

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Index. No.

(For London Office only.)

28 JUN 1935

 Computation of Freeboard for Steamer, Sailing Ship, Tanker
 having Fick. and Bridge
Port of Survey CopenhagenDate of Survey 25th June 1935Name of Surveyor A. J. LyderenParticulars of Classification 100. A. 1.

(Class contemplated)

(Type of Superstructures.)

| Ship's Name | Nationality and Port of Registry | Official Number | Gross Tonnage | Date of Build | |
|---|----------------------------------|-----------------|-----------------|---------------|--------|
| M/V "CANADA" (Nakskov Yard. N° 62) | Danish. Copenhagen | ✓ | Not measured | 1935 | |
| Moulded Dimensions: Length | 141.730 | Breadth | 19.510 | ✓ Depth | 12.200 |
| Moulded displacement at moulded draught = 85 per cent. of moulded depth | 21500 m ³ | | | | |
| Coefficient of fineness for use with Tables | .75 | | | | |

| Depth for Freeboard (D) | | | | |
|---|-----|-----|-----|---------------|
| Moulded depth | ... | ... | ... | <u>12.200</u> |
| Stringer plate | ... | ... | ... | <u>11½</u> |
| Sheathing on exposed deck | ... | ... | ... | <u>5.5</u> |
| $T \left(\frac{L-S}{L} \right) = 76 \times \frac{10.53}{141.73} =$ | | | | |
| Depth for Freeboard (D) = | | | | |
| <u>12.217</u> | | | | |

| Depth correction | |
|--|--|
| (a) Where D is greater than Table depth (D - Table depth) R = | <u>8.33 (12.217 - 9.448) × 30 = +692</u> |
| (b) Where D is less than Table depth (if allowed) (Table depth - D) R = | <u>✓</u> |
| If restricted by superstructures | <u>-</u> |

| Round of Beam correction | |
|--|--|
| Moulded Breadth (B) | <u>19.510</u> |
| Standard Round of Beam = $\frac{B \times 12}{50}$ | <u>390</u> |
| Ship's Round of Beam | <u>150</u> |
| Difference | <u>240</u> |
| Restricted to | <u>✓</u> |
| Correction = $\frac{\text{Diff}^2}{4} \times \left(1 - \frac{S_1}{L} \right)$ | <u>$\frac{240^2}{4} \times \frac{3607}{4} = +222$</u> |

DEDUCTION FOR SUPERSTRUCTURES.

| | Mean Covered Length (S) | Equivalent Enclosed Length (S ₁) | Height | Height Correction | Effective Length (E) |
|-------------------------|-------------------------|--|--------------|------------------------------|------------------------------|
| Poop enclosed ... | ✓ | | | | |
| " overhang ... | ✓ | | | | |
| R.Q.D. enclosed ... | ✓ | | | | |
| " overhang ... | ✓ | | | | |
| Bridge enclosed ... | <u>68.80</u> | <u>68.80</u> | <u>25.10</u> | | <u>68.80</u> |
| " overhang aft ... | | | | | |
| " overhang forward ... | | | | | |
| Fore enclosed ... | <u>21.80</u> | <u>21.80</u> | <u>20.60</u> | <u>20.55</u> <u>22.90</u> | <u>21.80</u> |
| " overhang ... | | | | | |
| Trunk aft ... | ✓ | | | | |
| " forward ... | ✓ | | | | |
| Tonnage opening aft ... | ✓ | | | | |
| " " forward ... | ✓ | | | | |
| Total ... | <u>90.60</u> | <u>90.60</u> | | | <u>88.36</u> <u>90.60</u> |

| | |
|---|---|
| Standard Height of Superstructure | <u>2.290</u> |
| " " R.Q.D. | <u>✓</u> |
| Deduction for complete superstructure | <u>1067</u> |
| Percentage covered $\frac{S}{L} =$ | <u>63.93</u> |
| " " $\frac{S_1}{L} =$ | <u>63.93</u> |
| " " $\frac{E}{L} =$ | <u>63.93.62.34%</u> |
| Percentage from Table, Line A. (corrected for absence of forecastle (if required)) | <u>✓</u> |
| Percentage from Table, Line B. (corrected for absence of forecastle (if required)) | <u>52.68 4998</u> |
| Interpolation for bridge less than 2L (if required) | |
| Deduction = | <u>1067 × 52.68 = -562</u> <u>4998 533</u> |

SHEER CORRECTION.

| Station | Standard Ordinate | S | M | Product | Actual Ordinate | Effective Ordinate | S | M | Product |
|-------------------|-------------------|---|---|--------------|-----------------|--------------------|---|---|--------------|
| A.P. ... | <u>1435</u> | 1 | | <u>1435</u> | <u>1425</u> | <u>1425</u> | 1 | | <u>1425</u> |
| ¼ L from A.P. ... | <u>637</u> | 4 | | <u>2548</u> | <u>634</u> | <u>634</u> | 4 | | <u>2536</u> |
| ½ L " ... | <u>159</u> | 2 | | <u>318</u> | <u>167</u> | <u>167</u> | 2 | | <u>334</u> |
| ¾ L " ... | <u>-</u> | 4 | | <u>-</u> | <u>0</u> | <u>-</u> | 4 | | <u>-</u> |
| Amidships ... | <u>-</u> | 4 | | <u>-</u> | <u>0</u> | <u>-</u> | 4 | | <u>-</u> |
| ¾ L from F.P. ... | <u>319</u> | 2 | | <u>638</u> | <u>206</u> | <u>206</u> | 2 | | <u>412</u> |
| ¼ L " ... | <u>1275</u> | 4 | | <u>5100</u> | <u>1203</u> | <u>1203</u> | 4 | | <u>4812</u> |
| F.P. ... | <u>2870</u> | 1 | | <u>2870</u> | <u>2700</u> | <u>2700</u> | 1 | | <u>2700</u> |
| Total ... | | | | <u>12909</u> | | | | | <u>12219</u> |

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{690}{18} (.75 - .3196) = +16$$

If limited on account of midship superstructure.

If limited to maximum allowance of 1½ ins. per 100 ft. ✓

 Deduction for Tropical Freeboard.
 Addition for Winter and Winter North Atlantic Freeboard.

| | | |
|-------------------------|---|---------------|
| Depth to Freeboard Deck | = | <u>12.249</u> |
| Summer freeboard | = | <u>3.564</u> |
| Moulded draught (d) | = | <u>8.685</u> |

 Deduction for Tropical freeboard and addition for
 Winter freeboard = $\frac{d}{48}$ ins. = 181.6
 Addition for Winter North Atlantic Freeboard (if required) = ✓

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$$\Delta = 18000$$

Tons per inch immersion at summer load water line

$$T = 23.6$$

$$\text{Deduction} = \frac{\Delta}{40 T} \text{ inches} =$$

$$= 191 \text{ m.}$$

TABULAR FREEBOARD corrected for Flush Deck (if required)

$$\text{Correction for coefficient} = \frac{.75 + .68}{1.36} = \frac{1.43}{1.36}$$

| | + | - |
|--|-------------|------------|
| Depth Correction | <u>692</u> | <u>562</u> |
| Deduction for superstructures | <u>-</u> | <u>533</u> |
| Sheer correction | <u>16</u> | <u>-</u> |
| Round of Beam correction | <u>22</u> | <u>-</u> |
| Correction for Thickness of Deck amidships | <u>33</u> | <u>-</u> |
| Other corrections, scantlings, etc. | <u>1647</u> | <u>533</u> |
| Summer Freeboard = | <u>3</u> | <u>11</u> |

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

| | | |
|--|-------|------------|
| Tropical Fresh Water Line above Centre of Disc | ... | <u>372</u> |
| Fresh Water Line | " | <u>191</u> |
| Tropical Line | " | <u>181</u> |
| Winter Line | below | <u>181</u> |
| Winter North Atlantic Line | " | <u>✓</u> |

| | | |
|--------------------------------|-----|--------------|
| Tropical Fresh Water Freeboard | ... | <u>31.92</u> |
| Fresh Water | " | <u>33.73</u> |
| Tropical | " | <u>33.8</u> |
| Winter | " | <u>37.4</u> |
| Winter North Atlantic | " | <u>✓</u> |

2 AUG 1935

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

| HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS | | | | | | | | | |
|---|----------------------|-------------------------------|--------------------|-------------------|--------------------|--------------------|----------------------|-------------------------------|--|
| Description of Hatchway | On Fore. No. 1. | With. Fore. No. 1. | Fore. well. No. 2. | Fore. deck No. 3. | Bridge deck No. 4. | Upper deck. No. 5. | On Fore. To store | Swimming pool on bridge deck. | |
| Dimensions of Hatchway | 6475 x 4900 | 6475 x 4900 | 10080 x 6100 | 7560 x 5200 | 11760 x 6100 | 7560 x 610 | 760 x 760 | 7560 x 4500 | |
| COAMINGS | Height above Deck | 900 | 300 | 900 | 900 | 900 | 460 | 5" ab. steel/dk. | |
| | Thickness | 12 | 13 | 12 1/2 | 11 1/2 | 12 1/2 | 9 1/2 | 9 | |
| | Sides | 11 | 13 | 12 | 11 | 11 | 9 1/2 | 9 | |
| | Stiffeners | 180 x 75 x 8 | ✓ | 180 x 75 x 8 | 180 x 75 x 8 | 180 x 75 x 10 | ✓ | ✓ | |
| HATCH BEAMS | Brackets, Stays | 2 off. | ✓ | 3 off. | 2 off. | 4 off. | ✓ | ✓ | |
| | Number | 4 | 4 | 6 | 4 | 4 | 4 | 4 | |
| | Spacing | 1295 | 1295 | 1440 | 1512 | 1470 | 1512 | 1512 | |
| | Scantling and Sketch | Top angles:- 90 x 75 x 10 1/2 | 90 x 75 x 10 1/2 | 100 x 75 x 11 | 100 x 75 x 8 1/2 | 100 x 75 x 11 | ✓ | 75 x 75 x 10 1/2 | |
| FORE AND AFTERS | Webpl.:- | 390 x 8 1/2 | 355 x 8 1/2 | 450 x 9 | 330 x 8 | 330 x 8 1/2 | ✓ | 280 x 8 | |
| | Bottom angles:- | 90 x 75 x 10 1/2 | 90 x 75 x 8 1/2 | 100 x 75 x 11 | 100 x 75 x 8 1/2 | 100 x 75 x 11 | ✓ | 75 x 75 x 10 1/2 | |
| | Bearing Surface | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| | Number | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| HATCH COVERS | Spacing | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | Unsupported Lengths | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | Scantling and Sketch | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | Bearing Surface | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| HATCH COVERS | Material | Wood. | Wood. | Wood. | Wood. | Wood. | Steel | Wood. | |
| | Thickness | 75 | 75 | 75 | 75 | 75 | 9 1/2 | 75 | |
| | How fitted | F. & A. | F. & A. | F. & A. | F. & A. | F. & A. | Hinged to close W.T. | F. & A. | |
| | Bearing Surface | 3 | 3 | 3 | 3 | 3 | with turubuckles. | None. | |
| Spacing of Cleats | 610 | 610 | 610 | 610 | 610 | 610 | | | |
| Number of Tarpaulins | 3 | 3 | 3 | 3 | 3 | 3 | | | |

*Are wood fore and afters steel shod at all bearing surfaces? *None fitted.*
 Are battens and wedges efficient and in good condition? *yes.*
 Are tarpaulins in good condition and in accordance with rule requirements? *yes.*
 Are lashings provided in accordance with rule requirements? *✓ Lashings for lashings provided*

Particulars of fiddle, funnel and ventilator coamings:-

No openings in fiddle top. Funnel and engine skylight of substantial construction.

Particulars of Flush Bunker Scuttles:-

None fitted.

Particulars of Companionways:-

Entrance to crew's quarter aft through deckhouse; plating 7/16", stiff 75 x 65 x 8 ap. 30" apart & lashing. boundary bars. Door opening 117 3/8", wood door capable of being manipulated from both sides.

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

Bridge deck
 4 off 535 Z diam, 915 x 10 Z coaming. *Upper deck aft*
 3 - 300 - , 915 x 8 1/2 - *2 off 450 Z diam, 915 x 10 Z coaming.*
 1 - 150 - , 760 x 7 1/2 - *1 - 230 - , 915 x 8 1/2 -*
1 - 230 - , 1470 x 8 1/2 -
1 - 230 - , 760 x 8 1/2 -

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

Opening of air pipes 36" above steel deck
Air pipes are fitted with a hinged metal flap with a clip to keep it closed.
(The flap opens for a slight pressure from inside).

Particulars of Gangway Cargo and Coaling Ports:-

Hinged steel door swinging outboard.
Dogs to close with eight dogs manipulated from inside only.

Ash discharge from galley (within bridge space) between fr. 99-100
Opening to close with steel cover & turubuckles (2 at each end, outboard each side).
18" x 21"
Upper deck

Particulars of Scuppers and Sanitary Discharge Pipes -

No scuppers through ship's sides below freeboard deck.
Sanitary disch. pipes from after deck house through ship's sides above 2nd deck & fitted with Non-Rel. Valve of metal other than Cast Iron.
Sanitary discharge pipes from accommodation amidships, see sketch page 4.

Particulars of Side Scuttles:-

Sidelights in ship's sides of substantial construction & fitted with efficient, peruu. attached, hinged dead light.

RETAIN

Particulars of Guard Rails:-

165 x 75 Railbar
150 x 75 x 10 1/2
sp. 3 ft. apart
Fore well
After deck

1150
230
Fore.

1150
230
Bridge deck

1150
230
Fore. deck

Particulars of Gangways, Lifelines, etc.:-

None fitted.

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 | 31445 | X | 1000 x 230 | 9 | 19.67 m ² | 19.20 m ² |
| Forward Well | 19605 | 1150 | 1000 x 230 | 7 | 153 dm ² | 120.15 dm ² |

State position of each freeing port ... After Well: ✓
 (F. and A. position and height above deck edge) Forward Well: ✓
 State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such: -
 Additional area where sheer is less than standard.

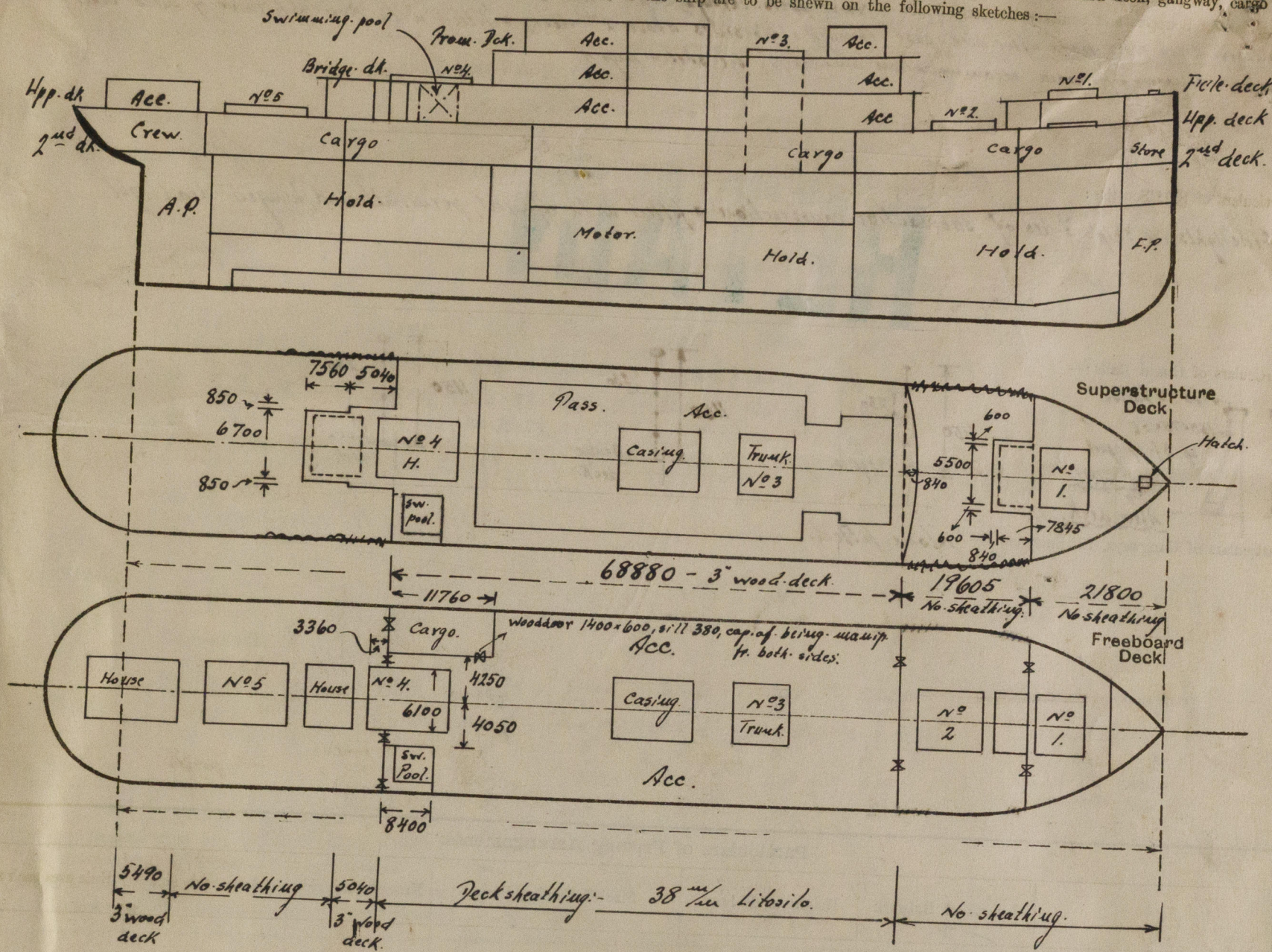
Particulars of Superstructures, Trunks, Casings, Deckhouses.

| | 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 | 8 | 8 | 130 x 65 x 9 | 600 ~ 740 | Takes bound. bars | 1725 x 1240 | 380 | 2510 |
| Bridge, Forward Bulkhead | 1300 x 12 1/2 | 11 | 230 x 90 x 13 | 515 ~ 760 | Lugs top & bott. | 1670 x 860 | 380 | 2510 |
| Forecastle Bulkhead | 8 | 8 | 130 x 65 x 9 | 685 | Takes bound. bars | 1440 x 925 | 460 | 2060 |
| Trunk, Aft | ✓ | | | | | | | |
| Trunk, Forward | ✓ | | | | | | | |
| 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 | ✓ | | | | | | | |
| Deckhouses on Flush Deck Ships | ✓ | | | | | | | |

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

| | |
|---|---|
| Poop Bulkhead | ✓ |
| Raised Quarter Deck Bulkhead | ✓ (Port. Hinged wood door. (Sketch see sketch page 4). Manip. from outside only. |
| Bridge, After Bulkhead | ✓ (R.A.S. Hinged hardwood door capable of being manipulated from both sides. Manip. from outside only. |
| Bridge, Forward Bulkhead | ✓ (St. Wood boards for full height in riveted channels. Manip. from outside only. |
| Forecastle Bulkhead | ✓ (Hinged steel door in two halves (divided vertically) to close W.T. with six turubuckles. Manip. from both sides. |
| Exposed Machinery Casings on Freeboard or Raised Quarter Decks | ✓ (Wood boards for full height in riveted channels. Manip. from outside only. |
| Exposed Machinery Casings on Superstructure Decks | ✓ |
| Machinery Casings within Superstructures not fitted with Class I Closing Appliances | ✓ |
| Deckhouses on Flush Deck Ships | ✓ |

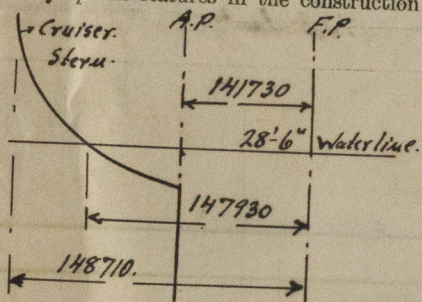
Superstructure bulkheads, trunks, deckhouses, casings, cargo and coaling hatchways, extent and thickness of sheathing on the freeboard deck, gangway, cargo and coaling ports, and any other openings, etc., which would affect the seaworthiness of the ship are to be shown on the following sketches:-



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

The vessel is classed "with freeboard".
The vessel holds a Passenger Certificate.

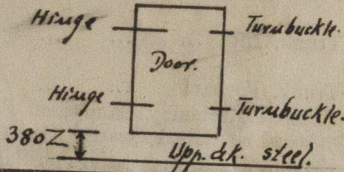
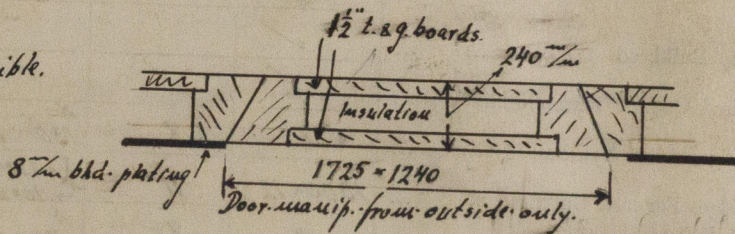
Vessel has a cruiser stern.



Sketch of Sanitary Discharge from Accommodation amidships. Two discharges (p.s.) and arranged within motor room, i.e. pipe and valves always accessible.

Material:- Gun Metal.

Sketch of door to cargo space at afterend of bridge space (p.s.)



Builder's name and yard number

A/S Nakslov Skibsværft.

Yard No. 62.

Names of sister ships

Owners

A/S Det Østasiatiske Kompagni, Copenhagen.

To be charged with First Entry Fee.

Received by me.



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