

| | | | | |
|--|----------------------------------|-----------------|--|----------------------------------|
| Computation of Freeboard for Steamer, Sailing Ship, Tanker | | | | |
| having <u>Spar Deck, Bridge & Forecastle Deck.</u> | | | | |
| (Type of Superstructures.) | | | | |
| Ship's Name | Nationality and Port of Registry | Official Number | Gross Tonnage | Date of Build |
| <u>S. S. "PACUARE"</u> | <u>British Belfast.</u> | <u>120705.</u> | <u>3896</u> | <u>1905. Swansea.</u> |
| Moulded Dimensions: Length <u>366.58. ✓</u> Breadth <u>46.2 ✓</u> Depth <u>32.6" ✓</u> | | | Moulded displacement at moulded draught = 85 per cent. of moulded depth <u>8890 ✓</u> tons | |
| Coefficient of fineness for use with Tables <u>.665</u> | | | <u>.68 ✓ Lowest in Tables.</u> | |
| Port of Survey <u>Swansea.</u> | | | Date of Survey <u>12th 13th & 14th May 1932.</u> | |
| Name of Surveyor <u>R. H. Armstrong.</u> | | | Particulars of Classification <u>+100. A. I</u> | |
| <u>L No. 3-6. 20.</u> | | | | |

| Depth for Freeboard (D) | | Depth correction | Round of Beam correction |
|--|--------------------|--|--|
| Moulded depth | 32'-6" .5 ✓ | (a) Where D is greater than Table depth (D-Table depth) R = | Moulded Breadth (B) 46'-2' |
| Stringer plate | 56" .05 ✓ | (32.77 - 24.44) 2.820 = + 23.49" ✓ | Standard Round of Beam = $\frac{B \times 12}{50} = 11.09"$ ✓ |
| Sheathing on exposed deck |22 ✓ | (b) Where D is less than Table depth (if allowed) (Table depth-D) R = | Ship's Round of Beam = 11 1/2" ✓ |
| $T \left(\frac{L-S}{L} \right) = .25 \times \frac{323.58}{366.58} \checkmark$ | | | Difference 41" ✓ |
| Depth for Freeboard (D) = <u>32.77</u> ✓ | | If restricted by superstructures ✓ | Restricted to ✓ |
| | | | Correction = $\frac{\text{Diff}^{\circ}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{41}{4} \times .9075$ ✓ |

DEDUCTION FOR SUPERSTRUCTURES.

| | Mean Covered Length (S) | Equivalent Enclosed Length (S.) | Height | Height Correction | Effective Length (E) |
|-------------------------|-------------------------------|---------------------------------------|--------|----------------------|-------------------------|
| Poop enclosed ... | | | | | |
| " overhang... | | | | | |
| R.Q.D. enclosed ... | | | | | |
| " overhang ... | | | | | |
| Bridge enclosed... | 159'-0" | | 7'-6" | | |
| " overhang aft ... | 3 1/2" | | | | |
| " overhang forward | 43'-0" | | | | |
| F'cle enclosed open ... | 43'-0" | 33.92 ✓ | 7'-3" | | 33.92 |
| " overhang ... | 6" | | | | |
| Trunk aft ... | | | | | |
| " forward... | | | | | |
| Tonnage opening aft ... | | | | | |
| " forward | | | | | |
| Total ... | 43.00 ✓ | 33.92 ✓ | | | 33.92 |

Standard Height of Superstructure 7.166 ✓

" " R.Q.D. _____

Deduction for complete superstructure 39.77 ✓

Percentage covered $\frac{S}{L} = 11.73\%$ ✓

" " $\frac{S_1}{L} = 9.25\%$ ✓

" " $\frac{E}{L} = 9.25\%$ ✓

Percentage from Table, Line A.
(corrected for absence of forecastle (if required)) 4.62% ✓

Percentage from Table, Line B.
(corrected for absence of forecastle (if required)) _____

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

Deduction = $39.77 \times .0462 = -1.84$ " ✓

SHEER CORRECTION.

| Station | Standard Ordinate | S M | Product | Actual Ordinate | Effective Ordinate | S M | Product |
|-------------------------------|----------------------|--------|----------|--------------------|-----------------------|--------|---------|
| A.P. ... | 39 46.66 | ✓ 1 | 46.66 ✓ | 40.00 ✓ | 40.00 ✓ | 1 | 40.00 |
| $\frac{1}{8}$ L from A.P. ... | 17 20.76 | 4 | 83.04 | 18.17 ✓ | 18.17 ✓ | 4 | 72.68 |
| $\frac{2}{8}$ L " ... | 3 2 5.13 | 2 | 10.26 | 4.54 ✓ | 4.54 ✓ | 2 | 9.08 |
| Amidships ... | — | 4 | ✓ | ✓ | ✓ | 4 | ✓ |
| $\frac{3}{8}$ L from F.P. ... | 8 2 10.26 | ✓ 2 | 20.52 | 8.59 ✓ | 8.59 ✓ | 2 | 17.18 |
| $\frac{1}{8}$ L " ... | 33 2 41.53 | 4 | 166.12 | 34.36 ✓ | 34.36 ✓ | 4 | 137.44 |
| F.P. ... | 80 93.32 | ✓ 1 | 93.32 | 80.00 ✓ | 80.00 ✓ | 1 | 80.00 |
| Total ... | | | 419.92 ✓ | | | | 356.38 |

$$\frac{\text{Mean actual sheer aft}}{\text{Mean standard sheer aft}} = \text{Deficient}$$
$$\frac{\text{Mean actual sheer forward}}{\text{Mean standard sheer forward}} = \text{Deficient}$$

Length of enclosed superstructure forward of amidships =

aft of

Standard Sheer Forward Actual.

$10.26 \div 3 = 30.78$ ✓
 $41.53 \div 3 = 124.59$ ✓
 $93.32 \div 1 = 93.32$ ✓
248.69 ✓

$8.59 \div 3 = 25.77$ ✓
 $34.36 \div 3 = 103.08$ ✓
 $80.00 \div 1 = 80.00$ ✓
 $208.85 \div 1 = 208.85$ ✓

✓
 .839 of Standard

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left(-75 - \frac{8}{2L} \right) = \frac{63.54}{18} \left(-75 - 0.586 \right)$$

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. | | Correction for coefficient | <div style="text-align: right;">61.37 ✓</div> <div style="text-align: right;">61.37 ✓</div> |
| Depth to Freeboard Deck = <u>32.80</u> Ft. ✓ | Displacement in salt water at summer load water line $\Delta = 8315$ | | |
| Summer freeboard = <u>7.15</u> ✓ | Tons per inch immersion at summer load water line $T = 31$ ✓ | Depth Correction 23.49 ✓ | |
| Moulded draught (d) = <u>25.65</u> ✓ | Deduction = $\frac{\Delta}{40T}$ inches $= 6.42 = 6.4$ ✓ | Deduction for superstructures - 1.84 ✓ | |
| | | Sheer correction 2.44 ✓ | |
| | | Round of Beam correction - 0.09 ✓ | |
| | | Correction for Thickness of Deck amidships - | |
| | | Other corrections, scantlings, etc. 0.36 - | |
| | | Summer Freeboard = <u>85.73</u> ✓ | |

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck:—

| | | | | | | |
|--|-------|-----|---------|--------------------------------|-----|-----------|
| Tropical Fresh Water Line above Centre of Disc | ... | ... | 13 3/4" | Tropical Fresh Water Freeboard | ... | 6'-0 3/4" |
| Fresh Water Line | " | " | 6 3/4" | Fresh Water | " | 6'-7 1/4" |
| Tropical Line | " | " | 6 1/2" | Tropical | " | 6'-7 1/4" |
| Winter Line | below | " | 6 1/2" | Winter | " | 7'-8 1/4" |
| Winter North Atlantic Line | " | " | ✓ | Winter North Atlantic | " | ✓ |

Pacure.

Particulars of fiddley, funnel and ventilator openings —
 Bunker Hales, forward of funnel.
 18'-4" x 10'-4" Coaming 16" x 36"
 2-Sleel divisions 2'-9" apart
 1-F4-A-4-U-0" from N.S. Coaming T 6' x 6' x 5"
 housed in sockets.
 Bunks 24" Cro. M.W. covers 2 1/2" p.s.
 bearing 2'-3". Tarpaulins 3.
 Coaming Top plated. Gratings to fiddley no covers. Wood coaming 5'-0" high x 18'-6" x 8'-6"
 2-Funels 6" Aciler Rm. 11'-3" dia. Coaming 5'-0" high x 2'-5" thick 1.P-1.S.
 Main Funnel riveted to coaming top
 2-Funels 6" Engine Rm. 20" dia. Coaming 6'-6" high x 2'-5" thick 1.P-1.S.
 Eng. Rm. Skylight 2'-5" plating. 4 Plaps each side 2'-5" thick 3 glass circles in each.
 Bunker Hales 18'-6" x 6'-0". Coaming 6'-3" x 11'-4". B.A. Cleats 24" apart. M.W. covers 2 1/2" p.s.
 Wood wedges, steel battens. 3 Tarpaulins.

Stone.

None. 1

A hand-drawn diagram of a semi-circular arch. The width of the base is labeled as $2'-0"$ with arrows pointing to the left and right edges. The height from the base to the top of the arch is labeled as $1'4\frac{1}{2}"$ with an arrow pointing upwards from the center of the base.

Wood plugs & canvas covers provided.

decks: ---

4" OFF →

2" 2" 2" 2" 1"

4 - 2 1/2" x 2"

5 - 1 9/16" x 2"

2 - 1 9/16" x 2"

2 - 2 0 1/2" x 3 1/2"

Shifting holes drilled in 1/2" of bend of all air pipes in midland Deck and wood plugs & canvas covers fitted.

Canvas plug

B A

Shifting holes

Covers

DETAILS AS FOR AFTER DOOR.

3' 6" W.C. S. 4" discharge. Valve on ship's side.
 " Wash place scupper 2" dia: Valve on ship's side.
 Root " " 2 1/2 " No " " "
 " W.C. S. 4" discharge. Valve on ship's side.
 Sliding Gear House 2" dia: Scupper No Valve on ship's side.
 3-6 " 4" Scupper Chow: gunnel bar amidships each side.

[illegible]

3' Cle. Deck. 3 Tier steel rails Top 2" dia. 2 lower 1" dia. Stanchions 3'-4" high, 11'-5" apart.
 Bridge " " " " " " " " " " " " 3'-8" " 4'-2" "
 Ford. Bulwarks 4" " " " " " " " " " " " 4'-0" " 3'-2 & 3'-9" "
 after " 4" " " " " " " " " " " " " " 4'-4" " 4'-0"

~~done.~~
lifelines fitted from foot house to bridge house
and bridge house to Newcastle

State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such: *Hinged up shutters 26 ft.*

Additional area where sheer is less than standard.

SECTION

PLAN


HINGED up shutters 26 ft.

HINGED

39'-8" 57'-0" OPEN RAILS 39'-0" 12'-0" 36'-2" 12'-0" 40'-0" 2'-0" 12" 2'-0" 26'-7" 30'-5" OPEN RAILS 12'-0" 14'-10" 9'-2"

| | | | | | | | |
|---|----|--------------|------------|--------------|---|-----|------|
| Exposed Machinery Casings on Super-structure Decks ... | 37 | 3" x 3" x 32 | 2-3 x 3-0" | BKTS. T+B | W. Q.L. 11 x 2-0 x 1 1/2" \$0.5-0 x " x 36 | 15" | 7-6" |
| Machinery Casings within Superstructures not fitted with Class I Closing Appliances ... | | | | | | | |
| Deckhouses on Flush Deck Ships ... | | | | | | | |

| | |
|---|--|
| ✓Poop Bulkhead/HOUSE. ... | Steel and Wood Doors. Open both sides. |
| Raised Quarter Deck Bulkhead ... | |
| Bridge, After Bulkhead ... | |
| Bridge, Forward Bulkhead ... | |
| Forecastle Bulkhead ... | Wood Doors. Open both sides |
| Exposed Machinery Casings on Free-board Raised Quarter Decks ... | Wood and Steel Doors. Open both sides. (enclosed by steel house) |
| Exposed Machinery Casings on Super-structure Decks ... | |
| Machinery Casings within Superstructures not fitted with Class I Closing Appliances ... | |
| Deckhouses on Flush Deck Ships ... | |



Lloyd's Register
Foundation

W542-01522

