

Lloyd's Register of Shipping.
SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker having <u>Poop, Bridge and Forecastle.</u>					Port of Survey <u>Shanghai.</u>
(Type of Superstructures.)					Date of Survey <u>29th & 30th May 1933</u>
Ship's Name <u>"Hua-shan"</u> <u>(ex Werrilee)</u>	Nationality and Port of Registry <u>Chilean</u> <u>Shanghai.</u>	Official Number <u>120755</u>	Gross Tonnage <u>3904.26</u>	Date of Build <u>1909-1</u>	Name of Surveyor <u>S. Pinkinf.</u>
Moulded Dimensions: Length <u>354.80'</u>		Breadth <u>49.80'</u>	Depth <u>26'-5 1/2"</u>	Particulars of Classification <u>+100A1.</u>	
Moulded displacement at moulded draught = 85 per cent. of moulded depth		<u>830</u> ✓		<u>9425</u> tons	
Coefficient of fineness for use with Tables					

Depth for Freeboard (D)		Depth correction	Round of Beam correction
Moulded depth	<u>26'-5 1/2"</u>	(a) Where D is greater than Table depth (D - Table depth) R = <u>(26.50 - 23.66) 2.739 = + 7.75" ✓</u>	Moulded Breadth (B) <u>49.80</u>
Stringer plate	<u>1/2"</u>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = ✓	Standard Round of Beam = $\frac{B \times 12}{50} =$ <u>11.95</u>
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$	✓	If restricted by superstructures ✓	Ship's Round of Beam = <u>11 1/2"</u>
Depth for Freeboard (D) = <u>26'-6"</u>			Difference <u>.45</u>
			Restricted to
			Correction = $\frac{\text{Diff}^*}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.45}{4} \times .624 = +.07$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed	<u>11.40'</u>	<u>11.40</u>	<u>7.5'</u>	✓	<u>11.40</u>
" overhang					
R.Q.D. enclosed					
" overhang					
Bridge enclosed	<u>85.50'</u>	<u>85.50</u>	<u>7.5'</u>	✓	<u>85.50</u>
" overhang aft					
" overhang forward					
Forecastle enclosed	<u>37.50'</u>	<u>36.49</u>	<u>7.5'</u>	✓	<u>36.49</u>
" overhang	<u>6.25'</u>	✓	<u>7.5'</u>	✓	✓
Trunk aft					
" forward					
Tonnage opening aft					
" forward					
Total	<u>134.40'</u>	<u>133.39</u>			<u>133.39</u>

Standard Height of Superstructure	<u>7.05</u> ✓
" " R.Q.D.	✓
Deduction for complete superstructure	<u>38.99</u> ✓
Percentage covered $\frac{S}{L} =$	<u>37.89 %</u>
" " $\frac{S_1}{L} =$	<u>37.60 %</u>
" " $\frac{E}{L} =$	<u>37.60 %</u> ✓
Percentage from Table, Line A. (corrected for absence of forecastle (if required))	
Percentage from Table, Line B. (corrected for absence of forecastle (if required))	<u>25.46 %</u> ✓
Interpolation for bridge less than 2L (if required)	
Deduction = <u>38.99</u> × <u>25.46</u> =	<u>- 9.93</u> ✓

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	<u>45.48</u>	✓	1	<u>45.48</u>	<u>57"</u>	<u>57.00</u>	1		<u>57.00</u>
1/2 L from A.P.	<u>20.24</u>		4	<u>80.96</u>	<u>25 1/2"</u>	<u>25.67</u>	4		<u>102.68</u>
3/4 L "	<u>5.00</u>		2	<u>10.00</u>	<u>6 1/2"</u>	<u>6.41</u>	2		<u>12.82</u>
Amidships			4				4		
3/4 L from F.P.	<u>10.00</u>		2	<u>20.00</u>	<u>11"</u>	<u>11.05</u>	2		<u>22.10</u>
1/2 L "	<u>40.48</u>		4	<u>161.92</u>	<u>44 1/4"</u>	<u>44.23</u>	4		<u>176.92</u>
F.P.	<u>90.96</u>		1	<u>90.96</u>	<u>99"</u>	<u>99.00</u>	1		<u>99.00</u>
Total				<u>409.32</u>					<u>470.52</u>

Correction = $\frac{\text{Difference between sums of products}}{18} \left(75 - \frac{S}{2L} \right) = \frac{61.20}{18} \left(75 - \frac{1894}{2} \right) = -1.91$ ✓

If limited on account of midship superstructure. $1.91 \times \frac{165}{200} = -1.58$ ✓

If limited to maximum allowance of 1 1/2 ins. per 100 ft.

Mean actual sheer aft	= <u>Excess</u> ✓
Mean standard sheer aft	
Mean actual sheer forward	= <u>Excess</u> ✓
Mean standard sheer forward	
Length of enclosed superstructure forward of amidships =	<u>665</u> ✓
" " aft of " =	<u>176</u> ✓

Deduction for Tropical Freeboard.	Deduction for Fresh Water.	TABULAR FREEBOARD
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Corrected for Fresh Deck (if required)
Depth to Freeboard Deck = <u>26.50</u>	Δ =	Correction for coefficient $\frac{68 + .830}{1.36} = \frac{1.61}{1.36}$
Summer freeboard =	Tons per inch immersion at summer load water line	Depth Correction <u>7.75</u> ✓
Moulded draught (d) =	T =	Deduction for superstructures <u>- 9.93</u> ✓
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches =	Deduction = $\frac{\Delta}{40 T}$ inches =	Sheer correction <u>- 1.58</u> ✓
Addition for Winter North Atlantic Freeboard (if required) =		Round of Beam correction <u>.07</u> ✓
		Correction for Thickness of Deck amidships <u>-</u>
		Other corrections, scantlings, etc. <u>-</u>
		Summer Freeboard = <u>60.59</u> ✓

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, 5'-0 1/2" 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	"

1906 Freeboards

re-assigned

Lloyd's Register
Foundation

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS

* Are wood fore and afters steel shod at all bearing surfaces? yes
Are battens and wedges efficient and in good condition?
Are tarpaulins in good condition and in accordance with rule requirements? yes
Are lashings provided in accordance with rule requirements? 3 ringbolts each side of hatches

Particulars of fiddley, funnel and ventilator coamings :—

Fiddley gratings 1 at 9'6" x 4'0", 2 off at 18" diam., & 2 off 3'6" x 1'9" all gratings have hinges
 Funnel coaming 2-7" x 1/4" DEPTH 3" coaming bar & fitted steel stool covered
 2 Stanchion vents 2'3" diam. boaming 3'6" x 5/16" } vents on casing top. hinged
 2 Engine Room 1'3" diam. 3'0" x 1/2" }
 2 Boiler 1'0" 2'3" x 1/8" }

Particulars of ~~Black Bunker~~ ~~Sentinel~~ ~~Sumner~~ ~~Hatch~~ ~~on~~ ~~Freeboard~~ ~~Deck~~ ~~Inside~~ ~~Bridge~~ ~~House~~

2 off. 1 Pot x 1 Starboard 6'4" x 3'3" } Laming 11" - 3 1/2" - 1/2" B.A.
2 " 1 " x 1 " 5'10" x 3'3" } Bearing surface 1 3/4"
2 " 1 " x 1 " 3'10" x 3'3" } Wood covers 2 1/2" (ashwarpship fitted)
and ~~top~~ ^{top} ~~plates~~ ^{plates}
Tarpaulins

Particulars of ~~Commerce~~ *Skylights* :—




Engine room Skylight (steel) 15'-3" long x 16'-6", Coaming 18"- $\frac{3}{16}$ " with six hinged plate covers 5'-3" x 3'-9" each with 4 - 10" fixed lights.

Galley Skylight (wood) ^{5'0" x 2'0"} coaming 9", glass protected by $\frac{1}{4}$ " steel rods. on top of casing.
Skylights (wood) on house } coaming 3", " " " wooden spars.
Front of poop, 2'3" square }

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

Particulars of Ventilators in exposed positions on freeboard and superstructure decks:—									
Forecastle Deck	4	vents	8 $\frac{1}{2}$ " dia.	Coaming	14" above deck	$\times \frac{1}{4}$ " thick,	wood plugs		
"	1	"	16" " to field,	"	3'0"	$\times \frac{1}{4}$ "	"		
"	2	"	6" " " "	"	6"	$\times \frac{3}{8}$ "	"	and canvas	
"	2	"	5 $\frac{1}{2}$ " " " "	"	12"	$\times \frac{3}{16}$ "	"	covers supplied	
Forward Well	5	"	16" clear to field,	"	3'0"	$\times \frac{1}{4}$ "	"		
Bridge Front	2	"	16" " to Bunkers,	"	3'0"	$\times \frac{1}{4}$ "	"	for all	
After Well	3	"	16" " to field,	"	3'0"	$\times \frac{3}{8}$ "	"	ventilators.	
"	1	"	8 $\frac{1}{2}$ " " to Bunker,	"	2'6"	$\times \frac{1}{4}$ "	"		

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

1 off 3 1/2" dia. on Forecastle to Fore Peak →   Close
1 off 5" dia., inside accommodation in front of Pop Bulkhead →  to after Peak
8 off on Foreboard deck 2 to each of No. 2, 3, 6 & 7 Tanks } all flush on deck
4 off on Bridge deck 2 to each of No. 4 & 5 Tanks } with brass screwed fange
All air pipes are provided with efficient covers on top.

Particulars of Gangway Cargo and Coaling Ports:—

none

No Scuppers below Freeboard Deck.

H. W. C. Soil Discharge pipes at break of Forecastle 2 P x 2.5 } about 3' 4" long
3 " " " in Bridge House 3 S. } Freshwater discharge

1 of the amidships soil pipes fitted with valve, all the others fitted with brass flaps

Particulars of Side Scuttles:

In Forecastle - 10" dear Side Scuttles with hinged deadlights,
" Bridge House - 10" " " " " " " " " "

No side scuttles in Poop.

Particulars of Guard Rails :—

Forecastle Deck - 3 Tier Rails, Stanchions 3'-3" above steel deck, spaced 4'-3" apart.

Bridge " - 3 " 3-3 " 43

STEEL DRG
Poop

- 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

SKETCH OF HATCH

Particulars of Gangways, Lifelines, etc. :—

Quota provision for lifelines

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	104.00'	4'-0"	3'-0" x 1'-9"	4	21.00 $\frac{1}{2}$	20.8 $\frac{1}{2}$
Forward Well	116.40'	4'-0"	3'-0" x 1'-9"	5	26.25 $\frac{1}{2}$	23.28 $\frac{1}{2}$


State position of each freeing port } After Well: 7'-11", 32'-11", 58'-9", & 32'-9" to fore end of Port from Bridge End.
(F. and A. position and height above deck edge) } Forward Well: 6'-4", 26'-1", 50'-10", 75'-10", & 101'-1/2" to aft end of Port from Aft. Trans.

Sketch showing the freeing ports are fitted with shutters hinged on rails and give particulars of such: —

Innermost steel plates on 1/8" steel bed fitted longitudinally at centre of opening.

Additional area where shear is less than standard.

Bottom of opening above steel deck 13 1/2"

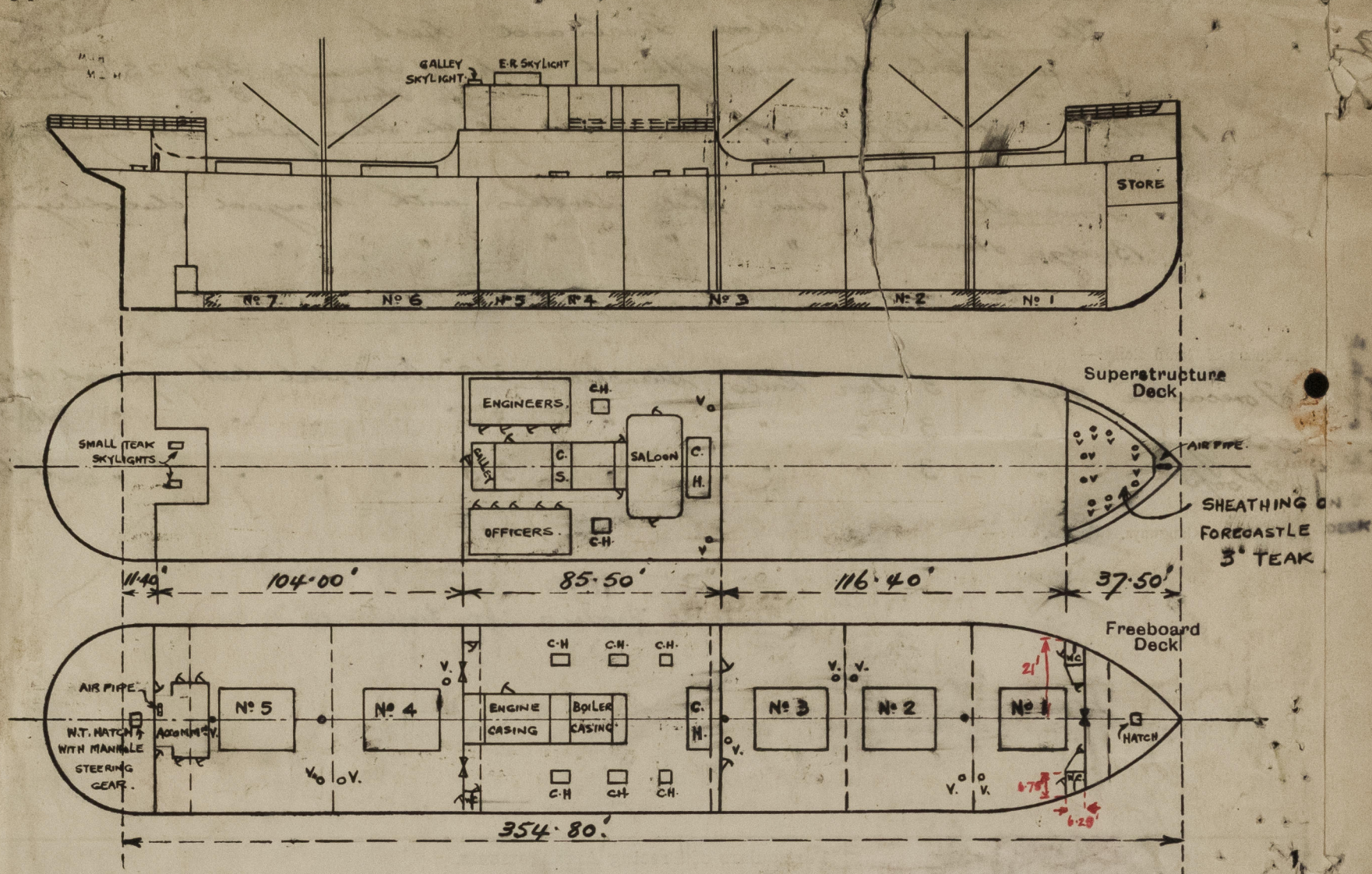


Particulars of Superstructures, Trunks, Casings, Deckhouses.								
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead	2'0" x 3/4"	3/8"	6" x 3 1/2" x 3/8"	2'6"	none	2 at 4'6" x 3'0"	18"	7'6"
Raised Quarter Deck Bulkhead ...	—							
Bridge, After Bulkhead	3'6" x 3/8"	3/8"	3" x 3" x 3/8"	2'8"	none	1 at 4'6" x 1'10" 2 at 4'6" x 3'0"	24" 18"	7'6" 7'6"
Bridge, Forward Bulkhead	3'6" x 7/16"	3/8"	8" x 3 1/2" x 9/16" BA	2'6"	Brackets 3pt & bottom	2 at 2'9" x 2'9"	3'6"	7'6"
Forecastle Bulkhead	—	1/4"	3 1/2" x 3" x 3/8"	2'8"	none	1 at 4'6" x 2'6"	18"	7'6"
MC Bulkhead at Forecastle Trunk, etc.	—	1/4"	3 1/2" x 3" x 3/8"	2'8"	none	4 at 4'6" x 7'10"	20"	7'6"
Trunk, Forward	—							
Exposed Machinery Casings on Free- board or Raised Quarter Decks ...	—							
Exposed Machinery Casings on Super- structure Decks	2'9" x 3/8"	5/16"	4 x 4 x 3/8"	4'0"	none	3 at 4'6" x 1'10"	18"	7'6"
Machinery Casings within Superstruc- tures not fitted with Class I Closing Appliances	—	5/16"	4 x 4 x 3/8"	2'0"	none	1 at 4'6" x 1'10"	18"	7'6"
Deckhouse in front of poop, or Trunk Deck Orlop	2'6" x 3/8"	5/16"		Bulkhead Plated.		4 at 4'6" x 2'0"	18"	7'6"

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

Peop Bulkhead	2 Hinged steel door $\frac{3}{8}$ " thick with 5 wedged clips on outside, door operated from outside only.
Raised Quarter Deck Bulkhead	2-2 $\frac{1}{2}$ " Wood sliding boards in channel slides, Hinged steel door to aft and lock
Bridge, After Bulkhead	2 Hinged steel door $\frac{3}{8}$ " th. with six wedged clips on outside. Operated from outside only.
Bridge, Forward Bulkhead	Opening. 4'-6" x 2'-6" - no means of closing.
Forecastle Bulkhead	2 Hinged steel doors 1P x 1S to Stokeloid with clip bolts inside.
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	1 " " " with lock " Engine Room operating both sides.
Exposed Machinery Casings on Superstructure Decks	1 Hinged wood door (stack) with lock operating both sides.
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	4-1 $\frac{1}{2}$ " Leak doors with ordinary locks.
Deckhouses in front of Peop. on Deck Bulkheads	

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:—

None.

Surveyed in dry dock.

Builder's name and yard number *Blyth Shipbuilding & Dry Dock Co. Ltd., Blyth,*
 Names of sister ships _____
 Owners *The San Peh Steam Navigation Co. Ltd., Shanghai.*

Fee £ *336-*
Cables \$ 51.36.

Received by me _____



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