

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker *TUG*

having *Forecastle only*

Port of Survey *Abadan*

Date of Survey *31.10.32*

Name of Surveyor *H. A. Richardson*

Particulars of Classification *TAI.*
For Towing Purposes.

Ship's Name *KUMAKI* Nationality and Port of Registry *British London* Official Number *143062* Gross Tonnage *433.73* Date of Build *1919.3*

Moulded Dimensions: Length *135'0"* Breadth *29'0"* Depth *16'15"*

Moulded displacement at moulded draught = 85 per cent. of moulded depth *No displacement* tons

Coefficient of fineness for use with Tables *630* *68 lowest in Tables.*

Depth for Freeboard (D)		Depth correction		Round of Beam correction	
Moulded depth	16.15	(a) Where D is greater than Table depth (D - Table depth) R =		Moulded Breadth (B)	29.0
Stringer plate	.30	(16.15 - 9.00) x 1.038 = +	7.44	Standard Round of Beam = $\frac{B \times 12}{50}$	6.96
Sheathing on exposed deck	none.	(b) Where D is less than Table depth (if allowed) (Table depth - D) R =		Ship's Round of Beam	7.0
T $\left(\frac{L-S}{L}\right)$		If restricted by superstructures		Difference	.04
Depth for Freeboard (D) =	16.14			Restricted to	
				Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L}\right)$	$\frac{.04}{4} \times \left(1 - \frac{7.491}{29.0}\right) = .01$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed ...						Standard Height of Superstructure 6.00
" overhang ...						" " R.Q.D. -
R.Q.D. enclosed ...						Deduction for complete superstructure 19.5
" overhang ...						Percentage covered $\frac{S}{L} = 25.4\%$
Bridge enclosed...						" " $\frac{S_1}{L} = 25.09\%$
" overhang aft ...						" " $\frac{E}{L} = 25.09\%$
" overhang forward	34.75	33.88	7' 7 1/2"		33.88	Percentage from Table, Line A. 12.54
F'cle enclosed ...	36.74					(corrected for absence of forecastle (if required))
" overhang ...						Percentage from Table, Line B.
Trunk aft ...						(corrected for absence of forecastle (if required))
" forward ...						Interpolation for bridge less than 2L (if required)
Tonnage opening aft ...						Deduction = 19.5 x 12.54 = - 2.45
" " forward						
Total ...	34.75	33.88			33.88	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P. ...	23.50	1		23.50	29.62	29.62	1		29.62	Mean actual sheer aft = Deficient 7 1/2%
1/4 L from A.P. ...	10.46	4		41.84	10.75	10.75	4		43.00	Mean actual sheer forward = Excess
1/2 L " ...	2.58	2		5.16	- .30	- .30	2		- .60	
Amidships ...		4					4		72.02	Length of enclosed superstructure forward of amidships = 10
3/4 L from F.P. ...	5.17	2		10.34	11.25	11.25	2		22.50	" " aft of " = Bridge
1/4 L " ...	20.92	4		83.68	33.15	33.15	4		132.60	
F.P. ...	47.00	1		47.00	65.75	65.75	1		65.75	
Total ...				211.52					292.87	

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{211.52}{18} \left(.75 - \frac{.6213}{128.7} \right) = - 2.81$

If limited on account of midship superstructure. NIL

If limited to maximum allowance of 1 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 =	16.17	Δ =		Depth Correction ... 7.44	
Summer freeboard =	1.79	Tons per inch immersion at summer load water line		Deduction for superstructures ... 2.45	
Moulded draught (d) =	14.38	T =		Sheer correction ...	
Deduction for Tropical freeboard and addition for		Deduction = $\frac{\Delta}{40 T}$ inches		Round of Beam correction01	
Winter freeboard = $\frac{d}{4}$ inches =	3.59 = 3 1/2"	= 3 1/2"		Correction for Thickness of Deck amidships ...	
Addition for Winter North Atlantic Freeboard (if required) =	2"			Other corrections, scantlings, etc. ... 2.92	
				10.36 2.46 +	
				Summer Freeboard =	

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, *STEEL* Deck: 1.92

Tropical Fresh Water Line above Centre of Disc ...	7"	Tropical Fresh Water Freeboard ...	1.22
Fresh Water Line " " ...	3 1/2"	Fresh Water " " ...	1.6
Tropical Line " " ...	3 1/2"	Tropical " " ...	1.6
Winter Line below " " ...	3 1/2"	Winter " " ...	2.1
Winter North Atlantic Line " " ...	5 1/2"	Winter North Atlantic " " ...	2.1

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PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS

Description of Hatchway			PORT	PORT	STARBOARD	STARBOARD						
			FORD.	AFT	FORD.	AFT.						
Dimensions of Hatchway			6'-6"x2'-0"	6'-6"x2'-0"	6'-6"x2'-0"	6'-6"x2'-0"						
COAMINGS	Height above Deck		36"	36"	36"	36"						
	Thickness	Sides	5/16"	5/16"	5/16"	5/16"						
	Stiffeners	Ends										
	Brackets, Stays		Angle	none	round deck	3"x3"x7/16"						
HATCH BEAMS	Number											
	Spacing											
	Scantling and Sketch			none								
	Bearing Surface											
FORE AND AFTERS	Number											
	Spacing											
	Unsupported Lengths											
	Scantling* and Sketch			none								
HATCH COVERS	Bearing Surface											
	Material		Steel	Steel	Steel	Steel						
	Thickness		1/2"	1/2"	1/2"	1/2"						
	How fitted		Bolted	Bolted	Bolted	Bolted						
Spacing of Cleats	Bearing Surface											
Number of Tarpaulins												

- *Are wood fore and afters steel shod at all bearing surfaces?
- Are battens and wedges efficient and in good condition?
- Are tarpaulins in good condition and in accordance with rule requirements?
- Are lashings provided in accordance with rule requirements?

Particulars of fiddle, funnel and ventilator coamings:—
Funnel & stokehold ventilators in good condition
3 Fiddle openings to stokehold — Gratings & portable covers fitted
Engine Room ventilators in good condition
Engine Room skylights of steel — strongly constructed

Particulars of Flush Bunker Scuttles:—
Bunker scuttles plated over & rivetted

Particulars of Companionways:—
none.

Particulars of Ventilators in exposed positions on freeboard and superstructure decks:—
Freeboard deck
2 vents to aft crew space 5 3/4" dia 2'-8 1/2" high x 5/16"
1 " F.W. tank space 3 5/8" " 1'-8" " x 1/4"
1 " to aft crew space 6" " 12" " x 1/4" (mushroom with screw top.)
4 vents to crew quarters 6" dia coaming 2'-11" x 5/16"
1 " Saloon & accom. 6" " 2'-8" x 3/8" (mushroom - screw top)
3 " bathroom & WCs 3" " 7 3/4" x 1/4" " "
1 " " 6" " 12 1/4" x 1/4" " "
2 " wireless accom. 6" " 9" x 1/4" " "
1 " captain's 6" " 6" x 3/16" " "
2 " Jan room 48" " 11" x 1/4" top fixed with rivetted lugs.

vents closed with wood plugs & canvas covers.

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

4 air pipes 3 3/4" dia 8 1/4" high to stove space
1 " 3 3/4" " x 9 1/4" " " " "
1 " 3 3/4" " x 8 1/4" " " " "
1 " 3 3/4" " x 19 3/4" " to F.W. tank space
2 " 3 3/4" " x 19 3/4" " to Jan room
2 " 4 3/4" " x 4 1/2" " to bunkers
2 " 3 3/4" " x 20" " to aft peak

All air pipes can be closed with wooden plugs.

of Gangway Cargo and Coaling Ports:—

none.



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Particulars of Scuppers and Sanitary Discharge Pipes:—

Sanitary pipes fitted with traps at inner ends
Scupper pipes open ended & grating fitted at
inboard end.

Particulars of Side Scuttles:—

Ship was not in drydock but lower edge of lowest
side scuttles was sealed from drawing - 16'-3" above base line

Side scuttles of substantial construction, fitted with hinged deadlights

Particulars of Guard Rails:—

Forecastle deck - 3'-0" above deck - 2 rails & stanchions space 4'-3"

Freeboard deck - Efficiently constructed bulwark 3'-6" above deck
with supports spaced 5'-6"

Particulars of Gangways, Lifelines, etc.:—

None

Particulars of Freeing Arrangements.

	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
Freeboard Deck	205'-7"	3'-6"	2'-6" x 12"	4 Stand. 5 Port.	14400" stand. 18000" port.	
Forward Well						
State position of each freeing port (F. and A. position and height above deck edge)	Stand. 1'-4"-38'-7" 54'-11" 72'-0" After Well: 8'-11"-25'-5" 46'-3" 62'-7" 79'-7" Forward Well: 8'-11"-25'-5" 46'-3" 62'-7" 79'-7"					
State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:—	Measured from start of bulwark to fore. edge each port. Hinged shutters fitted. All 11" above deck.					
Additional area where sheer is less than standard.						

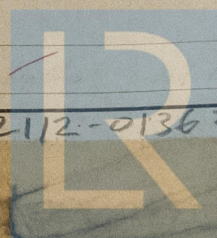
Particulars of Superstructures, Trunks, Casings, Deckhouses.

	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead								
Raised Quarter Deck Bulkhead								
Bridge, After Bulkhead								
Bridge, Forward Bulkhead								
Forecastle Bulkhead	3/8"	1/4"	3" x 3" x 5/16"	27"	BKts	4'-11" x 2'-1"	1'-8"	7'-7 1/2"
Trunk, Aft								
Trunk, Forward								
Exposed Machinery Casings on Free- board or Raised Quarter Decks E.R.	3/16"	3/16"	2 1/2" x 2 1/2" x 1/4"	24"	BKts	4'-5" x 2'-2"	1'-9"	3'-6" x 6'-6"
Exposed Machinery Casings on Super- structure Decks STOREHOLD	24"	20"	3" x 3" x 3"	33"	BKts	3'-8" x 1'-9"	1'-9"	4'-6"
Machinery Casings within Superstruc- tures 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	2 doors to saloon & crew's accom. operated from both sides.
Exposed Machinery Casings on Free- board or Raised Quarter Decks E.R.	4 doors to E.R. & crew's accommodation - operated from both sides
Exposed Machinery Casings on Super- structure Decks STOREHOLD	6 doors to storehold for room & galleys - operated from both sides
Machinery Casings within Superstruc- tures not fitted with Class I Closing Appliances	
Bathrooms etc. on freeboard Deckhouses on Flush Deck Ships	6 doors operated from both sides

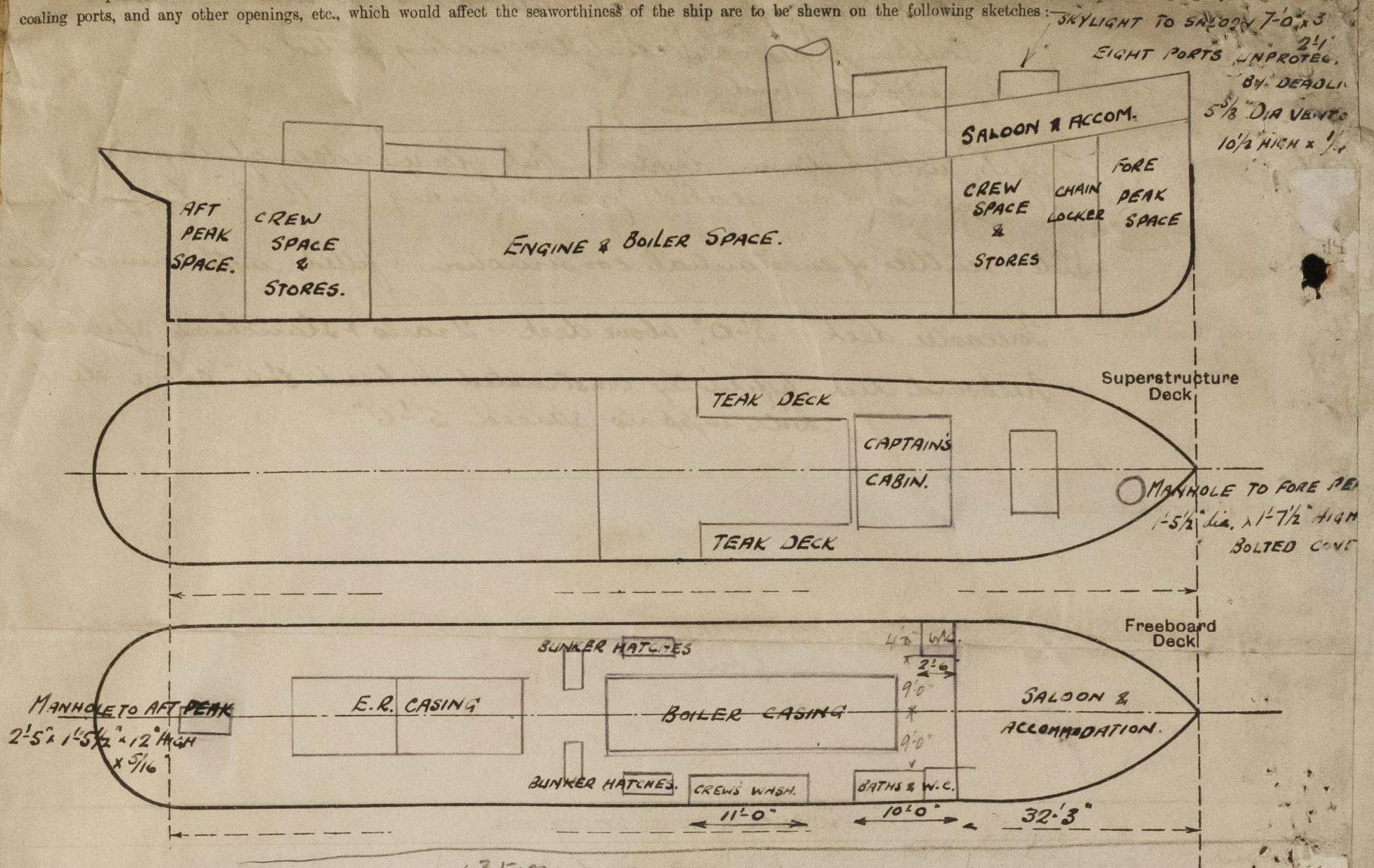
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Superstructure bulkheads, trunks, deckhouses, casings, cargo and coaling hatchways, extent and thickness of sheathing on the freeboard deck, gangway, cargo and coaling ports, and any other openings, etc., which would affect the seaworthiness of the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



Pulverized

135.00
34.75
100.25
79.25

P.

S.

2 179.50
89.45

to feet 32.25
+ 2.77 = 35.02

34.45
33.02
1.7304
.86

State any special features in the construction of the ship:

OM 17

Builder's name and yard number: Livingstone & Cooper Ltd. Hessel near Hull

Names of sister ships:

Owners: British Tanker Co. Ltd.

Fee £ 6 : 6 : 0

Received by me: H. A. Richardson



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