

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

N^o 31044

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

having *a complete Superstructure with a tonnage opening aft.*
GRADO (Type of Superstructures.)

Ship's Name *SILVERELM* Nationality and Port of Registry *British London* Official Number *147648* Gross Tonnage *4351* Date of Build *1924 5 Mo.*

Moulded Dimensions: Length *375.0* Breadth *52.31* Depth *28.3*

Moulded displacement at moulded draught = 85 per cent. of moulded depth *10513* tons

Coefficient of fineness for use with Tables *.781*

Port of Survey *Sunderland.*

Date of Survey *22nd September 1932.*

Name of Surveyor *A. J. Paton.*

Particulars of Classification *+100 A.I. Complete Superstructure with freeboard.*
S.S. / Am. Nov. 28

Depth for Freeboard (D)		Depth correction		Round of Beam correction	
Moulded depth	28.25	(a) Where D is greater than Table depth (D - Table depth) R =		Moulded Breadth (B)	28.25 52.31
Stringer plate	.39	(28.28 - 25.00) 2.284 = + 9.46		Standard Round of Beam = $\frac{B \times 12}{50}$	12.55
Sheathing on exposed deck		(b) Where D is less than Table depth (if allowed) (Table depth - D) R =		Ship's Round of Beam	123/4 = 12.75
T $\left(\frac{L-S}{L}\right) =$				Difference	.20
Depth for Freeboard (D) =	28.28	If restricted by superstructures		Restricted to	
				Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L}\right)$	= $\frac{.20}{4} (.0069)$ Nil

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Roop enclosed	26.54	26.54	8.0		26.54
overhang					
R.Q.D. enclosed					
overhang					
Bridge enclosed					
overhang aft					
overhang forward	343.30	343.20	8.0		343.30
F'cle enclosed					
overhang					
Trunk aft					
forward					
Tonnage opening aft	5.16	2.58	8.0		2.58
forward					
Total	375.00	372.42			372.42

Standard Height of Superstructure *7.25*

" " R.Q.D. *-*

Deduction for complete superstructure *40.33*

Percentage covered $\frac{S}{L} = 100.0$

" " $\frac{S_1}{L} = 99.31$

" " $\frac{E}{L} = 99.31$

Percentage from Table, Line A. *99.15*
(corrected for absence of forecastle (if required))

Percentage from Table, Line B. *-*
(corrected for absence of forecastle (if required))

Interpolation for bridge less than .2L (if required) *-*

Deduction = $40.33 \times .9915 = - 39.99$

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	47.50	1		47.50	54.0	54.0	1		63.00
1/4 L from A.P.	21.14	4		84.56	23.3	28.03	4		112.12
1/2 L	5.22	2		10.44	5.81	6.93	2		13.86
Amidships		4			0		4		
3/4 L from F.P.	10.45	2		20.90	11.72	12.87	2		25.74
1/4 L	42.28	4		169.12	47.00	52.06	4		208.24
F.P.	95.00	1		95.00	108.0	117.00	1		117.00
Total				427.52					539.96

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - S}{2L} \right) = \frac{112.44}{18} \left(\frac{.75 - .50}{.75} \right) = - 1.56$

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 = *28.28* Ft.

Summer freeboard = *3.04*

Moulded draught (d) = *25.24*

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = $\frac{6.31}{4} = 1.58$

Addition for Winter North Atlantic Freeboard (if required) =

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta = 11161$

Tons per inch immersion at summer load water line

T = 40.

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

= $\frac{11161}{1600} = 6.98$

= 7

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

$\frac{281 + 680}{1.36} = \frac{1461}{1.36}$

$\frac{1.461}{1.36}$

$\frac{1.461}{1.36}$

$\frac{1.461}{1.36}$

$\frac{1.461}{1.36}$

$\frac{1.461}{1.36}$

$\frac{1.461}{1.36}$

$\frac{1.461}{1.36}$

$\frac{1.461}{1.36}$

$\frac{1.461}{1.36}$

$\frac{1.461}{1.36}$

$\frac{1.461}{1.36}$

$\frac{1.461}{1.36}$

$\frac{1.461}{1.36}$

$\frac{1.461}{1.36}$

$\frac{1.461}{1.36}$

$\frac{1.461}{1.36}$

$\frac{1.461}{1.36}$

$\frac{1.461}{1.36}$

$\frac{1.461}{1.36}$

$\frac{1.461}{1.36}$

$\frac{1.461}{1.36}$

$\frac{1.461}{1.36}$

$\frac{1.461}{1.36}$

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

Tropical Fresh Water Line above Centre of Disc	13 1/4
Fresh Water Line	17 1/8
Tropical Line	15 9/16
Winter Line below	15 9/16
Winter North Atlantic Line	

Tropical Fresh Water Freeboard	590 m/m. 1 - 11 1/4
Fresh Water	749
Tropical	768
Winter	1086
Winter North Atlantic	

MARKING

RECEIVED

Lloyd's Register Foundation

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS											
Description of Hatchway		Nº1 on Upper Sk.	Nº1 on 2 nd Sk.	Nº2 on Upper Sk.	Nº2 on 2 nd Deck.	Nº3 on Upper Deck	Nº3 on 2 nd Deck.	Nº4 on Upper Deck	Nº4 on 2 nd Deck.	Nº5 on Upper Deck	Nº5 on 2 nd Deck.
Dimensions of Hatchway		31'-6" x 22'-0"	31'-6" x 22'-0"	33'-7" x 22'-0"	33'-7" x 22'-0"	28'-5" x 22'-0"	10'-4" x 22'-0"	33'-7" x 22'-0"	33'-7" x 22'-0"	33'-7" x 22'-0"	33'-7" x 22'-0"
COAMINGS	Height above Deck	32"	18"	32"	18"	32"	18"	32"	18"	32"	18"
	Thickness	50	50	56	50	44	50	56	50	56	50
	Stiffeners	7 x 3	44	50	44	50	44	50	44	50	44
	Brackets, Stays	3/8" 2" dia. 7/8" apart	NONE	7 x 3, 38 BA 3/8" 2" apart	NONE	7 x 3, 38 BA 3/8" 2" apart	NONE	7 x 3, 38 BA 3/8" 2" apart	NONE	7 x 3, 38 BA 3/8" 2" apart	NONE
HATCH BEAMS	Number	5	5	6	6	5	1	6	6	6	6
	Spacing	5'-2"	5'-2"	4'-9"	4'-9"	4'-9"	5'-2"	4'-9"	4'-9"	4'-9"	4'-9"
	Scantling and Sketch	4 1/2" x 3" x 16'	18 3/4" x 3" x 16'	18 3/4" x 3" x 16'	18 3/4" x 3" x 16'	18 3/4" x 3" x 16'	18 3/4" x 3" x 16'	18 3/4" x 3" x 16'	18 3/4" x 3" x 16'	18 3/4" x 3" x 16'	18 3/4" x 3" x 16'
	Bearing Surface	3	3	3	3	3	3	3	3	3	3
FORE AND AFTERS	Number										
	Spacing										
	Unsupported Lengths										
	Scantling* and Sketch										
HATCH COVERS	Material	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"
	Thickness	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"
	How fitted	F x A	F x A	F x A	F x A	F x A	F x A	F x A	F x A	F x A	F x A
	Bearing Surface	3	3	3	3	3	3	3	3	3	3
Spacing of Cleats		23"	22"	23"	22"	23"	22"	23"	22"	23"	22"
Number of Tarpaulins		2	NONE	2	NONE	2	NONE	2	NONE	2	NONE

Particulars of fiddle, funnel and ventilator coamings:— *Stokehold gratings covered by strong hinged covers.*

Engine & Boiler Ventilation in efficient condition.

Engine Skylight of steel strongly constructed.

Particulars of Flush Bunker Scuttles:—

Notable in all latitudes is the presence of no necessary

Particulars of Companionways :—

None

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

[illegible]

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

one on Red Creek.	4' dia	x 5' high	to top	Peak Cañon
Two "	14 "	x 14 "	" "	" "
Two "	upper Sk.	3 1/2 "	x 14 "	Nº 1 & 2 Tanks, (Double bottom)
one "	"	3 1/2 "	x 14 "	Nº 2 Tank.
Two "	"	3 1/2 "	x 14 "	Nº 3 "
one "	"	2 1/2 "	x 14 "	Nº 3 "
Four "	"	3 1/2 "	x 14 "	Nº 4 Tank.
Two "	"	3 1/2 "	x 14 "	" 5 "
one "	"	2 "	x 7 1/2 "	To upper Peak Cañon.

Particulars of Gangway Cargo and Coaling Ports:—

None

Particulars of Scuppers and Sanitary Discharge Pipes :—

Scuppers and Sanitary Discharge Pipes :-
 Six Scuppers on each side of 2nd Deck. led out below deck, 3½" dia^r with brass storm valves on ship's side.
 Seven " of upper Deck " " " 3½ " pipe. led out below upper Deck.
 Two Sanitary Discharges from Engineers Accommod. 4" dia^r } led out below 2nd Deck with valves fitted at ship's side.
 midship

Particulars of Side Scuttles:—

all above freeboard deck.
Sidelights in crew space in forecabin all fitted with C. I. Dead Lights
all of substantial thickness.

Particulars of Guard Rails :—

Position as on sketch.
3'5" high with 3 posts. Stanchions spaced 4'6" apart.
Steel bulwarks where shown on sketch efficiently constructed
and supported.

Particulars of Gangways, Lifelines, etc. :—

NONE.

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	5.16'	8'0"	2.5' x 1.66'	1.	4.15 ϕ .	
Bulwark on upper deck... Forward Well	117'.33	3'-4"	2.5' x 1.5'	2.	7.50 ϕ .	

State position of each freeing port ... *at forward and tonnage well.* 9" above deck.
 F. and A. position and height above deck edge) *on horizontal fore of engine room.* 7'-6" and 25'-4" between. 12" above deck edge.
 State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such: — *Shutters on F.P. in tonnage well.*
Two horizontal rods 7/8" dia in F.P. in bulwark of superstructure deck

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	None.	.25	3 1/2" x 3" = .26	2'6" / 4'6"	none.	none.	none	8'0"
Raised Quarter Deck Bulkhead	none.	.30	3 x 3 = .30 + 8 1/2" x 3" = .50 BA.	2'6"	Brackets top & bottom 2 BA. stiff.	5'1" x 3'3"	19"	8'0"
Bridge, After Bulkhead	—							
Bridge, Forward Bulkhead	18" x 36	.25.	3" x 3" = .25	27"	none	2 @ 4'6" x 24" 4 @ 4'6" x 22"	19"	7'6"
Forecastle Bulkhead	—							
Trunk, Aft	—							
Trunk, Forward	—							
Exposed Machinery Casings on Free- board or Raised Quarter Decks ...	18" x 44	.30	3 1/2" x 3" = .25	2'8"	Brackets at tops	2 @ 4'7" x 22"	19"	7'9"
Exposed Machinery Casings on Super- structure Decks	18" x 44	.26	3 1/2" x 2 1/2" = .26	2'10"	Brackets at top & continuums	1 each side 4'6" x 22"	19"	8'0"
Machinery Casings within Superstruc- ture not fitted with Class I Closing Apparatus	—							
Decks on Flush Deck Ships ...	—							

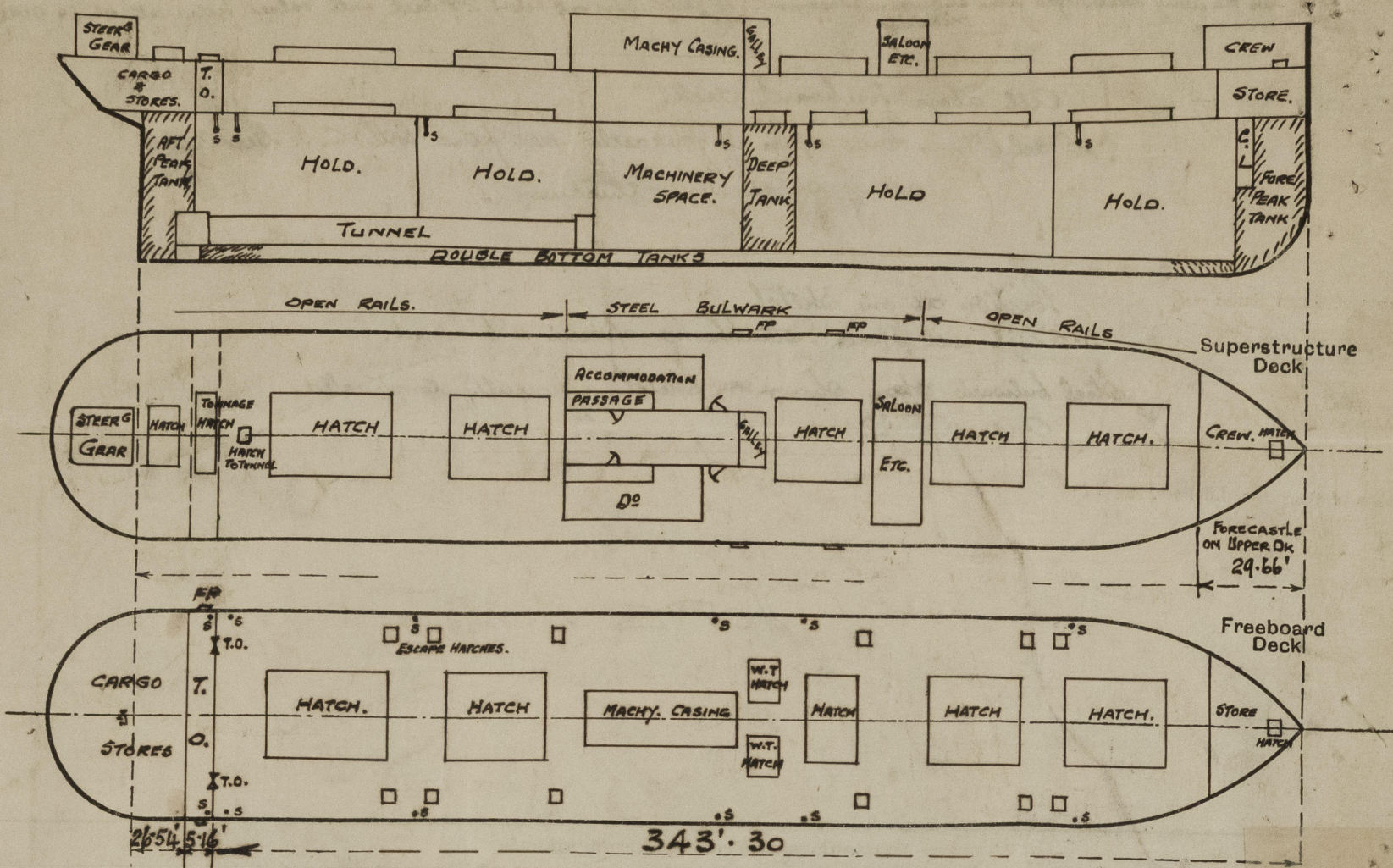
Particulars of Closing Appliances (state if capable of being manipulated from both sides).

Particulars of Closing Appliances		Remarks
Poop Bulkhead	...	none
Raised Quarter Deck Bulkhead	...	✓
Bridge After Bulkhead	...	Two Tonnage openings. 2 1/2" storm boards in full height riveted channels.
Bridge Forward Bulkhead	...	Two bulk doors 1 1/2" with Randa 1" operated both sides. To crew & Crews Galley.
Forecastle Bulkhead	...	Four .25 steel doors. operated both sides To W.C.'s & Store room.
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	...	✓
Exposed Machinery Casings on Superstructure Decks	...	Two .25 steel doors operated both sides To Fiddley
Machinery Casings within Superstructure not fitted with Class I Closing Appliances	...	Two .25 steel doors operated both sides To Engine room
D. Houses on Flush Deck Ships	...	✓

0039 1/2

Silverelm.

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:—



Ext. Draft.	Ext. Δ.	T.P.I.
24'-0"	10492	39.75
25'-0	10970	40.01
26'-0	11450	40.23.

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

The vessel has been sea-tried afloat.
She is also undergoing S.S. No. 2
which it is intended to complete at this time.

~~Hatches on all hatchways to be renewed as necessary~~
~~The sheet iron plugs to swan neck air pipes, to be renewed as necessary.~~

Builder's name and yard number Messrs Wm Dorland No. 579

Names of sister ships _____

Owners Silver Line Ltd. [Stanley & John Thompson Ltd. Managers]

Fee £ 12 : 15 : - Received by me _____