

Lloyd's Register of Shipping.
SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having

Forecastle & Combined Bridge & Poop.

Port of Survey

Newcastle

(Type of Superstructures.)

Date of Survey

During Construction

Ship's Name

THORNABY
NORTHUMBRIAN COAST

Nationality and Port of Registry

Middlebrough

160745

Gross Tonnage

1174

Date of Build

1935.

Name of Surveyor

F. J. Webster

Moulded Dimensions: Length

225.

Breadth

33.

Depth

16'-6" to 4 ft

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

2090

tons

Coefficient of fineness for use with Tables

.702

Particulars of Classification

700 A 1

Depth for Freeboard (D)

Moulded depth 16'-6"

Stringer plate 72"

Sheathing on exposed deck

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

Depth for Freeboard (D) =

16'-54"

Depth correction

(a) Where D is greater than Table depth

(D-Table depth) R = (16'-54" - 15'-00") 1.731

= + 2.66"

(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) 33'-00"

Standard Round of Beam = $\frac{B \times 12}{50} = 7.92"$

Ship's Round of Beam = 8"

Difference Excess .08"

Restricted to

Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.08}{4} \times .3984 = -.01$

DEDUCTION FOR SUPERSTRUCTURES.

Poop enclosed ...
" overhang ...
R.Q.D. enclosed
" overhang
Bridge enclosed...
" overhang aft
" overhang forward
F'ble enclosed ...
" overhang ...
Trunk aft ...
" forward ...
Tonnage opening aft ...
" " forward
Total ...

Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
99'-8"	99'-67"	7'-6"	✓	99'-67"
13'-5"	13'-42"	7'-6"	✓	13'-42"
5"	.21			.21
2'-10"	2'-83"	7'-0"	✓	2'-83"
3"	.25			.25
135'-58"	135'-38"			135'-38"

Standard Height of Superstructure 6'-0" ✓

" " R.Q.D. 3'-833" ✓

Deduction for complete superstructure 28'-50" ✓

Percentage covered $\frac{S}{L} = 60.2\%$ " $\frac{S_1}{L} = 60.16\%$ " $\frac{E}{L} = 60.16\%$

Percentage from Table, Line A. 46.27% ✓

(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 = 28'-50" x .4627 = -13'-19" ✓

SHEER CORRECTION.

Actual H₀ of R.Q. Deck = 7.50

Standard " = 3.833

Diff = 3.667

= 44"

Mean actual sheer aft = Excess

Mean actual sheer forward = Standard

Length of enclosed superstructure forward of amidships = .002L ✓

" " aft of " = .5L ✓

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	32.50	1		32.50	22.	66.00	1		66.00
1/8 L from A.P. ...	14.46	4		57.84	10.	29.37	4		117.48
2/8 L " ...	3.575	2		7.15	2.5	7.26	2		14.52
Amidships ...	✓	4		✓	✓	✓	4		✓
2/8 L from F.P. ...	7.15	2		14.30	7.16	7.16	2		14.32
1/8 L " ...	28.92	4		115.68	28.94	28.94	4		115.76
F.P. ...	65.00	1		65.00	65.10	65.10	1		65.10
Total ...				292.47					393.18

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{75-S}{2L} \right) = \frac{100.71}{18} \left(\frac{75-.3012}{2} \right) = -2.51"$

If limited on account of midship superstructure.

 $2.51 \times \frac{102}{200} = 1.28"$

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 = Ft. 73

Summer freeboard = 16'-56"

Moulded draught (d) = 15'-19"

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = 3.79" = 3 3/4"

Addition for Winter North Atlantic Freeboard (if required) = 3 3/4" + 2" = 5 3/4"

Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta = 2313$

Tons per inch immersion at summer load water line

T = 14.51

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

= 3.99" = 4"

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

 $\frac{702+.68}{1.36} = \frac{1382}{1360}$

27'-55" ✓

28'-00" ✓

Depth Correction 2.66"

Deduction for superstructures 13.19"

Sheer correction 1.28"

Round of Beam correction (Plank Plate)01"

Correction for Thickness of Deck amidships 2.24"

Other corrections, scantlings, etc. 4"

Summer Freeboard = 18'-42" ✓

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

Tropical Fresh Water Line above Centre of Disc ... 7 3/4"
Fresh Water Line " " ... 4"
Tropical Line " " ... 3 3/4"
Winter Line below " " ... 3 3/4"
Winter North Atlantic Line " " ... 5 3/4"Tropical Fresh Water Freeboard ... 0'-10 3/4"
Fresh Water " ... 1'-0 1/2"
Tropical " ... 1'-0 3/4"
Winter " ... 1'-8 1/4"
Winter North Atlantic " ... 1'-10 1/4"

17 MAY 1935

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS								
Description of Hatchway	No. 1.	No. 2	No. 3.	No. 4.	No. 5.	No. 6.	No. 7.	No. 8.
Dimensions of Hatchway	32'-7" x 20'	32'-7" x 20'	32'-7" x 18'	34' - 0"	34' - 0"	34' - 0"	34' - 0"	34' - 0"
COAMINGS { Height above Deck	34'-37" ✓	34'-37" ✓	34'-37" ✓	34'-37" ✓	34'-37" ✓	34'-37" ✓	34'-37" ✓	34'-37" ✓
{ Thickness Sides Ends	✓	✓	✓	✓	✓	✓	✓	✓
{ Stiffeners	7 x 3 x 40	7 x 3 x 40	7 x 3 x 40	7 x 3 x 40	7 x 3 x 40	7 x 3 x 40	7 x 3 x 40	7 x 3 x 40
{ Brackets, Stays	4 Pl. 16x5	4 Pl. 16x5	4 Pl. 16x5	4 Pl. 16x5	4 Pl. 16x5	4 Pl. 16x5	4 Pl. 16x5	4 Pl. 16x5
HATCH BEAMS { Number	6	6	6	6	6	6	6	6
{ Spacing	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"
{ Scantling and Sketch	Pl. 18 x 38	Pl. 18 x 38	Pl. 18 x 38	Pl. 18 x 38	Pl. 18 x 38	Pl. 18 x 38	Pl. 18 x 38	Pl. 18 x 38
Bearing Surface	4'-3" x 4" ✓	4'-3" x 4" ✓	4'-3" x 4" ✓	4'-3" x 4" ✓	4'-3" x 4" ✓	4'-3" x 4" ✓	4'-3" x 4" ✓	4'-3" x 4" ✓
FORE AND AFTERS { Number								
{ Spacing								
{ Unsupported Lengths								
{ Scantling* and Sketch								
Bearing Surface								
HATCH COVERS { Material	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.
{ 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 ✓
{ How fitted	3/4" x 4" ✓	3/4" x 4" ✓	3/4" x 4" ✓	3/4" x 4" ✓	3/4" x 4" ✓	3/4" x 4" ✓	3/4" x 4" ✓	3/4" x 4" ✓
{ Bearing Surface								
Spacing of Cleats	24'-24"	23'-28"	23'-28"	23'-28"	23'-28"	23'-28"	23'-28"	23'-28"
Number of Tarpaulins	2	2	2	2	2	2	2	2

*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? *bars & screws.*

Particulars of fiddley, funnel and ventilator coamings :—

Fidley funnel & vents in excellent condition ✓
Engine room skylight of steel strongly constructed. ✓

Particulars of Flush Bunker Scuttles:—

None ✓

Particulars of Companionways :—

one aft to crew accom^{ny} 2'-2" x 4'-8". Door steel hinged 18" sill. / operated with tackle ✓
 one at aft end of bridge house door 2'-2" x 4'-6" solid teak 18" sill. ✓ do.
 one at fore deck house to bridge accom door 2'-0" x 5'-5" solid teak 18" sill. ✓ do.
 above wood dks ✓
 Companion built into strongly constructed steel deck houses
 all give access into embark tank & bridge / space ✓

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

on deck 13 1/2" dia x 36" high to No 1 Hold.
In fore well do. do.
on bridge deck 2 @ 12" dia x 26" high to fore hold
R.Q. 2 do. do. off hold
on ~~deck~~ 2 to crew 5" dia x 27" to crew.

1. Goose nest vent of Br. Sparc $2\frac{1}{2}$ " dia x 18" to mouth
2. Mushroom type 6" dia to Budget acorn —
- 2 owl do. $2\frac{1}{2}$ " x 7". 18" high do.

Plugs and Canvas covers
provided

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

On foremast head 1 @ 2 1/2" dia 18" to G.R. mouth to fore peak
2 @ do do to No 1. tank
In well 2 @ 3 1/2" do 36" to bend with snaphing hole (limited by bunk rail)
On Bridge deck 4 @ 2 1/2" dia 15" to Mouth. 2 fore head. 2 C.B.
To aft peak on foremast one 2 1/2" one 3" x 18" to mouth to Peak; transverse & space
To Tunnel on R.O.D. **RED 6" dia - 30" height** **wood plugs provided**
Particulars of Gangway Cargo and Coaling Ports:—

Particulars of Gangway Cargo and Coaling Ports :—

None. ✓

THORNABY

14 MAY 1935

Particulars of Scuppers and Sanitary Discharge Pipes :—

Sand trap discharges from main lead foot & bridge & are
led through ship's side just below freeboard deck
& fitted with flap valves.
Scupper of pipe type discharge below flood deck.

Particulars of Side Scuttles:—

Sidelights Jested with strong hinged deadlights.

Particulars of Guard Rails :—

R.R.D. for 62'-1"
On ~~port~~ deck 3-3. slag bulwark 1' aft & 3-3 open rails ~~port~~ ^{to} end of
~~port~~ bridge 3 rods. Stations 5 - apart.
Bulwark in well.
On deck rails 3-3 high. Stations 4 - apart. 2 rods.

Particulars of Gangways, Lifelines, etc. :—

~~None~~. Crew are berthed aft & midships.
Lifelines have been provided in all parts of ship which might have to be used by the crew in the regular evolutions thereof.

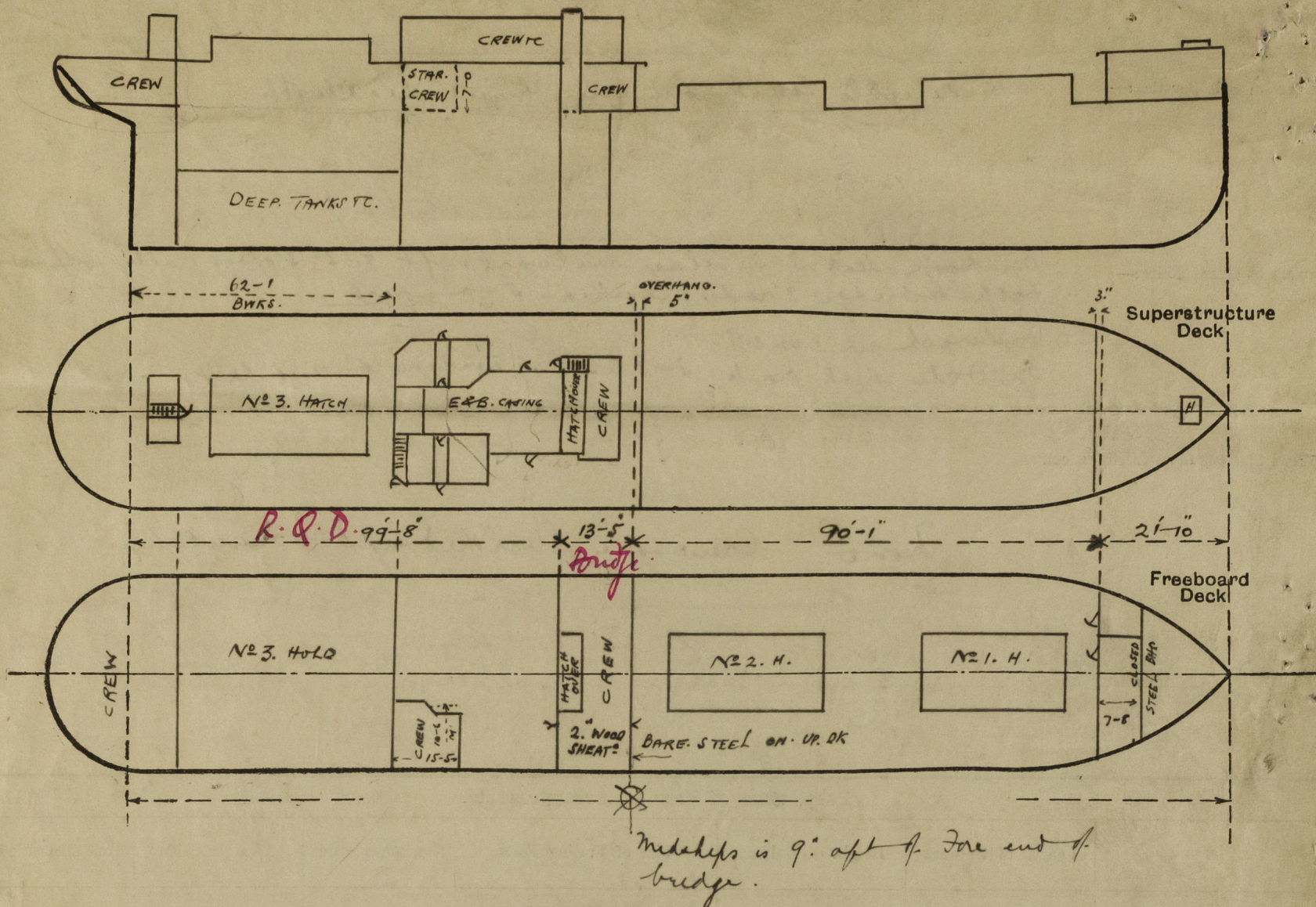
Particulars of Freeing Arrangements.						
	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
After Well ... <i>on bulk</i> ...	62-1	3-3	<i>2'-0" x 9" and rails at at forward end same port.</i>	<i>1, 3, 2</i>	<i>3.75 sq. ft. open rail</i>	<i>x</i>
Forward Well ...	90-1	3-3	<i>12'-0" x 9"</i>	<i>2 each side</i>	<i>18 sq. ft.</i>	<i>18.00 sq. ft. ✓</i>
<p>State position of each freeing port ... { After Well: <i>2-3-6 each side of deck at stern, 6" above deck</i></p> <p>(F. and A. position and height above deck edge) { Forward Well: <i>2-9-10 aft, end of No 3 hatch</i></p> <p>State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— <i>open ports</i></p> <p>Additional area where sheer is less than standard. <i>x an additional pair of scuttles fitted at breast of No 3 hatch same pattern as others</i></p>						

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								
Bridge, Forward Bulkhead	34"	34	6. 3. 26 L	25 1/2	lugged at top E.W. bottom	None ✓	—	7-6 0 7-0 in Lm
Forecastle Bulkhead	40	26	22. 3. 32 L	30.	None	Two @ 4x2.	24" ✓	7-0.
Trunk, Aft								
Trunk, Forward								
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...								
Exposed Machinery Casings on Super-structure Decks	31	27	3. 2. 30. L	30 ✓	None	4x2-0.	18" ✓	7-3.
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	...	...	...	None steel bulk
Raised Quarter Deck Bulkhead	...	...	...	None
Bridge, After Bulkhead	...	...	...	None door
Bridge, Forward Bulkhead	...	...	...	None door No opening
Forecastle Bulkhead	...	...	...	2 steel hinged doors. operated both sides
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	...	...	...	None
Exposed Machinery Casings on Superstructure Decks	...	...	...	2 steel doors (to feedley (hinges)) 2 tank 1 1/2 solid doors leading into tank through hinges all operated both sides.
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	...	...	...	accommodation.
Deckhouses on Flush Deck Ships	...	...	...

Superstructure bulkheads, trunks, deckhouses, casings, cargo and coaling ports, 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 crew are berthed amidship aft.
 14'-11" mid = 15'-0" extreme draft. L.t. depth = 2262 tons T.P.I. 14.51
 14'-025" = 14'-108" " " 2108 " 14.33.
 12'-11" = 13'-0" " " 1917 " 14.12
 Copies of all approved plans are in London Office.

OMIT

Builder's name and yard number

R. W. Hawthorn Leslie & Co. No. 596

Names of sister ships

~~S. H. Crasler. S. H. Wigham Richardson No. 1482~~

Owners

Tyne Lees Shipping Co

Fee £

will be charged with 14.8

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