

Lloyd's Register of Shipping.  
SURVEYS FOR FREEBOARD.N<sup>o</sup> 31622

Computation of Freeboard for <u>Motor Vessel</u> having <u>Complete superstructure with tonnage opening.</u>					Port of Survey <u>Sunderland</u>
(Type of Superstructures.)					Date of Survey <u>While building.</u>
Ship's Name <u>"KIRRIEMOOR"</u> <u>TRANSIC</u>	Nationality and Port of Registry <u>British</u> <u>London</u> <u>STOCKHOLM</u>	Official Number <u>164461</u>	Gross Tonnage <u>4,970</u>	Date of Build <u>1935.</u>	Name of Surveyor <u>S. Colin Bartlett</u>
Moulded Dimensions: Length <u>411.5</u> Breadth <u>53.96</u> Depth <u>28.67</u>					Particulars of Classification <u>+100A1</u> <u>with freeboard</u> <u>class contemplated.</u>
Moulded displacement at moulded draught = 85 per cent. of moulded depth <u>11,703</u> tons					
Coefficient of fineness for use with Tables <u>.757</u>					
Depth for Freeboard (D)			Depth correction		Round of Beam correction
Moulded depth ... .. <u>28.67</u>			(a) Where D is greater than Table depth (D-Table depth) R = <u>(28.70-27.43) x 3 = +3.81</u>		Moulded Breadth (B) <u>53.96</u>
Stringer plate ... .. <u>.03</u>			(b) Where D is less than Table depth (if allowed) (Table depth-D) R = <u>✓</u>		Standard Round of Beam = $\frac{B \times 12}{50} = 12.95$
Sheathing on exposed deck $T \left( \frac{L-S}{L} \right) =$ <u>None</u>			If restricted by superstructures <u>✓</u>		Ship's Round of Beam = <u>13.2</u>
Depth for Freeboard (D) = <u>28.70</u>					Difference <u>.55</u>
					Restricted to <u>✓</u>
					Correction = $\frac{\text{Diff}^e}{4} \times \left( 1 - \frac{S_1}{L} \right) = \frac{.55}{4} \times .0077 = .0011$

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ... ..	23.42	23.42	8.5	8.5	23.42
„ overhang ... ..	2.62	1.31	„	„	1.31
R.Q.D. enclosed ... ..	✓				
„ overhang ... ..	✓				
Bridge enclosed... ..	380.21	380.21	8.5	✓	380.21
„ overhang aft ... ..	.33	.25	„		.25
„ overhang forward ... ..	✓				
File enclosed ... ..	✓				
„ overhang ... ..	✓				
Trunk aft ... ..	✓				
„ forward ... ..	✓				
Tonnage opening aft ... ..	4.92	3.15 = $\frac{1}{2}$ diff			3.15
„ „ forward ... ..	✓				
Total ... ..	411.50	408.34			408.34

Standard Height of Superstructure	7.5
„ „ R.Q.D.	✓
Deduction for complete superstructure	42
Percentage covered $\frac{S}{L} =$	100%
„ „ $\frac{S_1}{L} =$	99.23%
„ „ $\frac{E}{L} =$	99.23%
Percentage from Table, Line A.	99.05
(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 =	42 x 99.05 = -41.60

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ... ..	51.15	1		51.15	+12	62.75	1		62.75
$\frac{1}{2}$ L from A.P. ... ..	22.76	4		91.04	23.50	27.92	4		111.68
$\frac{3}{8}$ L „ ... ..	56.25	2		112.5	6.50	6.90	2		13.80
Amidships ... ..	-	4		-	✓	-	4		-
$\frac{3}{8}$ L from F.P. ... ..	11.25	2		22.50	12.76	13.20	2		26.40
$\frac{1}{2}$ L „ ... ..	45.52	4		182.08	49.00	53.40	4		213.60
F.P. ... ..	102.30	1		102.30	108.00	120.00	1		120.00
Total ... ..				460.32	+12				548.23

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left( \frac{.75-S}{.2L} \right) = \frac{87.91}{18} \left( \frac{.75-.50}{.50} \right) = -1.22$$

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 = 28.70  
Summer freeboard = 3.35  
Moulded draught (d) = 25.35

Deduction for Tropical freeboard and addition for

Winter freeboard =  $\frac{d}{4}$  inches =  $6.34 = 6\frac{1}{4}$ Addition for Winter North Atlantic Freeboard (if required) = ✓

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$$\Delta = 12,290$$

Tons per inch immersion at summer load water line

$$T = 4620$$

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

$$= \frac{12,290}{40 \times 4620}$$

$$= 6\frac{3}{4}$$

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

$$\frac{.757 + .68}{1.36} = \frac{1.437}{1.36} =$$

Depth Correction ... ..| Deduction for superstructures ... .. |
| Sheer correction ... .. |
| Round of Beam correction ... .. |
| Correction for Thickness of Deck amidships ... .. |
| Other corrections, scantlings, etc. ... .. |
| 3.81 | 42.82 | -39.01 |
| Summer Freeboard = 40.32 | | |
SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck:—

Tropical Fresh Water Line above Centre of Disc ... ..	13	330
Fresh Water Line „ „ ... ..	6 $\frac{3}{4}$	171
Tropical Line „ „ ... ..	6 $\frac{1}{4}$	159
Winter Line below „ „ ... ..	6 $\frac{1}{4}$	159
Winter North Atlantic Line „ „ ... ..	✓	

Tropical Fresh Water Freeboard ... ..	2 $\frac{3}{4}$
Fresh Water „ „ ... ..	2 $\frac{1}{2}$
Tropical „ „ ... ..	2 $\frac{1}{2}$
Winter „ „ ... ..	3 $\frac{1}{2}$
Winter North Atlantic „ „ ... ..	✓

RECEIVED  
8 MAY 1935



# PARTICULARS OF PROTECTION TO OPENINGS, ETC.

## HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS

Upper Deck										
2nd deck										
Description of Hatchway	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.
Dimensions of Hatchway	31'6" x 22'0"	31'6" x 22'0"	31'6" x 22'0"	31'6" x 22'0"	31'6" x 22'0"	31'6" x 22'0"	31'6" x 22'0"	31'6" x 22'0"	31'6" x 22'0"	31'6" x 22'0"
COAMINGS	Height above Deck	30 1/2"	30 1/2"	30 1/2"	30 1/2"	30 1/2"	30 1/2"	30 1/2"	30 1/2"	30 1/2"
	Thickness	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"
	Sides	10 x 3/4 x 10 B.G.	10 x 3/4 x 10 B.G.	10 x 3/4 x 10 B.G.	10 x 3/4 x 10 B.G.	10 x 3/4 x 10 B.G.	10 x 3/4 x 10 B.G.	10 x 3/4 x 10 B.G.	10 x 3/4 x 10 B.G.	10 x 3/4 x 10 B.G.
	Stiffeners	10 x 3/4 x 10 B.G.	10 x 3/4 x 10 B.G.	10 x 3/4 x 10 B.G.	10 x 3/4 x 10 B.G.	10 x 3/4 x 10 B.G.	10 x 3/4 x 10 B.G.	10 x 3/4 x 10 B.G.	10 x 3/4 x 10 B.G.	10 x 3/4 x 10 B.G.
HATCH BEAMS	Brackets, Stays	10 x 3/4 x 10 B.G.	10 x 3/4 x 10 B.G.	10 x 3/4 x 10 B.G.	10 x 3/4 x 10 B.G.	10 x 3/4 x 10 B.G.	10 x 3/4 x 10 B.G.	10 x 3/4 x 10 B.G.	10 x 3/4 x 10 B.G.	10 x 3/4 x 10 B.G.
	Number	5	5	5	5	5	5	5	5	5
	Spacing	5'3"	5'3"	5'3"	5'3"	5'3"	5'3"	5'3"	5'3"	5'3"
	Scantling and Sketch	9" x 625	9" x 625	9" x 625	9" x 625	9" x 625	9" x 625	9" x 625	9" x 625	9" x 625
FORE AND AFTERS	Bearing Surface	3 1/4"	3 1/4"	3 1/4"	3 1/4"	3 1/4"	3 1/4"	3 1/4"	3 1/4"	3 1/4"
	Number									
	Spacing									
	Unsupported Lengths									
HATCH COVERS	Scantling and Sketch									
	Bearing Surface									
	Material	W. Pine	W. Pine	W. Pine	W. Pine	W. Pine	W. Pine	W. Pine	W. Pine	W. Pine
	Thickness	3"	3"	3"	3"	3"	3"	3"	3"	3"
Spacing of Cleats	How fitted	7/8" cleat	7/8" cleat	7/8" cleat	7/8" cleat	7/8" cleat	7/8" cleat	7/8" cleat	7/8" cleat	7/8" cleat
	Bearing Surface	3"	3"	3"	3"	3"	3"	3"	3"	3"
	Number of Tarpaulins	24	24	24	24	24	24	24	24	24
		2	2	2	2	2	2	2	2	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  
 Are lashings provided in accordance with rule requirements? ☒ Yes

No 1.2 on SHELL DK - STEEL LOCKING BAR

Particulars of fiddle, funnel and ventilator coamings:-

Engine room skylight, fiddle, funnel and ventilator coamings of steel, strongly constructed.  
 Fiddle openings fitted with ringed steel covers.

Particulars of Flush Bunker Scuttles:-

None

Particulars of Companionways:-

None.

Small Hatches, Upper Deck.

Forward Hatch to Tween Deck. 42' x 36". Coaming 18" x 35.3" Wood Cover. 2 Tarpaulins. 2 1/2" bearing surface. Cleats 24" apart.  
 Lonnage opening aft. 4'11" x 22'0". Coaming 9' x 32' x 50 B.G. 3" wood cover.  
 After Hatch to Store. 42' x 36". Coaming 18" x 35.3" Wood cover. 2 Tarpaulins.  
 2 1/2" bearing surface. Cleats 24" apart.

Small Hatches 2nd deck

Fore Peak Store. 36' x 36". Coaming 8' x 3 x 40 B.G. 3" Wood Cover. 2 1/2" bearing surface. 1 Tarpaulin. Cleats 24" apart.  
 4 Escape Hatches to No. 1 hold. 30' x 24". Coaming 9' x 32' x 45 B.G. 3" ringed wood cover. 2 1/2" bearing surface. 1 Tarpaulin. Cleats 24" apart.  
 4 Escape Hatches No. 2 hold. 28' x 24". Coaming 9' x 32' x 45 B.G. 3" ringed wood cover. 2 1/2" bearing surface. 1 Tarpaulin. Cleats 24" apart.  
 4 Escape Hatches to deep tanks 28' x 24". Coaming 10' x 32' x 54 B.G. 50 Steel covers. 3/4" bolts 3 3/4" apart.  
 4 Escape Hatches to No. 3 hold. and 4 to No. 4 hold. as for No. 2 hold above.

Lonnage Well Hatch. 5'3" x 22'0". Coaming 18' x 40.3" Wood cover. 3" bearing surface. 2 Tarpaulins. Cleats 24" apart.  
 10 After Store. 36' x 36". Coaming 8' x 3 x 40 B.G.

On Superstructure Deck.

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

One 12" Vents to Tween Deck Store forward. Coaming 36' x 34".  
 Two 20" " " No. 1 hold. " 36' x 40".  
 Two 15" " " " " " 36' x 38".  
 Two 20" " " No. 2 " " 36' x 40".  
 Two 21" demicle ports to No. 2 hold Stayed 10 B.G.  
 Two 14" Vents to Tween Deck air ducts  
 Two 10" Vents " " " " " 30' x 38".  
 One 8" " " Store room " " 30' x 30".  
 Two 12" " " deep tanks " " 30' x 30".

Two 20" Vents to No. 3 hold. Coaming 30' x 40".  
 Two 15" " " " " " 30' x 38".  
 Two 15" " " " " " 30' x 38".  
 Two 12" " " " " " 30' x 38".  
 One 10" " to tunnel " 30' x 32".  
 Four 9" " to Accom aft " 30' x 32".  
 One 8" " Store aft " 30' x 32".

all ventilators fitted with wood plugs or canvas covers.

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

One 2 1/2" gooseneck to No. 1 d.b. tank 12 1/2" to lip.  
 Two 3 1/2" " " " 12 1/2" to lip.  
 Two 3 1/2" " " " 12 1/2" " "  
 Two 3 1/2" " " " 12 1/2" " "  
 Two 3 1/2" " " " 12 1/2" " "  
 Two 3 1/2" " " " 12 1/2" " "

Four 3 1/2" goosenecks to Mach No. 12. 12 1/2" to lip.  
 Two 3 1/2" " " d. b. 12 1/2" " "  
 Four 3 1/2" " " No. 4 d. b. 12 1/2" " "  
 Two 2 1/2" " " No. 5 " 12 1/2" " "  
 Two 3" " " to d. Peak. 12 1/2" " "

Particulars of Gangway Cargo and Coaling Ports:-

None

all air pipes fitted with wood plugs or gauze and canvas covers.

Two: Open rails on superstructure decks



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Particulars of Scuppers and Sanitary Discharge Pipes:—

From shelter (ween decks) three  $3\frac{1}{2}$ " scuppers each side  
Fitted with brass storm valves. ✓

Particulars of Side Scuttles:—

thirteen 9" sidelights in shelter (ween decks) aft with  
substantial braced deadlights. ✓

Particulars of Guard Rails:—

3 Rds., height 42 ins. Stanchions 5 ft apart on shelter  
deck. Solid bulwarks for 5 ft amidships. One  $30'' \times 18''$   
washport each side with two rails

Particulars of Gangways, Lifelines, etc.:—

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 ... Downs opening	7-10 $\frac{1}{2}$ "	tonnage opening	30" x 18 $\frac{1}{2}$ "	One	3.85 sq ft	
Forward Well ...						
State position of each freeing port ... } After Well:— (F. and A. position and height above deck edge) } Forward Well:— State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— 40 steel shutter. Additional area where sheer is less than standard.						

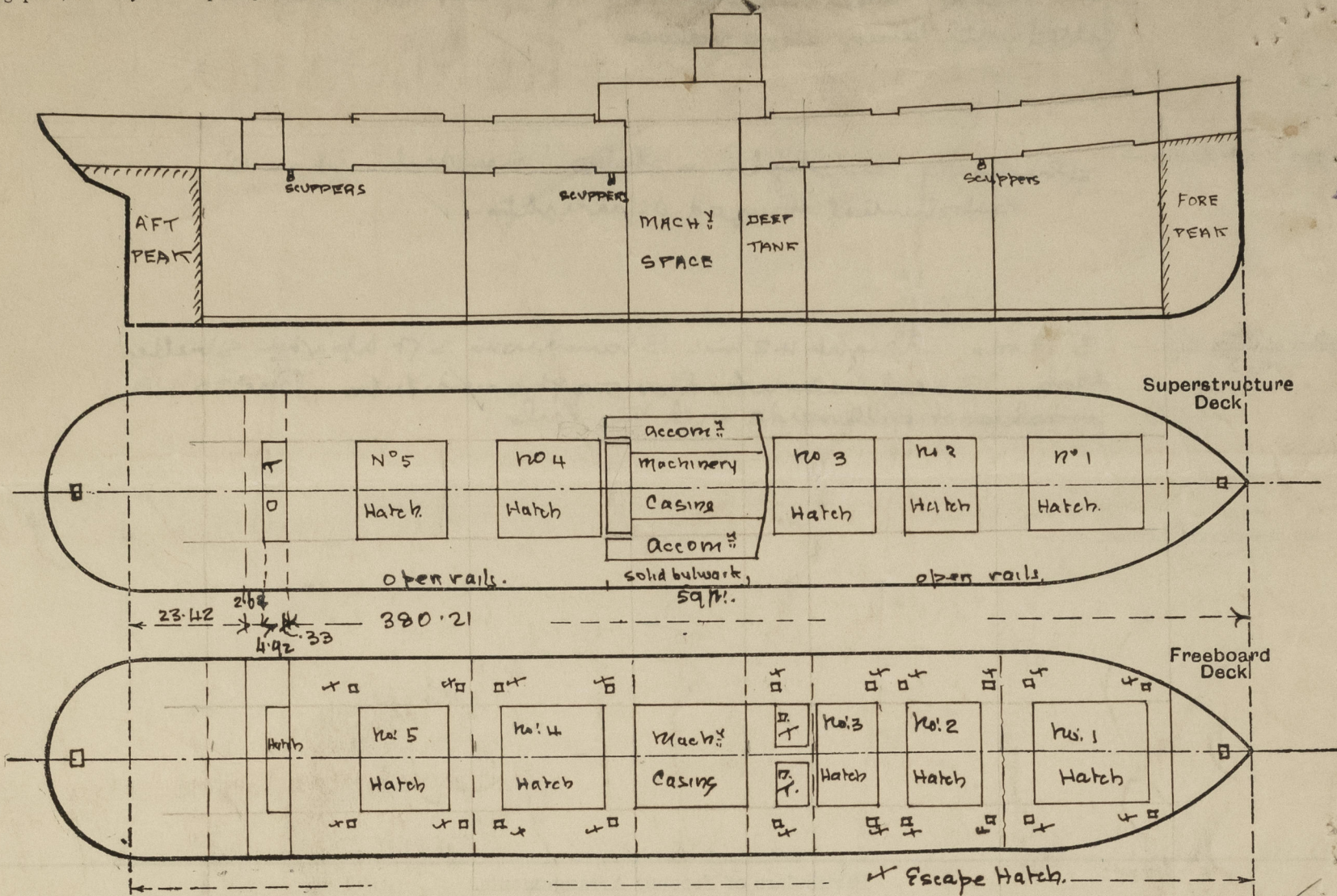
Particulars of Superstructures, Trunks, Casings, Deckhouses.								
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead ...	30		4 x 3 x 32	27" x 32"	nil	none.		
Raised Quarter Deck Bulkhead ...	—							
Bridge, After Bulkhead ...	30		4 x 3 x 32	27"	both top + bottom	Two 37" x 72"	18"	—
Bridge, Forward Bulkhead ...	—							
Forecastle Bulkhead ...	—							
Trunk, Aft ...	—							
Trunk, Forward ...	—							
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	none							
Exposed Machinery Casings on Super-structure Decks ...	none							
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ...	28	28	3 $\frac{1}{2}$ x 3 x 30	31 $\frac{1}{2}$	continuous post deck	none	—	8'-6"
Deckhouses on Flush Deck Ships ...								

Particulars of Closing Appliances (state if capable of being manipulated from both sides).	
Poop Bulkhead ...	— No openings.
Raised Quarter Deck Bulkhead ...	—
Bridge, After Bulkhead ...	3" storm boards in full height riveted channels. ✓
Bridge, Forward Bulkhead ...	—
Forecastle Bulkhead ...	—
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	—
Exposed Machinery Casings on Super-structure Decks ...	—
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ...	—
Deckhouses on Flush Deck Ships ...	—



*Kirriemoor*

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:—



The sheet of the superstructure deck is parallel to that of the freeboard deck

Actual displacement at actual draught 25' 6" = 12,290 Tons.

Tons per inch " " " 46.20

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

Builder's name and yard number *Messrs William Dornier & Sons No 614.*

Names of sister ships *"Sutherland" Sd Rpl No 31555 "Kinnis" Sd Rpl No 31584*

Owners *Lord Runciman Shipping Co Ltd*

Fee £ *15* Received by me

*Will be charged on completion*

*[Signature]*



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