

Lloyd's Register of Shipping

SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker
 having One Deck-(Steel).with Raised Quarter Deck,Bridge & Forecastle.
Steel Twin Screw Motorship-(Converted 11-30.-N.E.11-30.)
 (Type of Superstructures.)

Port of Survey AUCKLAND.N.Z.

Date of Survey October, 1932.

Ship's Name **PUKEKO.**
 Nationality and Port of Registry British.
Napier.N.Z.
 Official Number 121597.
 Gross Tonnage 742.
 Date of Build 1928.
3.month.

Name of Surveyor W.Richard Smith.
 Assisted by: C.C.Plunket.

Particulars of Classification 100.A1.

Moulded Dimensions: Length 180'-0" Breadth 29'-4" Depth 14'-0"
 Moulded displacement at moulded draught = 85 per cent. of moulded depth 11'9".Ft.1340 tons
 Coefficient of fineness for use with Tables .75. .749-

| Depth for Freeboard (D) | | Depth correction | | Round of Beam correction | |
|--|-----------------|---|--|--|-----------------------|
| Moulded depth | 14'-0" | (a) Where D is greater than Table depth (D-Table depth) R = <u>14'-003 -12. =</u> <u>2'-003 X 1'385 =</u> <u>+2'76".2-81"</u> | | Moulded Breadth (B) | <u>29'-4.Ft.29.25</u> |
| Stringer plate | <u>.040</u> | (b) Where D is less than Table depth (if allowed) (Table depth-D) R = <u>---</u> | | Standard Round of Beam = $\frac{B \times 12}{50}$ | <u>7'103". 7.02</u> |
| Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ <u>---</u> | <u>14'-040"</u> | | | Ship's Round of Beam | <u>7'5". 7.50</u> |
| Depth for Freeboard (D) = <u>14'-003.Ft.</u> | | If restricted by superstructures <u>---</u> | | Difference = <u>7'47".</u> | |
| | | | | Restricted to | <u>.43 x .3065</u> |
| | | | | Correction = $\frac{\text{Diff}^2}{4} \times \left(1 - \frac{S_1}{L} \right)$ | <u>7'07". = .04</u> |

DEDUCTION FOR SUPERSTRUCTURES.

| | Mean Covered Length (S) | Equivalent Enclosed Length (S ₁) | Height | Height Correction | Effective Length (E) | |
|-------------------------|-------------------------|--|--------------|-------------------|----------------------|--|
| Poop enclosed ... | | | | | | Standard Height of Superstructure <u>6'-0"</u> |
| " overhang ... | | | | | | " R.Q.D. <u>3'-6". 3.53</u> |
| R.Q.D. enclosed ... | <u>50'-0"</u> | <u>50'-0"</u> | <u>3'-6"</u> | <u>3.53</u> | <u>50'-0"</u> | Deduction for complete superstructure <u>24".</u> |
| " overhang ... | | | | | | Percentage covered $\frac{S}{L} =$ <u>69.5%. 69.35%</u> |
| Bridge enclosed... | <u>51'-4"</u> | <u>51'-4"</u> | <u>7'-3"</u> | <u>---</u> | <u>51'-4"</u> | " $\frac{S_1}{L} =$ <u>69.5%. 69.35%</u> |
| " overhang aft ... | | | | | | " $\frac{E}{L} =$ <u>69.5%. 69.12%</u> |
| " overhang forward | | | | | | Percentage from Table, Line A. |
| Fore enclosed ... | <u>23'-6"</u> | <u>23'-6"</u> | <u>7'-3"</u> | <u>---</u> | <u>23'-6"</u> | (corrected for absence of forecastle (if required)) <u>---</u> |
| " overhang ... | | | | | | Percentage from Table, Line B |
| Trunk aft ... | | | | | | Interpolation for bridge less than 2L (if required) <u>---</u> |
| Tonnage opening aft ... | | | | | | Deduction = <u>.615</u> |
| " " forward | | | | | | <u>61.3% X 24". = -14.76"</u> |
| Total ... | <u>124'-10"</u> | <u>124'-10"</u> | | | <u>124'-10"</u> | <u>-14.76"</u> |

SHEER CORRECTION.

| Station | Standard Ordinate | S | M | Product | Actual Ordinate | Effective Ordinate | S | M | Product | |
|--|-------------------|---|---|---------|-----------------|--------------------|---|---|---------|---|
| A.P. ... | 28'00. | 1 | | 28'00. | 24'00. | 24'00. | 1 | | 24'00. | Mean actual sheer aft = $\frac{68}{84} = 88.9\%$ Deficient |
| 1/2 L from A.P. ... | 12'46. | 4 | | 49'84. | 10'27. | 10'27. | 4 | | 41'08. | Mean actual sheer forward = $\frac{168}{168} = 100\%$ Deficient |
| 2/3 L " ... | 3'08. | 2 | | 6'16. | 2'57. | 2'57. | 2 | | 5'14. | Mean standard sheer forward = $\frac{168}{168}$ |
| Amidships ... | 1'00. | 4 | | 1'00. | 5'73. | 5'73. | 4 | | 11'46. | Length of enclosed superstructure forward of amidships = $\frac{11}{L} = .61$ |
| 2/3 L from F.P. ... | 6'16. | 2 | | 12'32. | 6'00. | 6'00. | 2 | | 12'00. | " " aft of " = $\frac{40.3}{180} = 22.4\%$ |
| 1/2 L " ... | 24'92. | 4 | | 99'68. | 22'91. | 22'91. | 4 | | 91'64. | Sheer deficient |
| F.P. ... | 56'00. | 1 | | 56'00. | 54'00. | 54'00. | 1 | | 54'00. | |
| Total ... | | | | 252'00. | | | | | 236'00. | |
| Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{252-236}{18} \times \frac{.75 - .3467}{.4033} = \frac{16}{18} \times .4033 = +.356 + .55 = .906$ | | | | | | | | | | |
| If limited on account of midship superstructure. --- | | | | | | | | | | |
| If limited to maximum allowance of 1 1/2 ins. per 100 ft. --- | | | | | | | | | | |

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck 14.03 Ft.
14'-003.
 Summer freeboard .77
.75
 Moulded draught (d) = 13'-253.

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = 3 1/4"

Addition for Winter North Atlantic Freeboard (if required) = 2"

Deduction for Fresh Water.

Displacement in salt water at summer load water line
 $\Delta =$ 1396.1525
 Tons per inch immersion at summer load water line
 T = 11.

Deduction = $\frac{\Delta}{40T}$ inches
 = 3 1/4. 3.46
 = 3 1/2

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient = 1.05 X 19.8. =

.749 + .68. 1.429
1.36 1.36

Depth Correction ... 2'76.
 Deduction for superstructures ... 14'76
 Sheer correction ... 1356.
 Round of Beam correction... 107.
 Correction for Thickness of Deck amidships04
 Other corrections, scantlings, etc. ... 3.36 14.80

19'8.inches.

20'79.

20.80

Summer Freeboard = 9'13.inches.

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck: 9.inches.

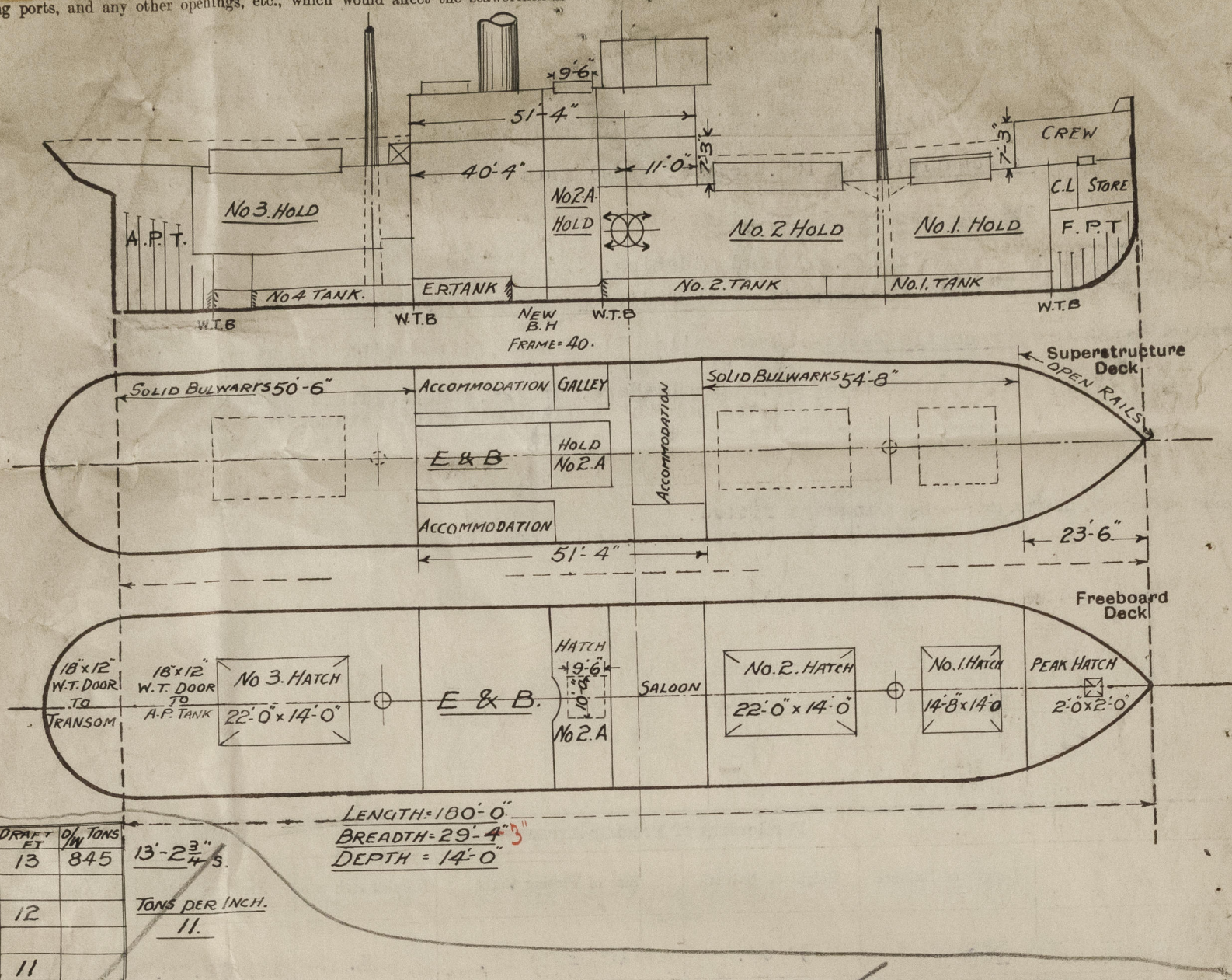
| | | | |
|--|---------------|------------------------------------|---------------|
| Tropical Fresh Water Line above Centre of Disc ... | <u>6 1/4"</u> | Tropical Fresh Water Freeboard ... | <u>2 1/4"</u> |
| Fresh Water Line " " ... | <u>3 3/4"</u> | Fresh Water " " ... | <u>6"</u> |
| Tropical Line " " ... | <u>3 1/4"</u> | Tropical " " ... | <u>5 1/4"</u> |
| Winter Line below " " ... | <u>3 1/4"</u> | Winter " " ... | <u>1 1/4"</u> |
| Winter North Atlantic Line " " ... | <u>5 1/4"</u> | Winter North Atlantic " " ... | <u>1 1/4"</u> |

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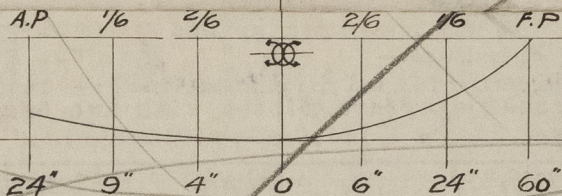
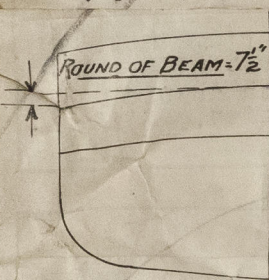
Hand-drawn sketch of a tank. The width is labeled as 11". The diameter of the circular end is labeled as 3" INT. DIA.

| Particulars of Closing Appliances (state if capable of being manipulated from both sides). | | | |
|--|-----|-----|--|
| Poop Bulkhead | ... | ... | --- |
| Raised Quarter Deck Bulkhead | ... | --- | No openings |
| Bridge, After Bulkhead | ... | --- | No openings |
| Bridge, Forward Bulkhead | ... | --- | No openings |
| Forecastle Bulkhead | ... | ... | 4. Class 11. Ordinary Hinged Steel Doors permanently attached, worked both sides. |
| Exposed Machinery Casings on Freeboard or Raised Quarter Decks | ... | --- | |
| Exposed Machinery Casings on Superstructure Decks | ... | --- | |
| Machinery Casings within Superstructures not fitted with Class I Closing Appliances | ... | ... | 4. Class 11. Two Steel & Two Wood ordinary hinged doors permanently attached worked from both sides. |
| Deckhouses on Flush Deck Ships | ... | --- | |

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:—



State any special features in the construction of the ship:— Open floors Frames 40. to 47. originally under Boiler,



PARTICULARS OF SURVEY: see Rpt. No. 1628. attached.

Freeboard Survey & Special Survey No. 1-32. NOW SEEN:— Vessel placed in Dry Dock and bottom cleaned and examined, Rudder, stern frame, keel, stem and all outside plating, Holds, engine & boiler space, Tank Tops, Limbers & Bilges, Decks, Hatchways, Hatchway Beams, Coamings, Carriers, Stiffeners, Stays, Ring Bolts, plating, Hatchway covers, Tarpaulins, Cleats & Battens, Wedges & all hatch closing appliances, Superstructure, Machinery casing, Riddle, Funnel & Ventilator Coamings, Skylights, Casings, Doors, Plating & Stiffeners, Bulkheads plating & stiffeners & fastenings, Ventilators, Ventilator covers, coamings, Air pipes, Scupper, Sanitary discharge pipes, Bulwarks, Freeing appliances, Guard rails, Stanchions & fastenings, Forecastle & Bridge their plating & stiffeners, Sidelights, Deadlights, W.T. Doors and all Bulkhead closing means, Vessel examined throughout for condition and found in order, Length, Breadth, Depth, Round of Beam, Sheer Heights, and existing Freeboard markings now verified, Survey in accordance with requirements for Freeboard now complete, (Safety & Loadline Conventions Act, 1932). Certificate Recommended.

Signed:

W. Richard Smith.
Surveyor to Lloyds Register.

Builder's name and yard number The Goole S.B. & Repairing Co. (1927) Ltd. No. 278.

Names of sister ships —

Owners Messrs. Richardson & Co. Ltd. Napier. New Zealand.

Fee £ 4 : 0 : 0.

Received by me



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