	3'-7" x 1'-3 1/2"	9	41.0 $\frac{1}{2}$	20.7 $\frac{1}{2}$
State position of each freeing port ... .. } After Well:— From Bridge 6'-3", 18'-0", 29'-0", 41'-4", 53'-6", 64'-9", 76'-4", 87'-9", 94'-0" SILL 14" (F. and A. position and height above deck edge) } Forward Well:— 5'-8", 12'-2", 18'-0", 29'-4", 41'-7", 53'-2", 64'-6", 79'-9", 88'-6" SILL 14" 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.						
				FORWARD WELL. SHUTTERS & 1 BAR. AFT WELL 1 BAR.		

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

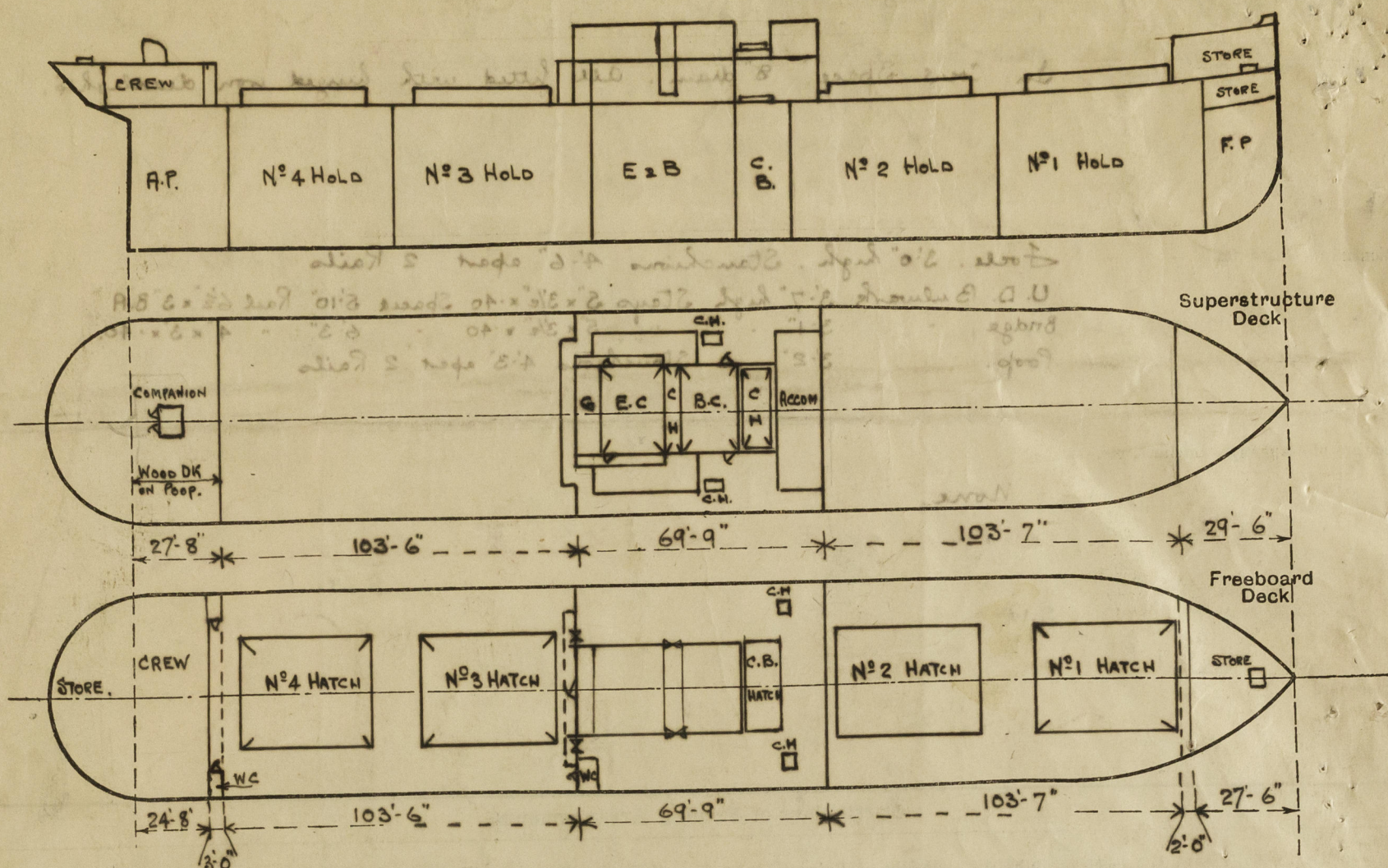
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead ... ..	42'	30'	5 1/2 x 3 1/2 x 44'	2'-6"	Bkts & Lugs	✓	✓	7'-0"
Raised Quarter Deck Bulkhead ...		30'						
Bridge, After Bulkhead ... ..	40'	30'	3" x 2 1/2" x 35'	2'-4"	NONE	2'-7" x 4'-0" 3'-0" x 4'-6"	24" 18"	7'-0"
Bridge, Forward Bulkhead ... ..	44'	44'	8" x 3" B.A.	2'-6"	Bkts & Lugs bottom	✓	✓	7'-0"
Forecastle Bulkhead ... ..	30'	30'	3" x 2 1/2" x 30'	2'-3" & 3'-0"	none	1'-10" x 4'-6" 3'-1" x 4'-5"	18" 18"	7'-0"
Trunk, Aft ... ..								
Trunk, Forward ... ..								
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	40'	30'	3 1/2" x 3" x 40'	2'-6"	BKTS TOP	1'-9" x 3'-9"	21"	7'-0"
Exposed Machinery Casings on Super-structure Decks ... ..	30'	30'	3 1/2" x 3" x 30'	2'-6"	NONE	1'-9" x 4'-6"	17"	7'-3"
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 ... ..	2 1/2" Shifting Boards in full height riveted channels Hinged steel door operated both sides (+ Engine Room)
Bridge, Forward Bulkhead ... ..	✓
Forecastle Bulkhead ... ..	Slam boards in riveted channels. Hinged steel doors
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	Hinged steel doors operated both sides.
Exposed Machinery Casings on Super-structure Decks ... ..	Hinged steel doors operated both sides.
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ... ..	
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:—

THE VESSEL WAS SURVEYED IN DRY DOCK

WHERE SHE IS UNDERGOING A SMALL PART

ONLY OF SPECIAL SURVEY.

NO TIMBER ASSIGNMENT REQUIRED.

	POOP DK TO STORE	COAL HATCH UPPER DK.
SIZE	3'2" x 3'0"	2'0" x 2'6"
COAMING	18"	30"
THICK	.40	.40
COVERS	W.P. 3"	W.P. 3"
B.S.	2 1/2"	2 1/2"
CLEATS	26"	16"
TARPS.	2	2

DRAFT	Δ	T.P.1
20'-0"	6418	SA
19'-0"	6048	
20'-0"	5683	OA
20'-1"	6443	30

Builder's name and yard number. **WOOD SKINNER & CO. LTD NEWCASTLE**

Names of sister ships. **"HEBBURN". "TOWNELEY".**

Owners. **BURNETT STEAMSHIP CO.**

Fee £ **11 : 1 : 0**

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