DISCLASSED SECTION

B/T. COPY

Rpt. C.11

Lloyd's Register of Shipping.

Index. No. 25026
(For London Office only.)

No. 236.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for ~~Steamer, Sailing Ship~~, Tanker

having Poop, Bridge & Forecastle with Machinery Casings on Freeboard deck.
(Type of Superstructures.)

Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build
T.S. "APPLELEAF	British London	140251	5892	1917-2

Moulded Dimensions: Length 404.5 Breadth 54'-3" Depth 35'-2 3/2"

Moulded displacement at moulded draught = 85 per cent. of moulded depth 12964 tons

Coefficient of fineness for use with Tables .691

Port of Survey Chatham

Date of Survey 12th July 1932

Name of Surveyor C. H. Stocks

Particulars of Classification +100 A1
Carrying Petroleum in Bulk
S.S. Lon 4: 3-11.29.

Depth for Freeboard (D)

Moulded depth	35.25
Stringer plate	.05
Sheathing on exposed deck $T\left(\frac{L-S}{L}\right)$ =	
Depth for Freeboard (D) =	35.30

Depth correction

(a) Where D is greater than Table depth
(D—Table depth) R =
(35.30-26.96)3 = +25.02

(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) 54.25

Standard Round of Beam = $\frac{B \times 12}{50}$ = 13.02

Ship's Round of Beam = 14.00

Difference .98 Hogg.

Restricted to

Correction = $\frac{\text{Diff}^e}{4} \times \left(1-\frac{S_1}{L}\right)$ = $\frac{.98}{4} \times .6419$ = -.16

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S_1)	Height	Height Correction	Effective Length (E)
Poop enclosed	36.25	36.25	8'-2½		36.25
„ overhang	-				
R.Q.D. enclosed ...		23.14			23.14
„ overhang ...		~~27.79~~			~~27.79~~
Bridge enclosed... ...	32.00	~~24.00~~ 52	8'-2½		~~24.00~~ 52
„ overhang aft ...		~~2.76~~			~~2.76~~
„ overhang forward		6.62			6.62
F'cle enclosed	73.76	73.76	8'-2½		73.76
„ overhang	7.74	3.84			3.84
Trunk aft					
„ forward					
Tonnage opening aft ...		143.67			143.67
„ „ forward		~~143.83~~			~~143.83~~
Total	149.75	~~154.38~~			134.88

Standard Height of Superstructure 7-5'

„ „ R.Q.D. -

Deduction for complete superstructure 42"

Percentage covered $\frac{S}{L}$ = 37.03

„ „ $\frac{S_1}{L}$ = ~~34.09~~ ~~35.84~~ 52

„ „ $\frac{E}{L}$ = ~~34.09~~ ~~35.84~~ 52

Percentage from Table, ~~Line~~ A.
(corrected for absence of forecastle (if required)) ~~26.84~~ 52

Percentage from Table, ~~Line~~ B. Tanker ~~25.09~~
(corrected for absence of forecastle (if required))

Interpolation for bridge less than ·2L (if required) .268 52 15 11.2

Deduction = 42 x ~~.2509~~ = - ~~10.54~~

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate as fitted		S M	Product
A.P.	50.45	1	50.45	30.0	30.00	30.00	1	30.00
$\frac{1}{6}$L from A.P. ...	22.45	4	89.80	13.5	13.43	13.43	4	53.72
$\frac{2}{6}$L „ ...	5.55	2	11.10	3.0	3.35	3.35	2	6.70
Amidships ...	-	4	-	0	-	-	4	-
$\frac{2}{6}$L from F.P. ...	11.10	2	22.20	10.0	9.65	9.65	2	19.30
$\frac{1}{6}$L „ ...	44.90	4	179.60	39.0	38.71	38.71	4	154.84
F.P.	100.90	1	100.90	76.0	76.00	76.00	1	76.00
Total ...			454.05					340.56

Mean actual sheer aft / Mean standard sheer aft = deficient

Mean actual sheer forward / Mean standard sheer forward = deficient

Length of enclosed superstructure / L forward of amidships = } Tanker.
„ „ aft of „ =

Correction = $\frac{\text{Difference between sums of products}}{18}\left(.75-\frac{S}{2L}\right)$ = $\frac{113.49}{18}(.75-.1851)$ = +3.56

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.

	Ft.
Depth to Freeboard Deck =	35.21
Summer freeboard =	6.77 ~~6.33~~
Moulded draught (d) =	28.~~44~~ ~~50~~

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = ~~7.11~~ 7"

Addition for Winter North Atlantic Freeboard (if required) = 4.046 x 7 = 11.045 = 11"

Deduction for Fresh Water.

Displacement in salt water at summer load water line
Δ = 12338.

Tons per inch immersion at summer load water line
T = 42.5

Deduction = $\frac{\Delta}{40\,T}$ inches
= 7.26
= 7¼"

TABULAR FREEBOARD

~~corrected for Flush Deck~~ (if required)

Correction for coefficient $\frac{.691+.68}{1.36}$, $\frac{1.371}{1.36}$

	+	−
Depth Correction	25.02	~~.15~~ 11.36
Deduction for superstructures	-	~~10.54~~
Sheer correction	3.56	-
Round of Beam correction	✓	.16
Correction for Thickness of Deck amidships ...	✓	-
Other corrections, scantlings, etc.	-	~~.31~~ 11.~~32~~
	28.58	~~10.40~~

63.58
64.10

J. M. M. 21-7-32

+ 14.88

Summer Freeboard = ~~81.98~~ 81.~~32~~ 34

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

Tropical Fresh Water Line above Centre of Disc	...	14¼"	Tropical Fresh Water Freeboard	~~6'-10~~ 6'-9¼"
Fresh Water Line	„ „	... 7¼"	Fresh Water „	~~5'-7¾~~ 5'-7"
Tropical Line	„ „	... 7"	Tropical „	~~6'-2¾~~ 6'-2"
Winter Line	below „	... 7"	Winter „	~~6'-3~~ 6'-2¼"
Winter North Atlantic Line	„ „	... 11"	Winter North Atlantic „	~~7'-6~~ 7'-4¼"
				~~7'-9~~ 7'-8¼"

22 JUL 1932

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS

Forecastle Dk → ← Upper Deck → ← Poop Deck

Description of Hatchway	Fore Hold	For.d Comp.n Hatch	Under Fesl Coff.ms	In Forecastle Forepeak	To Capstan	No.s 2.3.4 Coff.ms	Oil Cargo	F. W. Hatch	Comp.n Hatch	Magazine Spirit
Dimensions of Hatchway	5'-6 × 8'-0	3'-11 × 2'-10	2'-6 × 2'-6	2'-3 × 2'-3	3'-0 × 3'-0	2'-6 × 1'-9	3'-0 × 3'-0	2'-0 × 1'-4	4'-6 × 5'-0	3'-0 × 2'-6
COAMINGS — Height above Deck	30"	18"	26"	9"	7"	26"	36"	6"	18"	28"
COAMINGS — Thickness Sides	.44	.44	.36	.40	.40	.40	.40	.40	.40	.36
COAMINGS — Thickness Ends	.44	.44	.36	.40	.40	.40	.40	.40	.40	.36
COAMINGS — Stiffeners	–	–	–	–	–	–	–	–	–	–
COAMINGS — Brackets, Stays	–	–	–	–	–	–	–	–	–	–
HATCH BEAMS — Number	–									
HATCH BEAMS — Spacing	(Steel intact Trunk to Upper Dk)									
HATCH BEAMS — Scantling and Sketch										
HATCH BEAMS — Bearing Surface										
FORE AND AFTERS — Number	1									
FORE AND AFTERS — Spacing	4'-0									
FORE AND AFTERS — Unsupported Lengths	5'-0									
FORE AND AFTERS — Scantling* and Sketch	2½ × 2½ × .40 ⊤ 10 × .40									
FORE AND AFTERS — Bearing Surface	3"									
HATCH COVERS — Material	W.P.	Steel	Steel	W.P. 2½ F & A	Steel	Steel	Steel	Steel	Steel	Steel
HATCH COVERS — Thickness	3	.50	.40	3"	.40	.40	.50	.40	.50	.40
HATCH COVERS — How fitted	T Rivet	W.T. Cover	W.T. Cover		W.T. Cover	W.T. Cover	O.T. Cover	W.T. Cover	W.T. Cover	W.T. Cover
HATCH COVERS — Bearing Surface	2½ & 2"									
Spacing of Cleats	24"	16"	15"	–	20"	15"	20	15"	30"	14"
Number of Tarpaulins	2	–	–	–	–	–	–	–	–	–

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

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

Particulars of fiddley, funnel and ventilator coamings:— Midship Machinery Casings on Upper Deck unprotected See page 3 & 4. of Substantial Construction and efficient condition. Fiddley openings covered by steel plating and hinged steel covers. Access openings in top of casings see page 4. to Engine Room Boiler Room, Pump Room, Galley etc. Engine Room Skylight of steel with steel flaps. Height of Casings 10'-3 above Upper Deck.

Particulars of Flush Bunker Scuttles:—

Nil.

Particulars of Companionways:— Engineers Workshop Upper Deck:- Plating .25 Stiffs Height 6'-10 Deck opening 3'-0 × 3'-0 with steel hinged door 4'-6 × 2'-0 Sill 20" operated both sides.

Entrance to Poop Space Poop Deck:- Steel House 12'-9 × 7'-0 × 7'-6 high Plating: 30 Stiffs 4" angles and ½ round at 30"-42" with panelled wood door 1½" 4'-10 × 2'-1 Sill 16" operated both sides.

Entrance to For.d Aux Pump Room in after end of Fesle Wing Houses:- Steel hinged door 5'-0 × 2'-0 Sill 18" operated both sides. ~~Note:- closing appliances require to be placed in good order.~~

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

Forecastle Deck:- 7"-16" dia ordinary Coamings 29"-34" high × .36 to Fesle Tweendecks & Hold.

Bridge Deck:- 6-8" dia ordinary Coamings 24" × .30 to Bridge Space.

Poop Deck:- 5" dia Swanneck opening 10" above deck to Poop Space.
5"-10" dia ordinary Coamings 28-33" high × .36 to Poop Space & Tweendecks.

Upper Deck:- 8" dia French type 30" above deck to opening. Efficient closing appliances provided for all vents.

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

Forecastle Deck:- 4" dia Swanneck with opening 4½" above Fesle Deck

Upper Deck:- 4" dia Swanneck with opening 33½ above deck to Coff.ms 2. 3 & 4
3" " 19" " F.W. Tanks.

Poop Deck:- 4" dia Swanneck with opening 12" above Poop Deck.

Efficient closing appliances provided for all air pipes

Particulars of Gangway Cargo and Coaling Ports:—

Nil.

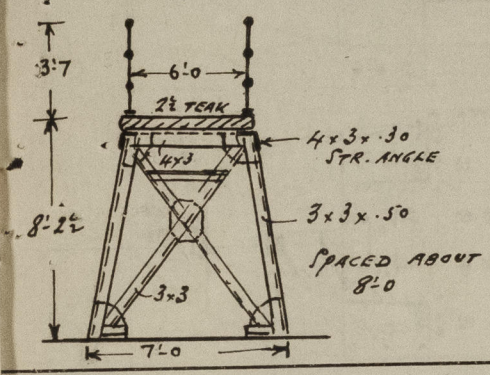
Particulars of Scuppers and Sanitary Discharge Pipes:— Sanitary & scupper discharges from Poop, Bridge & Forecastle spaces fitted with storm valves on ships side about 3'-0 below upper deck. Inboard ends have water traps or plugs except in case of scuppers which have open gratings.

Particulars of Side Scuttles:— Of substantial construction and efficient condition in erections & casings. All fitted with hinged deadlights.

Particulars of Guard Rails:—

Forecastle Deck:-	Height 3'-6	3 Rails	Stanchions spaced about	4'-6	
Bridge Deck:-	" 3'-7	3 "	" " "	4'-6	
Poop Deck:-	" 3'-8	3 "	" " "	4'-8	
Upper Deck aft:-	" 3'-8	3 "	" " "	4'-6	& part bulwarks
Upper Deck for'd	" 3'-9	Plating .50	Stays & Top Rail 6" B.A.	Stays spaced 6'-0	

Particulars of Gangways, Lifelines, etc.:—



Fore & aft gangway fitted connecting Poop, Bridge & Forecastle port & stbd. sides see page 4.

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 ... Open rails except	35'-0 at Poop ftg 28'-0 at Bridge	3'-9	3'-0 x 1'-6 12'-0 aft Bridge End	1	✓	✓
Forward Well	38'-10	3'-9	5'-0 x 1'-10½ ——— 3 3'-7 x 1'-10½ ——— 1 3'-0 x 1'-6 ——— 1		37 ☐'	37 ☐ = 25% if cut low

State position of each freeing port ... ... (F. and A. position and height above deck edge) After Well:— ✓ Forward Well:— Br. Fcsle Sill 12"

State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— Open ports with 3 & 2 rods.

Additional area where sheer is less than standard.

Particulars of Superstructures, Trunks, Casings, Deckhouses.

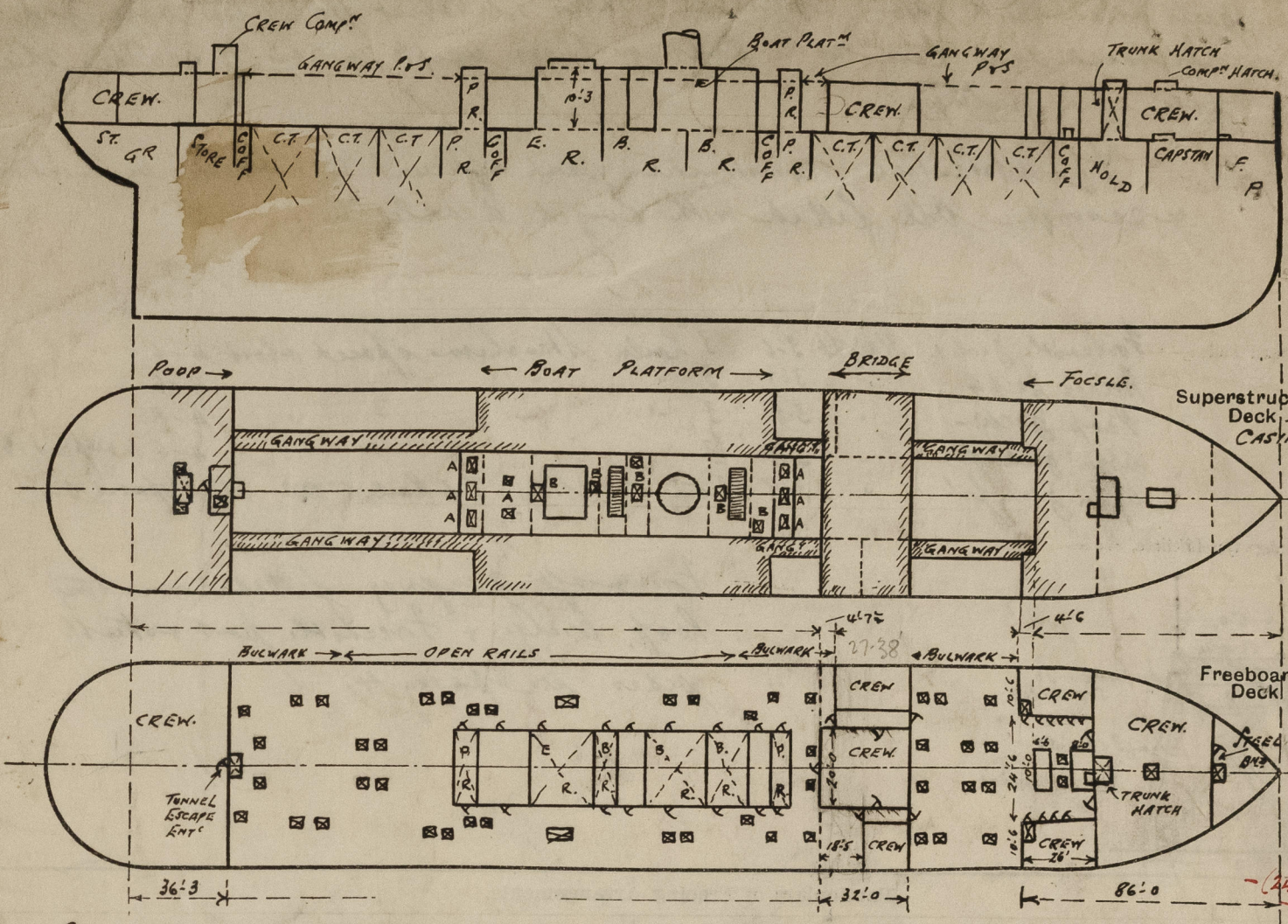
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead	.44	.40	6½ x 3 x .44]	36"-42"	Bkt. To B.	Nil	-	8'-2½
Raised Quarter Deck Bulkhead ...	✓							
Bridge, After Bulkhead	.30	.30	3 x 3 x .40	33	Nil	5'-0 x 2'-0	17"	8'-2½
Bridge, Forward Bulkhead	.44	.40	9 x 3½ x 3½ x .50]	30"	Bkt. To B.	4'-8 x 1'-11	19"	"
Forecastle Bulkhead	.30	.30	3½ x 3 x .30	30	Nil	5'-0 x 2'-0 5'-0 x 3'-3	18"	8'-2½
Trunk, Aft	✓							
Trunk, Forward	✓		See Sketch on page 4.					
Exposed Machinery Casings on Freeboard ~~or Raised Quarter~~ Decks ...	.40	.34	8 webs ✓ 4 x 2½ x .36	24"-48"	Pl. Bkts	4'-9 x 2'-0 & 2'-3 5'-0 x 2'-10	18" & 28"	10'-3
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	No openings
Raised Quarter Deck Bulkhead ...	✓
Bridge, After Bulkhead	Hinged steel doors at side, hinged wood (1½") door at Ctr. operated both sides
Bridge, Forward Bulkhead	Hinged steel doors operated both sides.
Forecastle Bulkhead	Hinged steel & 1½" wood doors operated both sides.
Exposed Machinery Casings on Freeboard ~~or Raised Quarter~~ Decks ...	Hinged steel W.T. doors operated both sides.
Exposed Machinery Casings on Superstructure Decks	✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	✓
Deckhouses on Flush Deck Ships ...	✓

~~Note:~~ ~~Closing appliances to be placed in good order.~~

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 :—



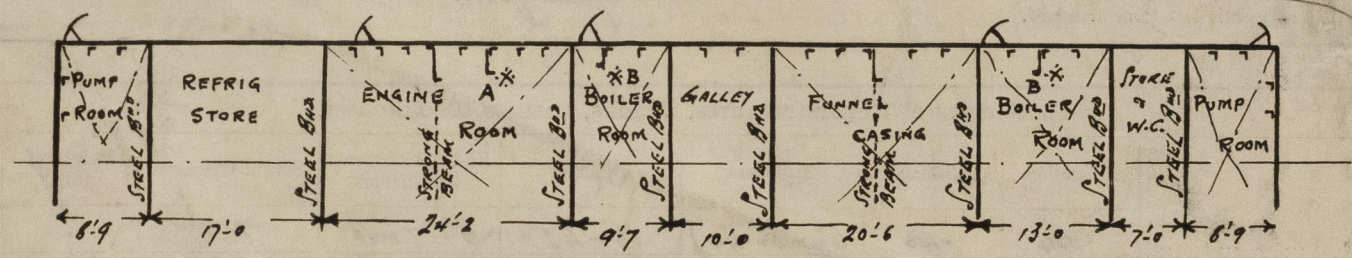
CASING TOP ENTRANGES:- "A" = W.T. STEEL HATCH 4" COAMING TO PUMP ROOMS & STORES.

"B" = STEEL COMPANIONS TO ENGINE ROOM, BOILER ROOM, GALLEY & W.C.

2'-0 x 2'-0 x 5'-0 HIGH STEEL DOOR 4'-0 x 1'-7"
2'-6 x 2'-6 x 5'-0 " " " 4'-0 x 1'-9
4'-0 x 2'-0 x 5'-0 " " " 4'-0 x 1'-9
} SILL 6" OPERATED BOTH SIDES.

State any special features in the construction of the ship :— Sheerstake stands 12" above Upper Deck.

Arrangement of Stiffening & Machinery Casings:-



ADDITIONAL STIFFENING NOW FITTED.

AT "A", WEB {24" TOP 9" BOTTOM x .40 flanged 4"
AT "B" REVERSE BAR 9" B.A

Condition Freeboard Survey held afloat.

Builder's name and yard number Workman Clark & Co. Ltd. No. 368

Names of sister ships Leaf class Admiralty Tankers ("ORANGELEAF" Lon Rpt 25094)

Owners The Admiralty

Fee £ 13 : 12 : 0 } Received by me
Exp. 2 : 5 : 0 } 9/11/32