

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

NOV 1931

Computation of Freeboard for Steamer, ~~Sailing Ship, Tanker~~  
having Boop - Bridge - Forecastle  
(Type of Superstructures.)

Port of Survey Honnelsvik pr. Trondheim  
Date of Survey 10th Nov. 1931  
Name of Surveyor Reide  
Particulars of Classification +100A1

Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build
S.S. "SØBORG"	Danish <u>Copenhagen</u>	<u>171315</u>	<u>1993</u> <u>1992</u>	<u>1924</u>

Moulded-Dimensions: Length 280.0 Breadth 40.0 Depth 21.33  
Moulded displacement at moulded draught = 85 per cent. of moulded depth 4565 tons  
Coefficient of fineness for use with Tables .790 (from  $\Delta$  scale)

<b>Depth for Freeboard (D)</b> Moulded depth ... .. <u>21.33</u> Stringer plate ... .. <u>.04</u> Sheathing on exposed deck $T \left( \frac{L-S}{L} \right) =$ <u>-</u> Depth for Freeboard (D) = <u>21.37</u>	<b>Depth correction</b> (a) Where D is greater than Table depth (D - Table depth) R = <u>(21.37 - 18.67) 2.54 = +5.82</u> (b) Where D is less than Table depth (if allowed) (Table depth - D) R = <u>-</u> If restricted by superstructures	<b>Round of Beam correction</b> Moulded Breadth (B) <u>39.83</u> <u>40.0</u> Standard Round of Beam = $\frac{B \times 12}{50} =$ <u>9.56</u> Ship's Round of Beam = <u>10.0</u> Difference <u>.44</u> Restricted to Correction = $\frac{\text{Diff}}{4} \times \left( 1 - \frac{S_1}{L} \right) =$ <u>.11 \times .532 = -.06</u>
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### DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)	
Poop enclosed ... ..	<u>21.67</u>	<u>21.67</u>	<u>7'-4"</u>	<u>-</u>	<u>21.67</u>	Standard Height of Superstructure <u>6'-30"</u>
" overhang ... ..	<u>.83</u>	<u>.41</u>			<u>.41</u>	" " R.Q.D. <u>-</u>
R.Q.D. enclosed ... ..						Deduction for complete superstructure <u>34.0</u>
" overhang ... ..						Percentage covered $\frac{S}{L} =$ <u>47.32</u>
Bridge enclosed ... ..	<u>80.00</u>	<u>80.00</u>	<u>7'-0"</u>	<u>-</u>	<u>80.00</u>	" " $\frac{S_1}{L} =$ <u>46.77</u>
" overhang aft ... ..	<u>.50</u>	<u>.37</u>			<u>.37</u>	" " $\frac{E}{L} =$ <u>46.77</u>
" overhang forward ... ..	<u>2.00</u>	<u>1.00</u>			<u>1.00</u>	Percentage from Table, Line A.
Fore enclosed ... ..	<u>25.50</u>	<u>27.50</u>	<u>7'-0"</u>		<u>27.50</u>	(corrected for absence of forecastle (if required))
" overhang ... ..	<u>2.00</u>					Percentage from Table, Line B.
Trunk aft ... ..						(corrected for absence of forecastle (if required))
" forward ... ..						Interpolation for bridge less than 2L (if required)
Tonnage opening aft ... ..						Deduction = <u>34 \times .3325 = - 11.30</u>
" " forward						
Total ... ..	<u>132.50</u>	<u>130.95</u>			<u>130.95</u>	

### SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P. ... ..	<u>38.0</u>	<u>1</u>		<u>38.00</u>	<u>45.00</u>	<u>45.0</u>	<u>1</u>		<u>45.00</u>	Mean actual sheer aft = <u>Excess</u>
$\frac{1}{4}$ L from A.P. ... ..	<u>16.91</u>	<u>4</u>		<u>67.64</u>	<u>19.53</u>	<u>19.53</u>	<u>4</u>		<u>78.12</u>	Mean actual sheer forward = <u>Excess</u>
$\frac{1}{2}$ L " ... ..	<u>4.18</u>	<u>2</u>		<u>8.36</u>	<u>4.88</u>	<u>4.88</u>	<u>2</u>		<u>9.76</u>	Length of enclosed superstructure forward of amidships = <u>.145</u>
Amidships ... ..	<u>-</u>	<u>4</u>		<u>-</u>	<u>-</u>	<u>-</u>	<u>4</u>		<u>-</u>	" " aft of " = <u>.14</u>
$\frac{3}{4}$ L from F.P. ... ..	<u>8.36</u>	<u>2</u>		<u>16.72</u>	<u>9.12</u>	<u>9.12</u>	<u>2</u>		<u>18.24</u>	
$\frac{1}{4}$ L " ... ..	<u>33.82</u>	<u>4</u>		<u>135.28</u>	<u>36.49</u>	<u>36.49</u>	<u>4</u>		<u>145.96</u>	
F.P. ... ..	<u>76.0</u>	<u>1</u>		<u>76.00</u>	<u>84.00</u>	<u>84.0</u>	<u>1</u>		<u>84.00</u>	
Total ... ..				<u>342.00</u>					<u>381.08</u>	

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{39.08}{18} \left( .75 - .2366 \right) = -1.12$   
If limited on account of midship superstructure. -  
If limited to maximum allowance of  $1\frac{1}{2}$  ins. per 100 ft. -

<b>Deduction for Tropical Freeboard.</b> <b>Addition for Winter and Winter North Atlantic Freeboard.</b> Depth to Freeboard Deck = <u>21.37</u> Summer freeboard = <u>2.93</u> Moulded draught (d) = <u>18.44</u> Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <u>4.61</u> Addition for Winter North Atlantic Freeboard (if required) = <u>2</u>	<b>Deduction for Fresh Water.</b> Displacement in salt water at summer load water line $\Delta =$ <u>4675 tons</u> Tons per inch immersion at summer load water line $T =$ <u>23.3</u> Deduction = $\frac{\Delta}{40T}$ inches = <u>5.02</u>	<b>TABULAR FREEBOARD</b> corrected for Flush Deck (if required) Correction for coefficient <u>.794</u> <u>.68</u> <u>.147</u> <u>.136</u> <u>.136</u> Depth Correction ... .. <u>5.82</u> Deduction for superstructures ... .. <u>11.30</u> Sheer correction ... .. <u>1.12</u> Round of Beam correction ... .. <u>.06</u> Correction for Thickness of Deck amidships ... .. <u>-</u> Other corrections, scantlings, etc. ... .. <u>-</u> Summer Freeboard = <u>35.17</u>	<u>38.70</u> <u>41.83</u>
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**SUMMER FREEBOARD** amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck:— 35.17 = .893 m

Tropical Fresh Water Line above Centre of Disc	<u>9.63</u> <u>244</u> <u>mm</u>	Tropical Fresh Water Freeboard ...	<u>25.54</u> <u>649</u> <u>mm</u>
Fresh Water Line " "	<u>5.02</u> <u>127</u> <u>mm</u>	Fresh Water " "	<u>30.15</u> <u>766</u> <u>mm</u>
Tropical Line " "	<u>4.61</u> <u>117</u> <u>mm</u>	Tropical " "	<u>30.56</u> <u>776</u> <u>mm</u>
Winter Line below " "	<u>4.61</u> <u>117</u> <u>mm</u>	Winter " "	<u>39.78</u> <u>1010</u> <u>mm</u>
Winter North Atlantic Line " "	<u>6.61</u> <u>168</u> <u>mm</u>	Winter North Atlantic " "	<u>41.78</u> <u>1061</u> <u>mm</u>

# PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS							
Description of Hatchway		N <sup>o</sup> 1 on Upper Dk.	N <sup>o</sup> 2 on Upper Dk.	N <sup>o</sup> 3 on Bridge Dk.	N <sup>o</sup> 4 on Upper Dk.	N <sup>o</sup> 5 on Upper Dk.	N <sup>o</sup> 6 on Upper Dk.
Dimensions of Hatchway		22'-0" x 15'-0"	26'-0" x 15'-0"	15'-10" x 15'-0"	26'-0" x 15'-0"	24'-0" x 15'-0"	24'-0" x 15'-0"
COAMINGS	Height above Deck	36"	36"	36"	36"	36"	36"
	Thickness	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
	Stiffeners	7 x 3 x 1/2" on both sides & after end	7 x 3 x 1/2" on both sides & fore & aft coaming	7 x 3 x 1/2" on both sides & ends	7 x 3 x 1/2" on both sides & aft end coaming	7 x 3 x 1/2" on both sides & fore & aft coaming	7 x 3 x 1/2" on both sides & fore & aft coaming
	Brackets, Stays	on sides 7 x 4 x 1/2"	on sides 7 x 4 x 1/2"	no stays	on sides 7 x 3 x 1/2"	on sides 7 x 3 x 1/2"	on sides 7 x 3 x 1/2"
HATCH BEAMS	Number	3	3	3	3	3	3
	Spacing	5'-4" end, 5'-7" middle	5'-1/2", 5'-2", 4'-11", 4'-11"	5'-1/2", 5'-7", 5'-0"	5'-3"	5'-2-7"	5'-2-7"
	Scantling and Sketch	7 x 11 x 1/2" in places	7 x 11 x 1/2" in places	7 x 11 x 1/2" in places	7 x 11 x 1/2" in places	7 x 11 x 1/2" in places	7 x 11 x 1/2" in places
	Bearing Surface	3"	3"	3"	3"	3"	3"
FORE AND AFTERS	Number	3	3	3	3	3	3
	Spacing	5'-4" end, 5'-7" middle	5'-1/2", 5'-2", 4'-11", 4'-11"	5'-1/2", 5'-7", 5'-0"	5'-3"	5'-2-7"	5'-2-7"
	Unsupporting Lengths	on sides 7 x 4 x 1/2"	on sides 7 x 4 x 1/2"	on sides 7 x 4 x 1/2"	on sides 7 x 4 x 1/2"	on sides 7 x 4 x 1/2"	on sides 7 x 4 x 1/2"
	Bearing Surface	3"	3"	3"	3"	3"	3"
HATCH COVERS	Material	Pine	Pine	Pine	Pine	Pine	Pine
	Thickness	3"	3"	3"	3"	3"	3"
	How fitted	Longitudinally	Longitudinally	Longitudinally	Longitudinally	Longitudinally	Longitudinally
	Bearing Surface	3" x 2 1/2" at ends	3" x 2 1/2" at ends	3" x 2 1/2" at ends	3" x 2 1/2" at ends	3" x 2 1/2" at ends	3" x 2 1/2" at ends
Spacing of Cleats		22" x 24" on fore and aft	22" x 24" on sides	22" x 23"	22" x 23"	22" x 23"	22" x 23"
Number of Tarpaulins		3	3	3	3	3	3

\*Are wood fore and afters steel shod at all bearing surfaces? Yes

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? Yes

According to present Rules, Yes

Looking back over the last 10 years, Yes

\*Are wood fore and afters steel shod at all bearing surfaces? Yes (No battens for N<sup>o</sup> 3 hatch, manila lashings provided)  
 Are battens and wedges efficient and in good condition? Yes  
 Are tarpaulins in good condition and in accordance with rule requirements? According to present Rules, Yes. 3 eye pl. on side coamings stiff.  
 Are lashings provided in accordance with rule requirements? Lashings both provided on N<sup>o</sup> 1 hatchway.

Particulars of fiddle, funnel and ventilator coamings:— Fiddle, at fore end of casing top, 6'-6" x 3'-6", coaming 3" x 3" x 40" angle; hinged covers, 20" steel. Funnel coaming 34" high (outside collar).  
 Two stokehold ventilators at fore end of casing top, 20" dia., coaming 6'-6" x 19".  
 Two ventilators to top of boiler space, 17 1/2" dia., coaming 23" x 20, wooden spigot covers, 2, canvas coats.  
 Inque room ventilators, 2 each end, 14 1/2" dia., coaming 5'-3" x 20.

Particulars of Flush Bunker Scuttles:—

None.

Particulars of Companionways:—

None.

Particulars of Ventilators in exposed positions on freeboard and superstructure decks:— One ventilator at aft end of forecastle, for N<sup>o</sup> 1 hold, 18" dia., coaming 38" x 40", steel, 22 rivets in deck angle flange; 2" wood spigot covers, 2 canvas coats. Two vents on bridge dk., at aft end of saloon house, 16" dia., 9'-6" x 40" steel, 20 rivets in deck flange. 2" wood spigot, 2 canvas coats. Two vents at fore end of casing, to fore hold, coaming 25" high x 32" galv. iron, 4 rivets in flange, 1 1/2" wood spigot cover, 1 canvas coat. One vent. to after hold, at fore end of N<sup>o</sup> 4 hatch, 18" dia., coaming 35" x 40", 22 rivets, 2" wood spigot cover, 2 canvas coats.

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks:— Fore: one to fore peak, 23" from stem on E. 1/2" thick, iron 6" from dk. to opening, closed by wood plug. For N<sup>o</sup> 1 tank, air pipe 7'-1" from after end of fore, gooseneck, 3/8" galv. iron 9'-3/4" to opening; open. — On Fore deck: Air pipe to N<sup>o</sup> 2 tank 5'-6" abaft N<sup>o</sup> 2 freeing port, close to bulwark 7/8" galv. iron, gooseneck 3'-10 1/4" from deck to opening, open. — On Bridge deck: Air pipe for N<sup>o</sup> 3 & 4 tanks x 34'-9" 36'-9" 55'-0" x 76'-7" abaft fore end of bridge dk. resp. — 3/8", 3/8", 3/8" x 7/16" resp. galv. iron. 6'-6" x 6" x 11" above dk. to opening. gooseneck. — On after deck: Two air pipes, 14" x 37" forward of N<sup>o</sup> 3 freeing port, close to bulwark 7/8" galv. iron, 3'-9" to opening. gooseneck. — On poop: Two, for after peak tank 36" forward of house, 1/2" thick galv. iron, 7' to opening, gooseneck.

Particulars of Gangway Cargo and Coaling Ports:—

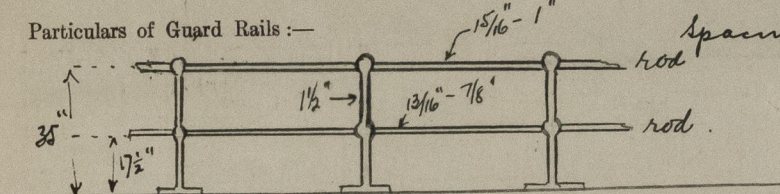
None.

Particulars of Scuppers and Sanitary Discharge Pipes — Scuppers in fore well: — 5" x 3" opening cut in sheer str. plate, 2 off each side, 11", 20'-1" x 43'-5" forward of bridge front bulkhead. In after well: — 5" x 3" opening cut in sheer str. pl., 3 each side, 11", 22'-0" x 43'-7" abaft bridge aft end bulkhead. Sanitary discharges: Amidships 9'-9" abaft bridge front bulkhead, above upper deck, & one 4'-7" forward of bridge aft end, above upper deck. Both in-accessible owing to coal in tween deck; storm valves were stated to be fitted. In poop from crews W.C. above upper deck, no storm valve, galv. iron ab. 8' from poop bulkhead.

Particulars of Side Scuttles: Poopsides & front 8 1/2", permanently attached deadlight on sides only, not on front.

In forecastle store room 1 side light, with permanently attached deadlight. These are the only side lights in the superstructures. In the bridge front bulkhead there are 2 lights with perm. attached deadlight.

Particulars of Guard Rails:—



Particulars of Gangways, Lifelines, etc.:—

None. Satisfactory arrangements made for lifelines.

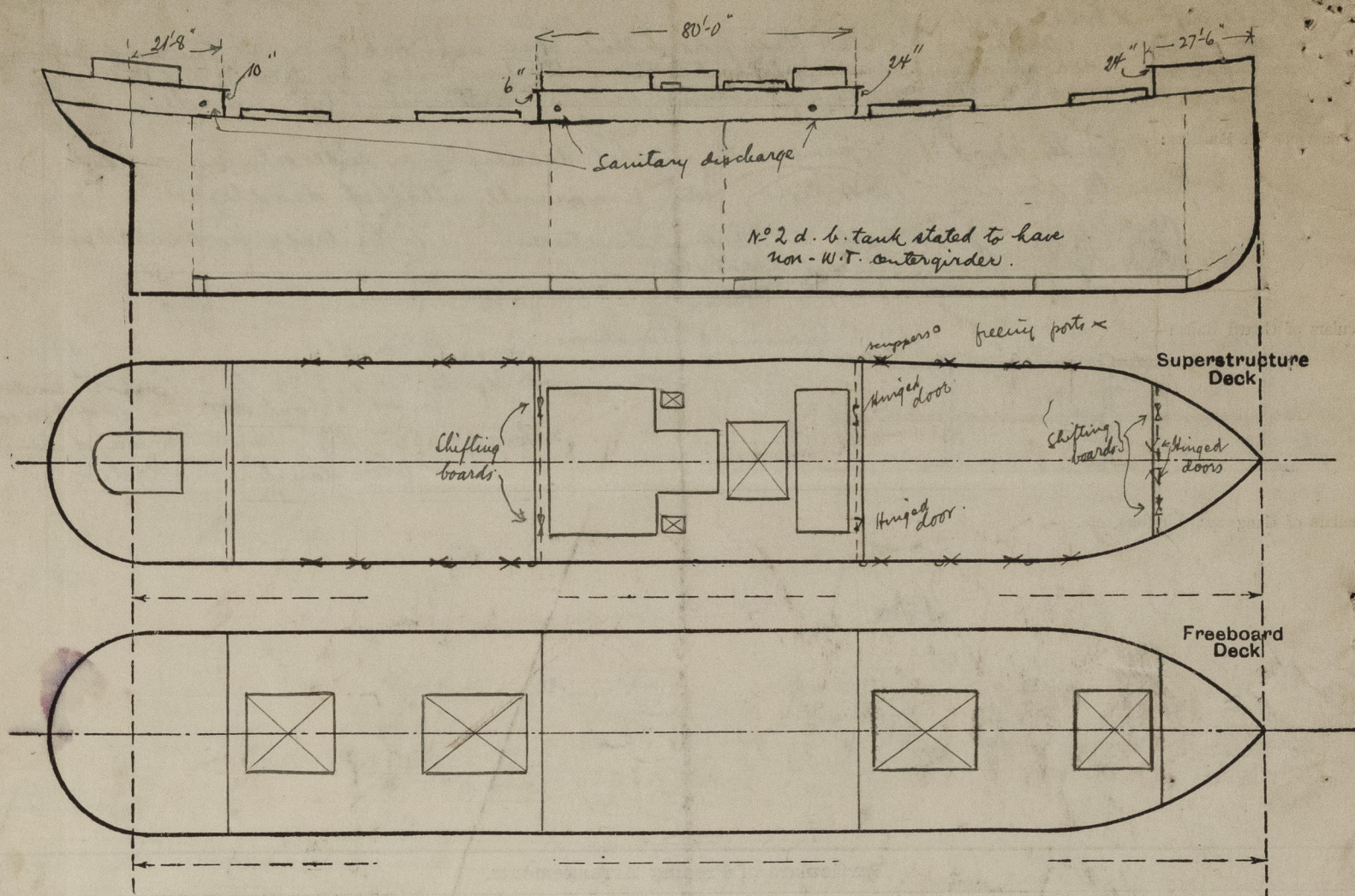
Particulars of Freeing Arrangements.						
	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
After Well	78'-11"	4'-6"	32" x 20 1/2" rounded corners	4 off	18.06 sq. ft.	15.78 sq. ft.
Forward Well	74'-1"	4'-6"	32" x 20 1/2"	4 off	18.06 sq. ft.	14.82 sq. ft.

State position of each freeing port ... After Well: — 6'-8", 23'-9 1/2", 40'-6 1/2" x 56'-5" from bridge after bulkhead. (F. and A. position and height above deck edge) Forward Well: — 24'-4", 35'-2 1/2", 52'-1" x 68'-11" from fore bulkhead. State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such: — Two 1" bars, hinged flap .22" 12" above dk. edge. 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	20 1/2" x 37"	3/4"	5 1/2" x 3" x 40 BA	2'-9" x 3'-6"	keys 1/2" bottom	✓	✓	7'-4"
Raised Quarter Deck Bulkhead	✓	25"	3 x 2 1/2" x 25"	2'-3"	None.	4'-10" x 3"	21"	7'-0"
Bridge, After Bulkhead	Not accessible	Two decks full of coal	✓	30"	cup, 4 riv.	58" x 23 1/2" x 22"	21"	✓
Bridge, Forward Bulkhead	40"	36"	7 1/2" x 3" x 38 BA	30"	✓	4'-3" x 2'-8"	21"	✓
Forecastle Bulkhead	28"	28"	3" x 3" x 26"	22" x 30"	✓	4'-11 1/4" x 3'-0"	19 1/2"	✓
Trunk, Aft	✓							
Trunk, Forward	✓							
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	✓							
Exposed Machinery Casings on Superstructure Decks	17' x 38"	30" x 32"	3 x 3 x 32"	23" x 26" x 31"	✓	4'-9" x 22"	17"	7'-2"
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	17' x 40"	25" ✓	3 x 3 x 30"	24"	None	None	✓	7'-0"
Deckhouses on Flush Deck Ships	✓							

Particulars of Closing Appliances (state if capable of being manipulated from both sides).	
Poop Bulkhead	✓ No opening
Raised Quarter Deck Bulkhead	✓
Bridge, After Bulkhead	2 1/2" shifting boards in 3 1/2" x 2" bar, manipulated from both sides. and one hinged door attached to door
Bridge, Forward Bulkhead	Port side: Hinged door 7/8" hook bolt @ 11" with nut. Stbd side: Hinged door 7/8" hook bolt @ 9 1/2"
Forecastle Bulkhead	2 1/2" shifting boards in 3 1/2" x 2" bar, manipulated from both sides. 2 hinged steel doors
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	Hinged steel doors, opening both sides. Hard wood doors in deck houses.
Deckhouses on Flush Deck Ships	✓ No opening

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:— Bulwark stanchions were in most cases not attached to the deck in way of the beams.

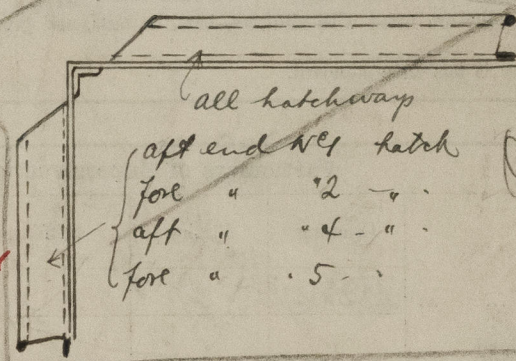
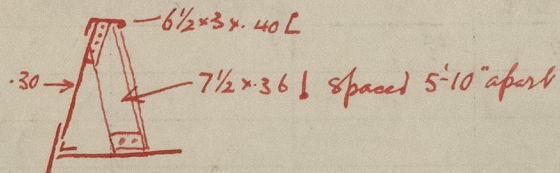
Hatch side stiffeners stop 3" short of hatch ends, as shown

Timber Deck Cargoes:

No permanent fittings are provided for securing lashings or uprights. Eye plates provided as required by the Classification.

The steering gear is housed on the poop & operated by telemotor control. Hand steering gear is housed in the same house as the steam gear.

Double bottom tanks Nos 3, 4 & 5 have W.T. division on the centre line (30% of length of vessel).



Builder's name and yard number W. Gray & Co. (Ld.) No 956.

Names of sister ships

Owners M/S S/S Dannebrog (C. K. Hansen) Copenhagen

Fee £

Received by me



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Lloyd's Register Foundation

*As assigned  
by Danish  
Authorities*

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

Tropical Fresh Water Line above Centre of Disc ...	20.4	8"	Tropical Fresh Water Freeboard ...	2'-11 3/4"	909
Fresh Water Line " " ...	12.7	5"	Fresh Water " " ...	2'-3 3/4"	705
Tropical Line " " ...	7.7	3"	Tropical " " ...	2'-6 3/4"	782
Winter Line below " " ...	7.6	3"	Winter " " ...	2'-8 3/4"	832
Winter North Atlantic Line " " ...	12.7	5"	Winter North Atlantic " " ...	3'-2 3/4"	985
				3'-4 3/4"	1036

1m,6,32.

MARKING FORM

RECEIVED 26/7/40

Marking form  
received 14/6/33

008061-008064-0114 3/3