

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having *Shelter deck*Port of Survey *Shanghai*Date of Survey *11th April 1932*Name of Surveyor *G. H. Macdonald*

(Type of Superstructures.)

Ship's Name

Nationality and Port of Registry

Official Number

Gross Tonnage

Date of Build

*IRIS BANK**BRITISH BELFAST**161861**5626**1930*Moulded Dimensions: Length *425'0"* Breadth *54'0"* Depth *29'9" 38'4" to SHELTER.*Moulded displacement at moulded draught = 85 per cent. of moulded depth *12860* tonsCoefficient of fineness for use with Tables *.734*Particulars of Classification *+100 A1.**Carrying vegetable oil in top tank in tanks between funnels with freeboard*

| Depth for Freeboard (D) | | Depth correction | | Round of Beam correction | |
|---|-------|--|--|---|---------------------------------------|
| Moulded depth | 29.77 | (a) Where D is greater than Table depth (D - Table depth) R = | | Moulded Breadth (B) | 57.00 |
| Stringer plate | .04 | (29.81 - 28.33) 3 = + 4.44 | | Standard Round of Beam = $\frac{B \times 12}{50}$ | 13.68 |
| 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 | 13.5 |
| Depth for Freeboard (D) = | 29.81 | If restricted by superstructures | | Difference | .18 |
| | | | | Restricted to | |
| | | | | Correction = $\frac{\text{Diff}}{4} \times (1 - \frac{S_1}{L})$ | $= \frac{.18}{4} \times .007 = .0003$ |

DEDUCTION FOR SUPERSTRUCTURES.

| | Mean Covered Length (S) | Equivalent Enclosed Length (S ₁) | Height | Height Correction | Effective Length (E) |
|---------------------|-------------------------|--|--------|-------------------|----------------------|
| Poop enclosed | 24.54 | 24.54 | 8.75 | | 24.54 |
| " overhang | | | +3' | | |
| R.Q.D. enclosed | | | wood | | |
| " overhang | | | | | |
| Bridge enclosed | | | | | |
| " overhang aft | 394.46 | 394.46 | 8.75 | | 394.46 |
| " overhang forward | | | +3' | | |
| Fore enclosed | | | wood | | |
| " overhang | | | | | |
| Trunk aft | | | | | |
| " forward | | | | | |
| Tonnage opening aft | 6.00 | 3.00 | 9.0 | | 3.00 |
| " forward | | | | | |
| Total | 425.00 | 422.00 | | | 422.00 |

Standard Height of Superstructure *7.50*" " R.Q.D. *✓*Deduction for complete superstructure *42.00*Percentage covered $\frac{S}{L} = 100\%$ " $\frac{S_1}{L} = 99.30\%$ " $\frac{E}{L} = 99.30\%$ Percentage from Table, Line A. *99.14%*(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 = $42.00 \times .9914 = - 41.64$

SHEER CORRECTION.

| Station | Standard Ordinate | S M | Product | Actual Ordinate | Effective Ordinate | S M | Product |
|-----------------|-------------------|-----|---------|-----------------|--------------------|-----|---------|
| A.P. | 52.50 | 1 | 52.50 | 64.00 | 82.00 | 1 | 82.00 |
| 1/2 L from A.P. | 23.36 | 4 | 93.44 | 26.86 | 36.49 | 4 | 145.96 |
| 1/2 L | 5.78 | 2 | 11.56 | 6.71 | 9.02 | 2 | 18.04 |
| Amidships | ✓ | 4 | ✓ | ✓ | ✓ | 4 | ✓ |
| 1/2 L from F.P. | 11.56 | 2 | 23.12 | 11.06 | 13.86 | 2 | 27.72 |
| 1/2 L | 46.72 | 4 | 186.88 | 44.24 | 56.07 | 4 | 224.28 |
| F.P. | 105.00 | 1 | 105.00 | 108.00 | 126.00 | 1 | 126.00 |
| Total | | | 472.50 | | | | 624.00 |

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - S}{2L} \right) = \frac{151.50}{18} \times \left(\frac{.75 - .50}{2} \right) = - 2.10$

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.

Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta = 13460$

Tons per inch immersion at summer load water line

 $T = 48.00$ Deduction = $\frac{\Delta}{40T}$ inches $= 7.01$ $= 7"$

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{.734 + .65}{1.36} = \frac{1.414}{1.36}$

| | + | - |
|--|------|-------|
| Depth Correction | 4.44 | ✓ |
| Deduction for superstructures | ✓ | 41.64 |
| Sheer correction | ✓ | 2.10 |
| Round of Beam correction | ✓ | ✓ |
| Correction for Thickness of Deck amidships | ✓ | ✓ |
| Other corrections, scantlings, etc. | ✓ | ✓ |
| | 4.4 | |

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, *Wood, Steel, Deck*Tropical Fresh Water Line above Centre of Disc *135"*Fresh Water Line *7"*Tropical Line *6 1/2"*Winter Line *6 1/2"*Winter North Atlantic Line *2'0" x 2'*

Tropical Fresh Water Freeboard

Fresh Water

Tropical

Winter

Winter North Atlantic

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Lloyd's Register

TEAR DOORS IN AFTER END
BOTH SIDES HOSPITAL AFT
CELLS

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

| HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS | | | | | | | | | | | | | | | | |
|--|---|-----------------------|-----------------|-----------------|-----------------|-----------------------|----------------------|-----------------|---------------------|-----------------|-----------------|--------------------|--------------------|------------------|------------------|------------------|
| ← FREEBOARD DECK. → ← SUPERSTRUCTURE DECK. → | | | | | | | | | | | | | | | | |
| Description of Hatchway | | | No 1 | No 2 | No 3 | DEEPTANK. | No 4 | No 5 | No 1 | No 2 | No 3 | No 4 | No 5. | | | |
| Dimensions of Hatchway | | | 24'-9" x 22'-0" | 30'-0" x 22'-0" | 16'-6" x 22'-0" | 2 AT 9'-0" x 8'-7" | 33'-0" x 22'-0" | 33'-0" x 22'-0" | 24'-9 1/2" x 22'-0" | 30'-0" x 22'-0" | 30'-0" x 22'-0" | 33'-0" x 22'-0" | 33'-1" x 22'-0" | | | |
| COAMINGS | { | Height above Deck | 9 x 3 1/2 B.A. | 9 x 3 1/2 B.A. | 9 x 3 1/2 B.A. | 12 x 3 1/2 [| 9 x 3 1/2 B.U.L.B.A. | 9 x 3 1/2 B.A. | 2'-6" ✓ | 2'-6" ✓ | 2'-6" ✓ | 2'-6" ✓ | 2'-6" ✓ | | | |
| | | Thickness { Sides | 1/2" ✓ | 15/32 ✓ | 3/8 ✓ | 1/16 ONLY ✓ | 1/2 ✓ | 1/2 ✓ | 7/16 ✓ | 7/16 ✓ | 7/16 ✓ | 7/16 ✓ | 7/16 ✓ | | | |
| | | Ends | 1/2" ✓ | 15/32 | 3/8 | | 1/2 ✓ | 1/2 ✓ | 7/16 | 1/2 | 1/2 | 7/16 | 1/2 | | | |
| | | Stiffeners | - | - | - | - | - | - | 7 x 3 x 3/8 L ✓ | 7 x 3 x 3/8 L ✓ | 7 x 3 x 3/8 L ✓ | 9 x 3 1/2 x 1/2" ✓ | 9 x 3 1/2 x 1/2" ✓ | | | |
| Brackets, Stays | | | - | - | - | - | - | - | FORGED/RON 2" D.M. | | | | FORGED/RON 2" D. | FORGED/RON 2" D. | FORGED/RON 2" D. | FORGED/RON 2" D. |
| HATCH BEAMS | { | Number | 5 | 5 | 3 | | 5 | 5 | 4 1/2 | 5 | 5 | 5 | 5 | 5 | | |
| | | Spacing | 4'-1 1/2" | 5'-0" | 4'-1 1/2" | | 5'-6" | 5'-6" | 4'-1 1/2" | 5'-0" | 5'-0" | 5'-6" | 5'-6" | 5'-6" | | |
| | | Scantling and Sketch | | | | NIL ✓ | | | | | | | | | | |
| | | Bearing Surface | 3" ✓ | 3" ✓ | 3" ✓ | | 3" ✓ | 3" ✓ | 3" ✓ | 3" ✓ | 3" ✓ | 3" ✓ | 3" ✓ | 3" ✓ | | |
| FORE AND AFTERS | { | Number | | | | | | | | | | | | | | |
| | | Spacing | | | | | | | | | | | | | | |
| | | Unsupported Lengths | | | | | | | | | | | | | | |
| | | Scantling* and Sketch | NIL ✓ | NIL ✓ | NIL ✓ | NIL ✓ | NIL ✓ | NIL ✓ | NIL ✓ | NIL ✓ | NIL ✓ | NIL ✓ | NIL ✓ | NIL ✓ | | |
| Bearing Surface | | | | | | | | | | | | | | | | |
| HATCH COVERS | { | Material | PINE ✓ | PINE ✓ | PINE ✓ | STEEL ✓ | PINE ✓ | PINE ✓ | PINE ✓ | PINE ✓ | PINE ✓ | PINE ✓ | PINE ✓ | PINE ✓ | | |
| | | Thickness | 2 3/4" ✓ | 2 3/4" ✓ | 2 3/4" ✓ | | 2 3/4" ✓ | 2 3/4" ✓ | 2 3/4" ✓ | 2 3/4" ✓ | 2 3/4" ✓ | 2 3/4" ✓ | 2 3/4" ✓ | 2 3/4" ✓ | | |
| | | How fitted | F.B.A. ✓ | F.B.A. ✓ | F.B.A. ✓ | | F.B.A. ✓ | F.B.A. ✓ | F.B.A. ✓ | F.B.A. ✓ | F.B.A. ✓ | F.B.A. ✓ | F.B.A. ✓ | F.B.A. ✓ | | |
| | | Bearing Surface | 3" ✓ | 3" ✓ | 3" ✓ | | 3" ✓ | 3" ✓ | 3" ✓ | 3" ✓ | 3" ✓ | 3" ✓ | 3" ✓ | 3" ✓ | | |
| Spacing of Cleats | | | 24" ✓ | 24" ✓ | 24" ✓ | 28" ✓ | 24" ✓ | 24" ✓ | 24" ✓ | 24" ✓ | 23" ✓ | 24" ✓ | 24" ✓ | | | |
| Number of Tarpaulins | | | NIL. 2 | NIL. 2 | NIL. 2 | 2 | NIL. 2 | NIL. 2 | 3 2 | 3 2 | 3 2 | 3 2 | 3 2 | | | |
| *Are wood fore and afters steel shod at all bearing surfaces? NIL. | | | | | | | | | | | | | | | | |
| Are battens and wedges efficient and in good condition? YES ✓ | | | | | | | | | | | | | | | | |
| Are tarpaulins in good condition and in accordance with rule requirements? NIL ✓ | | | | | | | | | | | | | | | | |
| Are lashings provided in accordance with rule requirements? NIL ✓ | | | | | | | | | | | | | | | | |

Particulars of fiddle, funnel and ventilator coaming:—
 2 @ 30" DIA x 5'-0" x 1/8" TH PORT & STARBOARD (@ SIDES OF FUNNEL)
 " 18 " x " " " CENTRE (FO'RD OF FUNNEL)
 " " " " " " " " PORT & STARBOARD (AFT OF FUNNEL)
 x 1'-6" ABOVE CROWN OF ENG ROOM SKYLIGHT.

FUNNEL CASING $\frac{1}{4}$ " THICK. RINGED TO ENGINE CASING TOP.

Particulars of ~~Flash Bomber Scuttles~~: VENTILATORS IN EXPOSED POSITIONS ON SHELTER DECK.

3 FORECASTLE,
9" DIA x 3'-0" HIGH x 5/16,"
12 " " " " "
9 " " " " " Po
12 " " " " " St
12(4) x 1'-6 " " " P
" " " " " P
6(4) x 3'-3" " " "

1 PORT & STARBO. 18" x 6'-9" x 3/8, NO 1 HOLD. *

1 " " " 24" x " " " " " " * *

7 " " " " 10-3 " " " 2 " * *

1 STAR^{BO} TO REFRIG 12" x 7-3 x 5/16 * *

1 " " " " 10-0 " MUSHROOM. *

1 PORT & STAR^{BO} 24" x 6-9 x 7/16 NO 2 HOLD. *

1 " " " 18" " " 3/8 TWEEN DECKS. *

1 " " " 25 x 3'-8" x 5/8 VENT DERRICK POSTS

1 " " " 12" x 6-9 x 5/16 TO DEEP TANK. *

1 @ 6" DIA x 3-6 x 5/16 STARB^o
 1 " 12 " x 6-9 x " " *
 1 " " " x " x " " MUSHROOM. *
 2 " 24 " x " x 7/16 PORT & STARB^o NO 4 HOLD. *
 1 " 12 " x 2-6 x 5/16 CENTRE AFT. " 5 HOLD. *
 2 " (12x4) x 1-6 x " PORT TO STORES/IN POOP
 3 " " x " x " STARB^o -
 2 " " x " x " TO STEERING GEAR "

1 ON TOP OF HOSPITAL TO TUNNEL
12" DIA x 1-9' x 3/8"

Rents marked x.
supported by steel
brackets to deck.
All rents provided
with wood plugs &
Canvas covers.

Particulars of Companionways :—

Companion to Crew Space forward in Tween Deck 5'-10" High x 5'-0" wide x 6'-8" long.
2 Steel Doors 4'-2" x 2'-0", sills 1'-4" above wood deck, Doors opened from ~~inside~~ ^{both sides}
 $\frac{1}{4}$ " steel plating T bar out, stiffeners 3" x 3 $\frac{1}{2}$ "
 $\frac{3}{8}$ " " Doors, fitted with sliding steel bolts top & bottom.

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

ON CASING TOP TO ACCOMMODATION IN SIDEHOUSES.

1-9" x 1/4" PORT. ✓ 2@ 6" x 7" x 1/4" MUSHROOMS
" STARB? ✓ 2- 9" x 9" x " "
5/16 " ✓
" PORT. ✓

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

| | | | | |
|---|-----|--|------------------|---|
| 1 | 6" | PORT STARB ^D TO WING TANKS. | | |
| 2 | 4" | OIL DRAIN TANK (1/N CENTRE). | GAUZE OVERMOUTH. | |
| 2 | 2½" | COFFERDAM. | " | " |
| 2 | " | FEEDWATER TANK | | |
| 2 | 4" | COFFERDAM. | " | " |

✓ 1 @ 4" NO 2 TUNNEL TANK. G. ES OVER MOUNT
1 " 3 " "
1 " 3 1/2". TO AFTER PEAK AIR & FLD
2 " 2 1/2 " F.W. TANKS " " "

Height of air pipes on shelter deck 28
Wood plugs + canvas covers provided for all air pipes

and Coaling Ports :—

NIL.

NO VALVE

1 " 2"

1-3 " " " " "

SANITARY DISCHARGES, CONTO 1 @ 3" ENG^{RS} ACCOM^{ON} 1-3 ABOVE FREEBOARD, PORTSIDE. G.M. VALVE FITTED

4 in ¹⁻³ "Spur Gear" compartment)

the sharing of the compartment

5 " Doncastle, each side } all 12

2. " *Alnus* *glabra* *viridis*


all 12" dia clear glass, & fitted with lead lights

From Fore End of No 1 Hatch to Side Lenses & from Side Lenses to Fore End of Salvon Lense,
(Bulkhead in way of Salvon House, No 3 Hatch & Engine Casing.)
From after End of Casing to after end of Tonnage Opening. ✓

particulars of Gangways, Lifelines, etc. :—

gang way for Accommodation Ladder in Bulwark 3'0" wide, steel door
hinged to bulwark & secured by bolt when closed. Sill 11" above deck. ✓

| 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 Wall <i>AMIDSHIPS...</i> | <i>138'-0"</i> | <i>3'-6"</i> | <i>3'-7" x 1'-6"</i> <i>topen rails</i> | <i>2</i> | <i>✓</i> | |
| Forward Wall <i>TONNAGE OPENING</i> | | <i>TWEEN DECK</i> | <i>1'-11 1/2" x 1'-1"</i> <i>topen rails</i> | <i>1</i> | <i>✓</i> | |

State position of each freeing port ... *AMIDSHIPS.* *20'-0" from fore end of bulwark, 49'-0" from fore end of bulwark to fore end.*
(F. and A. position and height above deck edge) { *After Well:—* *Opening in each instance. Bottom edge 1'-0" above deck.*
State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— *freeing ports are fitted with hinged shut*
plates.
Additional area where sheer is less than standard. *this:—*  *TONNAGE OPENING, HINGED ON UPPER SIDE.*

| | Coaming | Plating | Stiffeners | Spacing | End Attachments of Stiffeners | Size of Openings | Height of Sills | Height Casings |
|--|---------|---------|------------------|-------------|----------------------------------|------------------|--------------------|-------------------|
| Poop Bulkhead ✓ | | 30 | 3 x 3 x 30 | 29" | - | None | | 8" |
| Raised Quarter Deck Bulkhead ... | | | | | | | | |
| Bridge, After Bulkhead | | 5/16" | 3 x 3 x 25" | 29" | - | 60" x 3' 10" | 16" | |
| GALLEY, FORWARD ENGINE CASING. | | | | | | | | |
| Bridge, Forward Bulkhead | 5/16 | 5/16 | 4 x 3 x 5/16 | 3' 0" | - | 5' 3" x 2' 6" | 1-3. | |
| SIDE HOUSES AT SIDE OF ENG " | | | | | | | | |
| Forecastle Bulkhead | 1/4 | 1/4 | - | 3' 0" | - | " " | " | |
| Trunk, Aft | | | | | | | | |
| Trunk, Forward | | | | | | | | |
| Exposed Machinery Casings on Free- board or Raised Quarter Decks ... | | | | | | | | |
| Exposed Machinery Casings on Super- structure Decks | | 30 | 3 x 2 1/2 x 5/16 | 26 | - | 6' 3" x 2' 4" | 16 1/2 | 8-0 |
| Machinery Casings within Superstruc- tures not fitted with Class I Closing Appliances | | 0 | | | | | | |
| SIDE HOUSES ON DECK FORWARD STABO | 1/4" | 1/4" | 6 x 3 x 3/8 B.A. | ABOUT 2' 0" | - | 5' x 2' 0" | 1' 3" | 7' 3" |
| SALOON HOUSE. | 5/20 | 5/20 | " | 2' 3" | - | 5' 3" x 2' 0" | 1' 3" | 7' 9" |
| Deckhouses on Flush Deck Ships ... | 1/4 | 1/4 | " | " | - | 4' 6" x 2' 0" | 1' 3" | 6' 6" |
| HOSPITAL ETC. AFT. | | | | | | | | |

| | | |
|---|----------|--|
| Poop Bulkhead | ✓ | No openings |
| Raised Quarter Deck Bulkhead | | |
| Bridge, After Bulkhead | | 3" storm board in riveted channels full height |
| 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 | | No openings |
| SIDE HOUSES ON DECK FORWARD & STARBOARD | hins | STEEL DOORS ON OUTSIDE, 5'-0" x 2'-0" x 1/4", FITTED WITH HASP & PADLOCK. SALON - TEAK DOORS IN AFTER END EUROPEAN GALLEY DOOR PORT & STARBOARD 5'-3" x 2'-6" IN HALVES, FITTED AFTER END ENTRANCE TO ENGINE ROOM THRU TEAK DOOR |

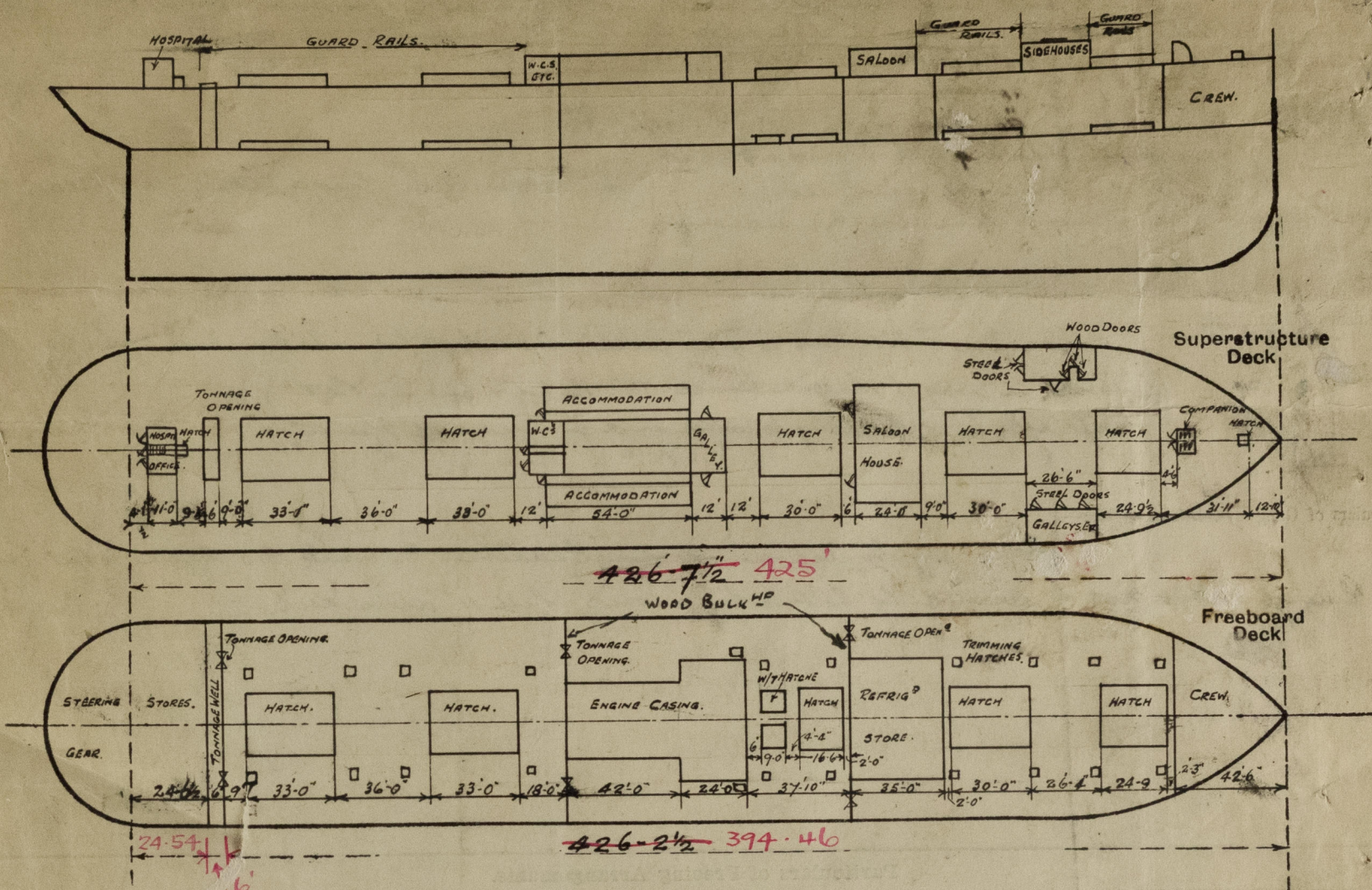
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2 TEAK DOORS IN AFTER END
BOTH SIDES HOSPITAL APT
ALL DAY

FRESHBANK
FORD PORT 510
STARBOARD

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:—



*Tonnage hatch on Shelter Deck: 6'-0" x 22'-0"
Height 7' ba. coaming 50"
Wood hatch covers 3" fra.
Eye for lashings*

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

5 FORB
9" DIA x
12 - x
9 - x
12 - x
5 (12x4) x 1-6
3 - x
1 (6x4) x 3-3

Partic

Particulars
ON CASING 7
1-2

Builder's name and yard number *Workman Clark (1928) Belfast.*

Names of sister ships

Owners *The Bank Line Ltd.*

Fee \$100.00
2nd Survey \$60.00

Received by me



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Foundation