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8 APR 1932

Rpt. C.11.

Index. No. 33426
(For London Office only.)

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

No 100122

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having SHELTER DECK (WITH TONNAGE OPENING) & RAISED FORECASTLE.

Port of Survey LIVER POOL.

(Type of Superstructures.)

Ship's Name

Nationality and Port of Registry

Official Number

Gross Tonnage

Date of Build

"KANA" OND OAK

BRITISH

LIVER POOL.

161120

2787
27431929-
11 MTHS.Date of Survey 2nd APRIL '32 AND
SUBSEQUENTLY

Name of Surveyor R. In. Scott

Moulded Dimensions: Length 332 FT. Breadth 47.2 FT. Depth 22.3" TO UPP. DECK. ✓
 Moulded displacement at moulded draught = 85 per cent. of moulded depth 6300 ✓ tons
 Coefficient of fineness for use with Tables .747 ✓

Particulars of Classification 100 A.1.
SHELTER DECK WITH
FREEBOARD.

Depth for Freeboard (D)

Moulded depth ... 22.3"

Stringer plate ... 40"

Sheathing on exposed deck

$$T \left(\frac{L-S}{L} \right) =$$

Depth for Freeboard (D) = 22.28 ✓

Depth correction

(a) Where D is greater than Table depth

(D-Table depth) R =

$$(22.28 - 22.13) 2.554 = +.38$$

(b) Where D is less than Table depth (if allowed) ✓

(Table depth-D) R =

If restricted by superstructures ✓

Round of Beam correction

Moulded Breadth (B) 47 FT.

Standard Round of Beam = $\frac{B \times 12}{50} = 11.28$

Ship's Round of Beam = 6" (AT UPP. DECK.)

Difference 5.28 ✓

Restricted to

$$\text{Correction} = \frac{\text{Diff}}{4} \times (1 - \frac{S_1}{L}) = \frac{5.28}{4} \times (1 - .994) = +.01$$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poep enclosed ...	26.7'	26.70	AFT TONN. BND 10'-7"	✓	26.70
" overhang ...			A.P. 11'-9"		
" enclosed ...					
" overhang ...					
LE AND Bridge enclosed...	301.3'	301.30	F.P. 15'-9"	✓	301.30
" overhang aft ...			7'-11"		
" overhang forward ...			FORP. TONN. BND 10'-6"		
" enclosed in SHELTER DECK	29.0'		7'-6"		
" overhang ...					
" forward ...					
Tonnage opening aft ...	4.0'	2.00	10'-6 1/2" MEAN.	✓	2.00
" forward ...					
Total ...	332.00	330.00			330.00

Standard Height of Superstructure 6.82 ✓

" " R.Q.D. ✓

Deduction for complete superstructure 37.47 ✓

Percentage covered $\frac{S}{L} = 100\%$ ✓" $\frac{S_1}{L} = 99.4\%$ ✓" $\frac{E}{L} = 99.4\%$ ✓Percentage from Table, Line A.
(corrected for absence of forecastle (if required)) 99.26% ✓Percentage from Table, Line B.
(corrected for absence of forecastle (if required)) ✓

Interpolation for bridge less than 2L (if required) ✓

Deduction = 37.47 x .9926 = - 37.19 ✓

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	43.20	1		43.20	45.5	51.50	65.18	1	65.18
1/4 L from A.P. ...	19.22	4		76.88	19.0	22.92	29.00	4	116.00
1/2 L " ...	4.75	2		9.50	5.75	5.66	7.17	2	14.34
Amidships ...	✓	4		✓	✓	✓	✓	4	✓
3/4 L from F.P. ...	9.50	2		19.00	9.5	10.95	12.45	2	24.90
1/4 L " ...	38.45	4		153.80	40.0	44.28	50.36	4	201.44
F.P. ...	86.40	1		86.40	92.5	99.50	113.18	1	113.18
Total ...				✓388.78					535.04

Mean actual sheer aft = Excess ✓
Mean standard sheer aftMean actual sheer forward = Excess ✓
Mean standard sheer forward

Length of enclosed superstructure forward of amidships = } C.S.S.

" " aft of " = }

Actual Tween Deck Hgt = 7.96
 Standard " = 6.82
 Difference = 1.14
 = 13.68

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{146.26}{18} \times (.75 - .50) = - 2.03 \checkmark$$

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 = 22.28 ✓

Summer freeboard = 1.27 ✓

Moulded draught (d) = 21.01 ✓

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = 5.25 ✓

Addition for Winter North Atlantic Freeboard (if required) =

Deduction for Fresh Water.

Displacement in salt water at summer load water line

Δ = 7096 ✓

Tons per inch immersion at summer load water line

T = 30.82 ✓

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

= 5.76 ✓

= 5 3/4 ✓

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{.747 + .68}{1.36} = 1.427$

+ -

Depth Correction38 ✓

Deduction for superstructures ... 37.19 ✓

Sheer correction ... 2.03 ✓

Round of Beam correction01 ✓

Correction for Thickness of Deck amidships ... ✓

Other corrections, scantlings, etc. ... ✓

.39 39.22 - 38.83

Summer Freeboard = 15.25

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

Tropical Fresh Water Line above Centre of Disc ... 11" ✓

Fresh Water Line ... 5 3/4" ✓

Tropical Line ... 5 1/4" ✓

Winter Line ... 5 1/4" ✓

Winter North Atlantic Line ... 5 1/4" ✓

Tropical Fresh Water Freeboard ... 0 - 4 1/4" ✓

Fresh Water ... 0 - 9 1/2" ✓

Tropical ... 10" ✓

Winter ... 8 1/2" ✓

Winter North Atlantic ... 8 1/2" ✓

Lloyd's Register
Foundation

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS										
FREEBOARD DECK					SHELTER DECK					
Description of Hatchway	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.
Dimensions of Hatchway	24' x 18'	28' x 18'	8' x 18'	20' x 18'	24' x 18'	22' x 18'	24' x 18'	8' x 18'	28' x 18'	24' x 18'
COAMINGS	Height above Deck	9' x 3" 44 B.A.	AS	AS	AS	30 1/2"	AS	30 1/2"	AS	AS
	Thickness	NIL	No. 1.	No. 1.	No. 1.	44"	AS	44"	AS	AS
	Stiffeners	NIL	No. 1.	No. 1.	No. 1.	7' x 3" B.A.	No. 1.	NIL	No. 1.	No. 1.
	Brackets, Stays	NIL	NIL	NIL	NIL	2 @ 2" DIA.	SHELTER DK.	NIL	SHELTER DK.	SHELTER DK.
HATCH BEAMS	Number	4	5	4	3	4	4	1	5	4
	Spacing	4'-9 1/2"	4'-8"	4'-0"	5'-0"	4'-9 1/2"	4'-5"	4'-0"	4'-8"	4'-9 1/2"
	Scantling and Sketch	WEB 20" x 38"	AS	WEB 15" x 38"	AS	WEB 18" x 38"	WEB 15" x 38"	WEB 12" x 32"	AS	AS
	Bearing Surface	TOP & BOTTOM ANGLES 4' x 3" x 44"	No. 1.	TOP & BOTTOM ANGLES 4' x 3" x 44"	No. 1.	TOP & BOTTOM ANGLES 4' x 3" x 44"	TOP & BOTTOM ANGLES 4' x 3" x 44"	TOP & BOTTOM ANGLES 4' x 3" x 44"	SHELTER DK.	SHELTER DK.
FORE AND AFTERS	Number									
	Spacing									
	Unsupported Lengths									
	Scantling and Sketch									
HATCH COVERS	Material	PINE	AS	AS	AS	PINE	AS No. 1	AS No. 1	AS No. 1	AS No. 1
	Thickness	3"	AS	AS	AS	3"	AS No. 1	AS No. 1	AS No. 1	AS No. 1
	How fitted	F&A	No. 1.	No. 1.	No. 1.	F&A	SHELTER DK.	SHELTER DK.	SHELTER DK.	SHELTER DK.
	Bearing Surface	3"	No. 1.	No. 1.	No. 1.	3"	SHELTER DK.	SHELTER DK.	SHELTER DK.	SHELTER DK.
Spacing of Cleats	21"	22"	18"	21"	21"	22 1/2"	23"	17"	23"	22"
Number of Tarpaulins	12	2	2	2	2	2	2	2	2	2

Particulars of fiddle, funnel and ventilator coamings :-

FIDDLE GRATINGS CLOSED WITH STEEL HINGED COVERS.

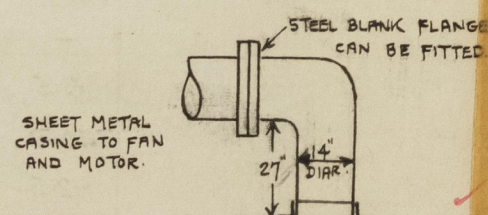
FIDDLE & FUNNEL VENTILATOR COAMINGS ARE IN EFFICIENT CONDITION.

ENGINE ROOM SKYLIGHT OF STEEL, STRONGLY CONSTRUCTED.

Particulars of Flush Bunker Scuttles :-

NONE.

Particulars of Companionways :-



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

1 VENT. ON FLE DK 9" DIAM. COAMG 17" HIGH x 32" LED TO F.P. STORE.	2 VENTS. ON SHELTER DK 18" DIAM. COAMG 36" HIGH x 40" LED TO HOLD.
2 " " " 12" " " 30" " x 34" " " HOLD.	2 " " " 18" " " 32" " x 40" " " " "
2 VENTS. SHELTER " 18" " " 36" " x 40" " " " HOLD.	2 " " " 12" " " 30" " x 34" " " " CREW.
2 " " " 15" " " 39" " x 36" " " " HOLD.	1 " " " 6" " " 33" " x 30" " " " " "
2 " " " 18" " " 39" " x 40" " " " HOLD.	1 " " " 18" " " 20" " x 40" " " " " TUNNEL ESCAPE.
2 " " " 22 1/2" " (ACTING AS DECK POSTS) " BUNKERS	5 S.N. VENTS ON SHELTER DK 27" TO LIP- 8" DIAM LED TO BUNKERS & REFRIG. HOUSE
2 " " " 12" " COAMG 11" x 34" " " DEEP TANK.	1 VENT. ON SHELTER DK 14" DIAM (SEE SKETCH ABOVE) LED TO HOLD.

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

2 AIR PIPES ON FLE DK 3 1/2" DIAM, 10 1/2" TO LIP, FROM F.P. TANK.	2 AIR PIPES ON SHELTER DK 2 1/2" DIAM, 18" TO LIP, FROM D.B. TANK.
1 " " " 2 1/2" " " 11" " " " D.B. TANK.	2 " " " 2 1/2" " " 18 1/2" " " " " "
4 " " " 3 1/2" " " 18" " " " " " "	2 " " " 3 1/2" " " 17" " " " " " "
4 " " " 3 1/2" " " 18" " " " " " "	2 " " " 3 1/2" " " 11" " " " " " AFT PERK TANK.
4 " " " 2 1/2" " " 18 1/2" " " " " " "	
2 " " " 2 1/2" " " 18 1/2" " " " " " "	

AIR PIPES PROVIDED WITH WOOD PLUGS FOR CLOSING.

Particulars of Gangway Cargo and Coaling Ports :-

NONE.

Particulars of Scuppers and Sanitary Discharge Pipes :-

SANITARY DISCHARGE PIPES ARE FITTED TO SHIP'S SIDE, WITH STORM VALVES.

SCUPPERS ON FREEBOARD DECK ARE LED THROUGH FBD DK 12" BELOW AND ARE FITTED WITH STORM VALVES.

SCUPPERS ON SHELTER DECK ARE OF "COLLISON TYPE".

Particulars of Side Scuttles :-

SIDE SCUTTLES TO CREW'S QUARTERS, BETWEEN FREEBOARD & SHELTER DECKS, ARE OF SUBSTANTIAL CONSTRUCTION, AND ARE FITTED WITH PORTABLE DEADLIGHTS.

Particulars of Guard Rails :-

GUARD RAILS ON FORECASTLE DECK, 3 1/4" HIGH, 3 RODS WITH STANCHIONS SPACED 5' 0" APART.

" " " SHELTER " 3' 6" " , 3 " " " " 4' 10" " .

Particulars of Gangways, Lifelines, etc. :-

NONE.

Particulars of Freeing Arrangements.

	Length of Bulwark	Height of Bulwark (TWEEN DECK)	Size of Freeing Ports	Number each side	Area each side	Rule area each side
TONNAGE						
Starboard Well	4'-0"	10'-6 1/2" MEAN	18" x 12"	1.	1.5 SQ. FT.	
Port Well						

State position of each freeing port (F and A. position and height above deck edge) { After Well :- } 6" ABOVE DECK.

State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such :- STEEL HINGED SHUTTERS.

Additional area where sheer is less than standard.

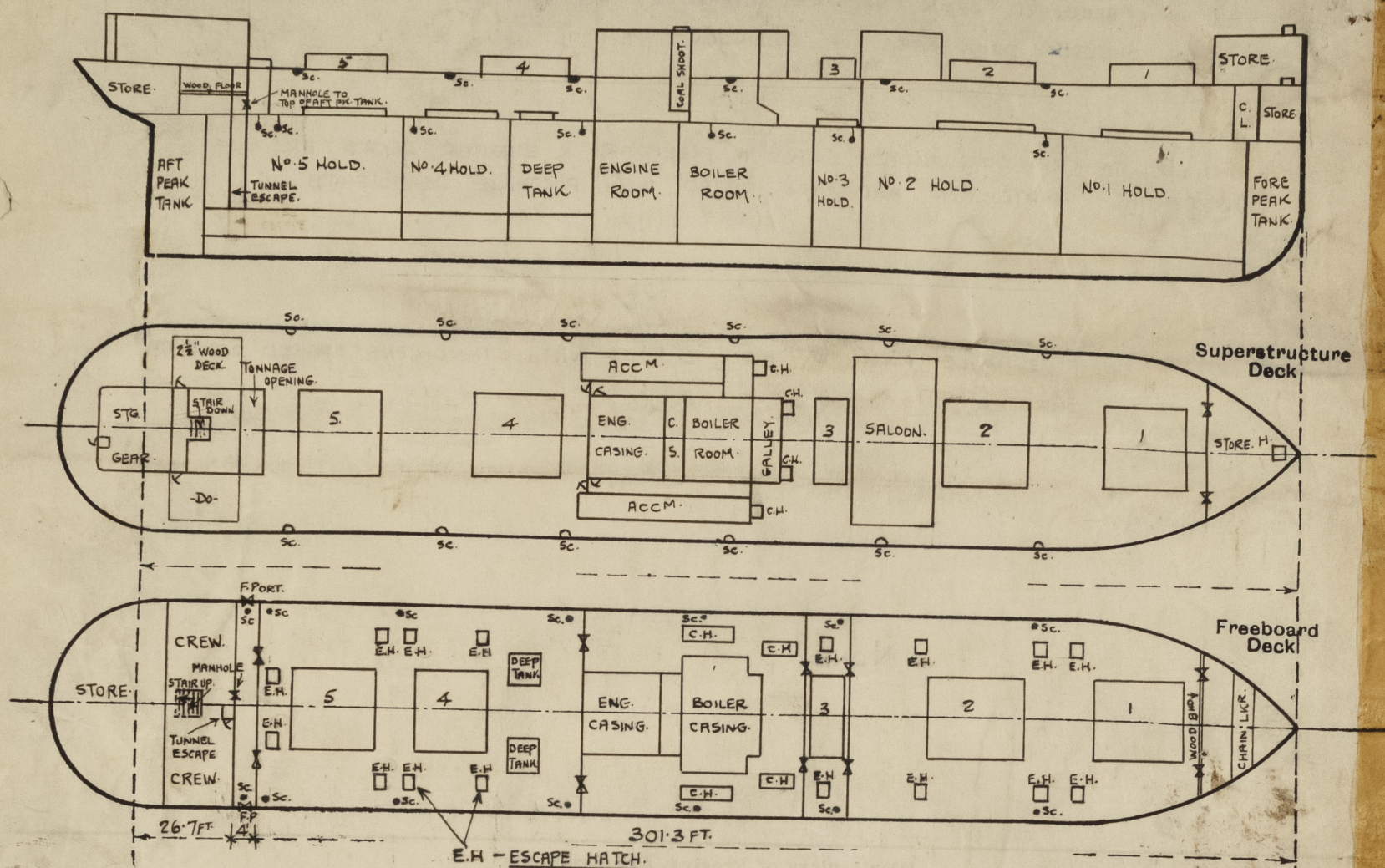
Particulars of Superstructures, Trunks, Casings, Deckhouses.

	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead	—	30"	4" x 3" x 30"	36"	NONE	NONE	NONE	10' 7"
Forward Bulkhead	—	30"	4" x 3" x 30"	36"	NONE	6' 6" x 3' 3"	18"	10' 6"
Bridge, After Bulkhead	—	—	—	—	—	—	—	—
Bridge, Forward Bulkhead	26"	26"	3" x 3" x 30"	24"	NONE	4' 9" x 3' 3"	18"	7' 6"
Forecastle Bulkhead	—	—	—	—	—	—	—	—
Trunk, Aft Tunnel Escape on FBDK	—	30"	—	—	—	5' 0" x 2' 0"	9" ABOVE FLOOR	7' 3" ABOVE FLOOR
Trunk, Forward	—	—	—	—	—	—	—	—
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	—	—	—	—	—	5' 3" x 2' 0"	17" & 14"	7' 6"
Exposed Machinery Casings on Superstructure Decks	435"	30"	3" x 3" x 35"	25" AT ENDS. 32" " SIDES	NONE BKT'S AT TOP	5' 2" x 2' 0"	15"	7' 6"
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	435"	435"	3" x 3" x 35"	30"	NONE	5' 2" x 2' 1"	12 1/2"	7' 1/2" AT 8' 3" CAS ENDS.
Deckhouses on Flush Deck Ships	30"	30"	3" x 3" x 30"	27"	BKT'S AT TOP	5' 0" x 2' 0"	18"	7' 3" ABOVE WOOD DECK.

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

Poop Bulkhead	MANHOLE WITH EFFICIENTLY BOLTED STEEL COVER, LEADING TO MANHOLE ON DECK TO AFT PERK TANK.
Forward Bulkhead	2 1/2" STORM BOARDS, THICK, FULL HEIGHT, IN RIVETTED CHANNELS.
Bridge, After Bulkhead	
Bridge, Forward Bulkhead	
Forecastle Bulkhead	STORM BOARDS 2 1/2" THICK, FULL HEIGHT, IN RIVETTED CHANNELS.
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	STEEL DOORS TO ENG. ROOM & STOKESHOLD, OPERATED FROM BOTH SIDES.
Exposed Machinery Casings on Superstructure Decks	WOOD " " ENGINEERS' PASSAGEWAY, OPERATED " " " "
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	NONE.
Deckhouses on Flush Deck Ships	STEEL HINGED DOOR AT AFTER END OF AFTER DECKHOUSE, TO LAZARETTE, OPERATED FROM BOTH SIDES.
AFTER DECKHOUSE	WOOD " " LEADING TO CREW'S QRTS. & TUNNEL ESCAPE, OPERATED FROM BOTH SIDES.

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:—



SMALL HATCHES
ON
FREEBOARD DECK.

ESCAPE HATCHES

SIZE:- 1'-9" x 2'-8" ✓
COAMING:- 9" x 3" B.A. ✓
COVERS:- 2 1/2" PINE (HINGED) ✓
CLEATS:- 12" ✓
BEAR SUR:- 3" ✓
TARPAULINS:- NONE 2 ✓

COALING HATCH P&S.

12'-0" x 2'-6" ✓
9" x 3" B.A. ✓
2 1/2" PINE (ATHP) ✓
21" ✓
3" ✓
2 TARPAULINS ✓

COALING HATCH P&S.

8'-0" x 4'-0" ✓
9" x 3" B.A. ✓
2 1/2" PINE (ATHP) ✓
20" ✓
3" ✓
2 TARPAULINS ✓

DEEP TANK HATCH P&S.

10'-0" x 8'-0" ✓
10" x 50" ✓
STEEL BOLTED COVER (WT.) ✓

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

SMALL HATCHES
ON
SHELTER DECK.

TONNAGE HATCH.

SIZE:- 18'-2" x 4'-6" ✓
COAMING:- 9" x 3" B.A. ✓
COVERS:- 2 1/2" PINE, F&A ✓
CLEATS:- NONE ✓
BEAR SUR:- 3" ✓
TARPAULINS:- ✓

COALING HATCH P&S.

3'-6" x 5'-0" ✓
30 1/2" x 44" ✓
3" PINE ✓
24" ✓
3" ✓
2 ✓

COALING HATCH P&S.

2'-6" x 3'-6" ✓
30 1/2" x 44" ✓
3" PINE ✓
18" ✓
3" ✓
2 ✓

HATCH TO F.P. STORE.

2'-5" x 2'-0" ✓
3" x 3" ✓
2 1/2" ✓
NO BATTENING ARRET. ✓

COALING HATCH ON

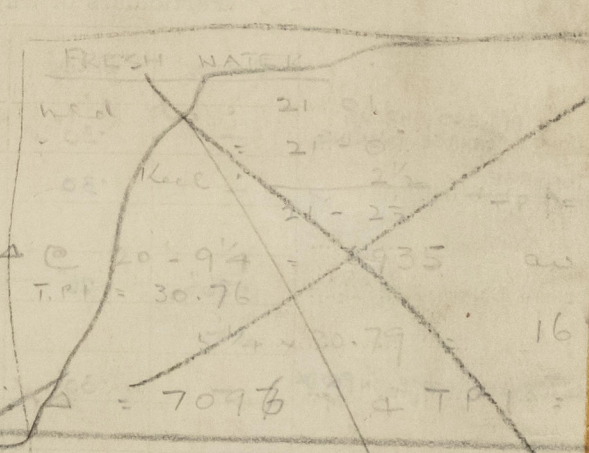
FIDDLEY TOP.

SIZE:- 5'-0" x 15'-2" ✓
COAMING:- 9" x 3" B.A. ✓
COVERS:- 2 1/2" PINE, F&A ✓
CLEATS:- 23" ✓
BEAR SUR:- 3" ✓
TARPAULINS:- 2 ✓

HATCH ON F'CLE DK.

TO F'CLE SPACE.

2'-5" x 2'-0" ✓
15" x 38" ✓
2 1/2" PINE ✓
12" ✓
2 3/4" ✓
2 ✓



Builder's name and yard number. A. McMILLAN & SONS. YARD NO. 865.

Names of sister ships. S. S. "KAVAK".

Owners. JAMES MOSS & CO. (MOSS LINE, LTD.)

Fee £ 11 : 1 : 0. Received by me



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Foundation