

Lloyd's Register of Shipping.
 SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship , Tanker having <u>Pop. Breeze & Forecastle</u>		Port of Survey <u>Bristol</u>	
(Type of Superstructures.) <u>4418</u> <u>MOB T 116</u> <u>30/3/48</u>		Date of Survey <u>6-7-8 April</u>	
Ship's Name <u>S/S KERMA</u>	Nationality and Port of Registry <u>Burmah.</u>	Official Number <u>160568.</u>	Gross Tonnage <u>4373</u>
		Date of Build <u>1928-9.</u>	
Moulded Dimensions: Length <u>369.75</u> Breadth <u>52.08</u> Depth <u>28.33</u>			
Moulded displacement at moulded draught = 85 per cent. of moulded depth <u>10480</u> ✓ tons			
Coefficient of fineness for use with Tables <u>.793</u> ✓			
Depth for Freeboard (D)		Depth correction	
Moulded depth <u>28.31</u>		(a) Where D is greater than Table depth (D - Table depth) R = <u>10.61</u>	
Stringer plate <u>7/8</u> <u>.07</u>		(28.38 - 24.65) 2.844 = + <u>10.61</u>	
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 = ✓	
Depth for Freeboard (D) = <u>28.38</u> ✓		If restricted by superstructures ✓	
Round of Beam correction			
Moulded Breadth (B) <u>52.00</u>			
Standard Round of Beam = $\frac{B \times 12}{50} =$ <u>12.48</u> ✓			
Ship's Round of Beam = <u>13.00</u> ✓			
Difference <u>.52</u> ✓			
Restricted to ✓			
Correction = $\frac{\text{Diff}^o}{4} \times \left(1 - \frac{S_1}{L} \right) =$ <u>.52</u> <u>(1 - .4605) = -.07</u> ✓			

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...	28.0	28.00	7.0	$\times 7.0/7.198$	27.23
" overhang ...	3.25	.12			.12
R.Q.D. enclosed					
" overhang					
Bridge enclosed...	103.7.38	103.58	7.0	$\times 7.0/7.198$	100.83
" overhang aft	26.2.17	1.62			1.58
" overhang forward	8.50	.25			.24
F'cle enclosed ...	36.25	36.25	7.3		36.25
" overhang ...	5.42	.42			.42
Trunk aft ...					
" forward ...					
Tonnage opening aft					
" " forward					
Total ...	171.17	170.24			166.67

Standard Height of Superstructure 7.198 ✓

" " R.Q.D. _____

Deduction for complete superstructure 39.98" ✓

Percentage covered $\frac{S}{L} = 46.30\% \checkmark$

" " $\frac{S_1}{L} = 46.05\% \checkmark$

" " $\frac{E}{L} = 45.08\% \checkmark$

Percentage from Table, Line A. ✓

(corrected for absence of forecastle (if required))

Percentage from Table, Line B. 31.81 %

(corrected for absence of forecastle (if required))

Interpolation for bridge less than .2L (if required) .28 L

Deduction = $39.98 \times .3181 = -12.72" \checkmark$

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product	Mean actual sheer aft = <i>Excess</i>
A.P. ...	46.98	1	46.98	51 ^{as used}	56.50	1	56.50	Mean actual sheer forward = <i>Excess</i>
$\frac{1}{6}$ L from A.P. ...	20.91	4	83.64	22	23.70	4	94.80	Mean standard sheer forward = <i>Excess</i>
$\frac{2}{6}$ L " ...	5.17	2	10.34	6	5.92	2	11.84	Length of enclosed superstructure forward of amidships = 14
Amidships ...	"	4	"	"	"	4	"	" " aft of " = 14
$\frac{2}{6}$ L from F.P. ...	10.33	2	20.66	16	12.74	2	25.48	
$\frac{1}{6}$ L " ...	41.81	4	167.24	51	50.95	4	203.80	
F.P. ...	93.96	1	93.96	103	107.25	1	107.25	
Total ...			422.82				499.67	

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left(75 - \frac{S}{2L} \right) = \frac{76.85}{18} (75 - 2315) = -2.21''$$

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.		Deduction for Fresh Water.		TABULAR FREEBOARD corrected for Flush Deck (if required)																			
Addition for Winter and Winter North Atlantic Freeboard.		Displacement in salt water at summer load water line		Correction for coefficient																			
Depth to Freeboard Deck =	28.38	△ =	70075	$\frac{68 + .793}{1.36} = \frac{1.473}{1.36}$																			
Summer freeboard =	5.27	Tons per inch immersion at summer load water line																					
Moulded draught (d) =	23.11	T =	39.0																				
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches =		Deduction = $\frac{\Delta}{40 T}$ inches =																					
5.78 = 5 ³ / ₄		6.46 = 6 ¹ / ₂																					
Addition for Winter North Atlantic Freeboard (if required) =																							
				<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;"></th> <th style="width: 50%;"></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">+</td> <td style="text-align: center;">-</td> </tr> <tr> <td style="text-align: center;">19.53</td> <td style="text-align: center;">-</td> </tr> <tr> <td style="text-align: center;">-</td> <td style="text-align: center;">2.72</td> </tr> <tr> <td style="text-align: center;">-</td> <td style="text-align: center;">2.21</td> </tr> <tr> <td style="text-align: center;">-</td> <td style="text-align: center;">.07</td> </tr> <tr> <td style="text-align: center;">16.64</td> <td style="text-align: center;">15.00</td> </tr> <tr> <td colspan="2" style="text-align: right;">-4.39"</td> </tr> <tr> <td colspan="2" style="text-align: right;">Summer Freeboard = 63.14"</td> </tr> </tbody> </table>				+	-	19.53	-	-	2.72	-	2.21	-	.07	16.64	15.00	-4.39"		Summer Freeboard = 63.14"	
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SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck:—

Tropical Fresh Water Line above Centre of Disc	12 ¹ / ₄ " ✓	Tropical Fresh Water Freeboard	...
Fresh Water Line	"	"	6 ¹ / ₂ " ✓	Fresh Water	"
Tropical Line	"	"	5 ³ / ₄ " ✓	Tropical	"
Winter Line	below	"	5 ³ / ₄ " ✓	Winter	"
Winter North Atlantic Line	"	"	✓	Winter North Atlantic	"

5-34 ✓
4-13 ✓
4-18 3/4 ✓
4-9 1/2 ✓
5-9 ✓

1906
Freeboards
assigned

Lloyd's Register
Foundation

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS										
Description of Hatchway	N°1	N°2	N°3	N°4	N°5		N°3 BRIDGE IN SPK	BONNET HATCH ON BRIDGE 2 PIPES	D.N	TRIMMING HATCHES IN FWD BLK
Dimensions of Hatchway	29'3"x20'	31'6"x20'	13'6"x15'	31'6"x20'	29'3"x20'		13'6"x18'	8'10"x2'10"	6'10"x2'10"	3'6"x3'6"
COAMINGS	Height above Deck ... Thickness ... Stiffeners ... Brackets, Stays ...	36" 50" 44" 5"	36" 52" 44" 5"	36" 44" 44" 20 N°1	36" 52" 44" 20 N°1	36" 50" 44" 20 N°1	9" 4 1/2 x 1/4 BA Same	19" 4" Same	9" 4 1/2 x 1/4 BA Same	9" 4 1/2 x 1/4 BA Same
HATCH BEAMS	Number ... Spacing ... Scantling and Sketch	5'10" 4'8"x4 1/2" 58" 14-14"	5'2" Angles same as through 57" 14-18 1/2"	4'6" a N°2 36" 11 1/2"	5' a N°2 a N°2 a N°1	4' a N°1 a N°1	2' 4 1/2 x 1/2 x 1/4 14-15" Same	Same	Same	Same
FORE AND AFTERS	Number ... Spacing ... Unsupported Lengths ... Scantling* and Sketch						3			
Bearing Surface	3"	3"	3"	3"	3"		3			
HATCH COVERS	Material ... Thickness ... How fitted ... Bearing Surface ...	3" pine 6x6x4 1/2" 3"		a N°1			Pine 3" F.A. 3"	Pine 3" athwart 3"	Pine 3" athwart 3"	Pine 3" athwart 3"
Spacing of Cleats	24"						24"	24"	24"	24"
Number of Tarpaulins	3						2	2	2	2
<p>*Are wood fore and afters steel shod at all bearing surfaces? <input checked="" type="checkbox"/> Yes</p> <p>Are battens and wedges efficient and in good condition? <input checked="" type="checkbox"/> Yes</p> <p>Are tarpaulins in good condition and in accordance with rule requirements? <input checked="" type="checkbox"/> Yes</p> <p>Are lashings provided in accordance with rule requirements? <input checked="" type="checkbox"/> Yes</p>										

Particulars of fiddley, funnel and ventilator coamings:—

Particulars of fiddle, funnel and ventilator coamings:—

Staircase gratings covered by strong steel angled cover.
Fiddle & funnel ventilators in good condition.
Engine room skylight of steel strongly constructed.

Particulars of Flush Bunker Scuttles:—

None

Particulars of Companionways :—

None

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

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

Freeboard all	2-13" dia. Coaming	27' x 34'	1 set	1 set	for each
1-16		33' x 38'		No. 1 hole	
1-9		34' x 34'			for each

Amidships. 2-18' laminar profile to & lower trunk
8-9' the crossings 30x32 on bridge superstructure all lead bridge space

After well
5' 15-18" 2 p p p all 30x34 - tunnel

Particulars of Air Pipes in exposed positions on freeboard, ~~reel~~ ^{upper} quarter, or superstructure decks:—

Particulars of Air Pipes in exposed positions on freeboard, 1911

$\frac{1}{2} \cdot \frac{1}{2}$ are paper - $f_{\text{res}}^{\text{B}} = 18$ beats $2z_1^0 - 2z_2^0$.
L - - - - - $E \approx 10^{-6}$ eV B^+ back on track superstructure AN (WI).

2. $2\frac{1}{2}$, 2. $3\frac{1}{2}$ L E + B room tanks. 19" high
3. 4" x 6" x 12" head in brood all 20'.

1 - 3 $\frac{1}{2}$ WJ to after peak in prop an so.


all air pipes have stuffing holes on top of tank & are closed with plugs and/or canvas covers

Particulars of Gangway Cargo and Coaling Ports:—

None

Particulars of Scuppers and Sanitary Discharge Pipes —

2 P₂ 1 S. sanitary discharges from forecastle below futtock and fitted with M. & Horn valves.

3 P₂ 3 S. Scuppers from superstructure brigs discharging above futtock and W.I. 

2 P scupper on starboard side - fitted with Horn valves.

Particulars of Side Scuttles :

12 in forecast + 2 in barge span six scuttles fore with hinged deadlights -
2 scuttles in barge stern fore with cross bar \oplus & no dead lights -

Particulars of Guard Rails :—

f Guard Rails:—
Guard rails on the forecath, poop bridge
3'-0" high with three rod stanchions spaced 4'-2" apart.

Particulars of Gangways, Lifelines, etc. :—

Two rows of stanchions (10 x 15) fitted in angle attachments welded to the deck. 4-6 high with steel wire set up with screws at each end in the fore & after walls.

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	106'-0	3'-6	3'-10 x 1'-3	5	24 ^{sq} ✓	21 ^{sq}
Forward Well	97'-0	3'-5	3'-10 x 1'-3	5	24 ^{sq} ✓	20 ^{sq}

State position of each freeing port } After Well:— 7'-4 from poop + 10'-6 from after bulkhead } H⁺ above deck 1'-4"

(P. and A. position and height above deck edge) } Forward Well:— 6'-0 - bulk from + 15'-0 from forecabin - }

State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— 2 rows on each.

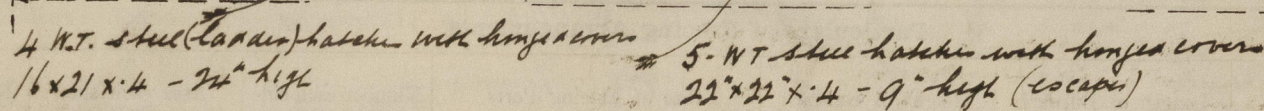
Additional area where sheer is less than standard.

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	✓	48"	5½ x 3 x 48	30"	None	48" x 39" 39" x 67"	12"	7' 0"
Raised Quarter Deck Bulkhead ...	✓	✓	✓	✓	✓	✓	✓	✓
Bridge, After Bulkhead	✓	32"	3 x 3 x 34	30"	None	2-24 x 49 x 2¼" (none)	12"	7' 0"
Bridge, Forward Bulkhead	✓	45"	8 x 7 x 5	26"	Anchor bays 14 ft 10 in	2-36 x 54" 36 x 55"	18"	7' 0"
Forecastle Bulkhead	✓	32"	3 x 3 x 34	30"	None	24 x 56"	18"	7' 3"
Trunk, Aft	✓	✓	✓	✓	✓	✓	✓	✓
Trunk, Forward	✓	✓	✓	✓	✓	✓	✓	✓
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	✓	✓	✓	✓	✓	✓	✓	✓
Exposed Machinery Casings on Super-structure Decks	✓	35"	Flange 5" x 36	32"	Brackets at top	28 x 59"	16" 18"	7' 4"
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	✓	35"	Flange 5" x 36	32"	None	48 x 21" 54 x 27"	12" 6"	7' 0"
Deckhouses on Flush Deck Ships ...								

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

Particulars of Closing Appliances		Remarks
Poop Bulkhead	...	Shifting board / full hinges in channels permanently attached to both bulkheads
Raised Quarter Deck Bulkhead	...	Board doors operate from both sides
Bridge, After Bulkhead	...	Steel hinged doors operate from outside only
Bridge, Forward Bulkhead	...	4 steel hinged doors operate from both sides
Forecastle Bulkhead	...	2-1/2 steel doors operate from both sides
Exposed Machinery Casings on Free-board or Raised Quarter Decks	...	See Appendix Notes
Exposed Machinery Casings on Superstructure Decks	...	3 steel hinged doors operate from both sides
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	...	1 door steel-hinged door operates from both sides (to door they have to open)
Deckhouses on Flush Deck Ships	...	2 steel hinged doors

Kerma



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

Received by me.