

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

now named "VEST" of Farsund (8/5/39)

29564
21985

29564

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having Poop Bridge and Forecastle

CEFNDRYN (Type of Superstructures.)

Ship's Name ARDENHALL Nationality and Port of Registry British Liverpool Official Number 138929 Gross Tonnage 5074 Date of Build 1920-12

Moulded Dimensions: Length 400.0 Breadth 52.00 Depth 31.0

Moulded displacement at moulded draught = 85 per cent. of moulded depth 12024 tons

Coefficient of fineness for use with Tables .768

Port of Survey Barry

Date of Survey July 7th 1932

Name of Surveyor W. Middlemiss

Particulars of Classification 100. A.1.
S.S. No 2-29

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth <u>31.0</u>	(a) Where D is greater than Table depth (D-Table depth) R = $(31.04 - 26.67)3$ = + 13.11	Moulded Breadth (B) <u>52.00</u>
Stringer plate <u>.42"</u> <u>.04</u>	(b) Where D is less than Table depth (if allowed) (Table depth-D) R = -	Standard Round of Beam = $\frac{B \times 12}{50} = 12.48$
Sheathing on exposed deck <u>1/4" 3"</u>		Ship's Round of Beam = <u>13"</u>
$T \left(\frac{L-S}{L} \right) =$		Difference <u>Excess .52</u>
Depth for Freeboard (D) = <u>31.04</u>	If restricted by superstructures -	Restricted to
		Correction = $\frac{\text{Diff}^s}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.52}{4} \left(1 - \frac{.516}{48.40} \right) = .1248$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed	<u>35.6</u>	<u>35.50</u>	<u>8.0</u>		<u>35.50</u>
" overhang					
R.Q.D. enclosed					
" overhang					
Bridge enclosed	<u>117.0</u>	<u>117.00</u>	<u>8.0</u>		<u>117.00</u>
" overhang aft	<u>20" 2.5</u>	<u>1.88</u>			<u>1.88</u>
" overhang forward	<u>9" .75</u>	<u>.37</u>			<u>.37</u>
Fore enclosed <u>2.89</u>	<u>38.10</u>	<u>38.83</u>	<u>8.0</u>		<u>38.83</u>
" overhang <u>2.89</u>	<u>1.88</u>				
Trunk aft					
" forward					
Tonnage opening aft					
" forward					
Total	<u>194.58</u>	<u>193.58</u>			<u>193.58</u>

Standard Height of Superstructure 7.50

" " R.Q.D. 42.00

Deduction for complete superstructure 42.00

Percentage covered $\frac{S}{L} = 48.65$

" " $\frac{S_1}{L} = 48.40$

" " $\frac{E}{L} = 48.40$

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

Percentage from Table, Line B. 34.64

(corrected for absence of forecastle (if required)) -

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

Deduction = 42.00 x .3464 = 14.55

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	<u>50.00</u>	<u>1</u>		<u>50.00</u>	<u>60.0</u>	<u>60.00</u>	<u>1</u>		<u>60.00</u>
$\frac{1}{2}$ L from A.P.	<u>22.25</u>	<u>4</u>		<u>89.00</u>	<u>26.1</u>	<u>26.07</u>	<u>4</u>		<u>104.28</u>
$\frac{3}{4}$ L "	<u>5.50</u>	<u>2</u>		<u>11.00</u>	<u>6.5</u>	<u>6.52</u>	<u>2</u>		<u>13.04</u>
Amidships		<u>4</u>					<u>4</u>		
$\frac{3}{4}$ L from F.P.	<u>11.00</u>	<u>2</u>		<u>22.00</u>	<u>13.25</u>	<u>13.28</u>	<u>2</u>		<u>26.56</u>
$\frac{1}{2}$ L "	<u>44.50</u>	<u>4</u>		<u>178.00</u>	<u>53.2</u>	<u>53.13</u>	<u>4</u>		<u>212.52</u>
F.P.	<u>100.00</u>	<u>1</u>		<u>100.00</u>	<u>120.0</u>	<u>120.00</u>	<u>1</u>		<u>120.00</u>
Total				<u>450.00</u>					<u>536.40</u>

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{450.00}{18} \left(.75 - \frac{.5069}{86.40} \right) = \frac{86.40}{18} \left(.75 - .00585 \right) = -2.43$

If limited on account of midship superstructure. -

If limited to maximum allowance of $1\frac{1}{2}$ ins. per 100 ft. -

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = 31.04

Summer freeboard = 6.02

Moulded draught (d) = 25.02

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 6.25 = 6.4

Addition for Winter North Atlantic Freeboard (if required) = -

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta = 11444$

Tons per inch immersion at summer load water line

$T = 41.55$

Deduction = $\frac{\Delta}{40T}$ inches = 6.89

= 7"

TABULAR FREEBOARD corrected for Flush Deck (if required)

	+	-
Depth Correction	<u>13.11</u>	
Deduction for superstructures		<u>14.55</u>
Sheer correction		<u>2.43</u>
Round of Beam correction		<u>.07</u>
Correction for Thickness of Deck amidships		
Other corrections, scantlings, etc.		
	<u>13.11</u>	<u>17.05</u>

Summer Freeboard = 72.19

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

Tropical Fresh Water Line above Centre of Disc	<u>13.2</u>
Fresh Water Line	<u>7"</u>
Tropical Line	<u>6.4</u>
Winter Line	<u>6.4</u>
Winter North Atlantic Line	

Tropical Fresh Water Freeboard	<u>4.11</u>
Fresh Water	<u>5.54</u>
Tropical	<u>5.6</u>
Winter	<u>6.62</u>
Winter North Atlantic	

14 JUL 1932

10 DEC 1936

13 MAY 1936

15 APR 1936

14 AUG 1934

RECEIVED 16 JUL 1932

Ardenhall

Particulars of fiddley, funnel and ventilator coamings:—

Engine straight strongly constructed of steel, with steel flaps
and billseyes. -
Funnel and ventilator coverings in good sound condition.
Fiddley gratings have hinged steel covers fitted. -

Particulars of Flush Bunker Scuttles:—

None.

Particulars of Companionways :—

none

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

on Forward hull deck:	6	21"	dia	x	32	x	36" high to holds.
" After " "	6	21"	dia	x	32	x	36" high to holds.
" Forecastle " "	2	21"	dia	x	32	x	30" high to holds.
	1	8"	dia	x	30	x	30" high to peak.
" Bridge Deck.	2	21"	dia	x	32	x	36" high to holds.
" Poop " "	1	6"	dia	x	32	x	18" " " on cover of tunnel escape hatch.

wood plugs & canvas covers for all ventilators.

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

on fore hull Deck.	2- 2½"	Swan necks,	35" high	to double bottom.
" aft "	2- 2½"	"	35" "	"
Port Deck.	1- 4"	Swan neck	11" high	to peak.
in fore castle Alley way,	1- 4"	"	11" "	"
" "	1- 2"	"	36" high	to double bottom.

Particulars of Gangway Cargo and Coaling Ports:—

none.

Particulars of Scuppers and Sanitary Discharge Pipes —

Four pipe scuffers each side in lower tween decks
leading to bilges.
none in Bridge space.

Particulars of Side Scuttles :


In Forecastle Crewspace, of good construction
and fitted with hinged deadlights.

Particulars of Guard Rails :—

on Field deck: 3'-3" high with 2 Rails + stanchions 4'-6" apart.
 Poop " 3'-3" " 3 Rails " 4'-6" -
 Bridge Strongly constructed steel bulkhead 3'-6" high -
 extending for full length of Bridge.

Particulars of Gangways, Lifelines, etc. :—

Lifelines fitted in forward and after wells, from forecassle to
Bridge, and from bridge to poop.

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	$\frac{108-0}{40-6}$ "	43" ✓	3-9" x 18" 	4 ✓	20.6 $\frac{1}{2}$ ft	$\frac{21.6}{22.0}$ $\frac{1}{2}$ ft
Forward Well	$\frac{92-2}{72-6}$ "	43" ✓	3-9" x 18" ✓	4 ✓	20.6 $\frac{1}{2}$ ft	$\frac{18.4}{18.3}$ $\frac{1}{2}$ ft

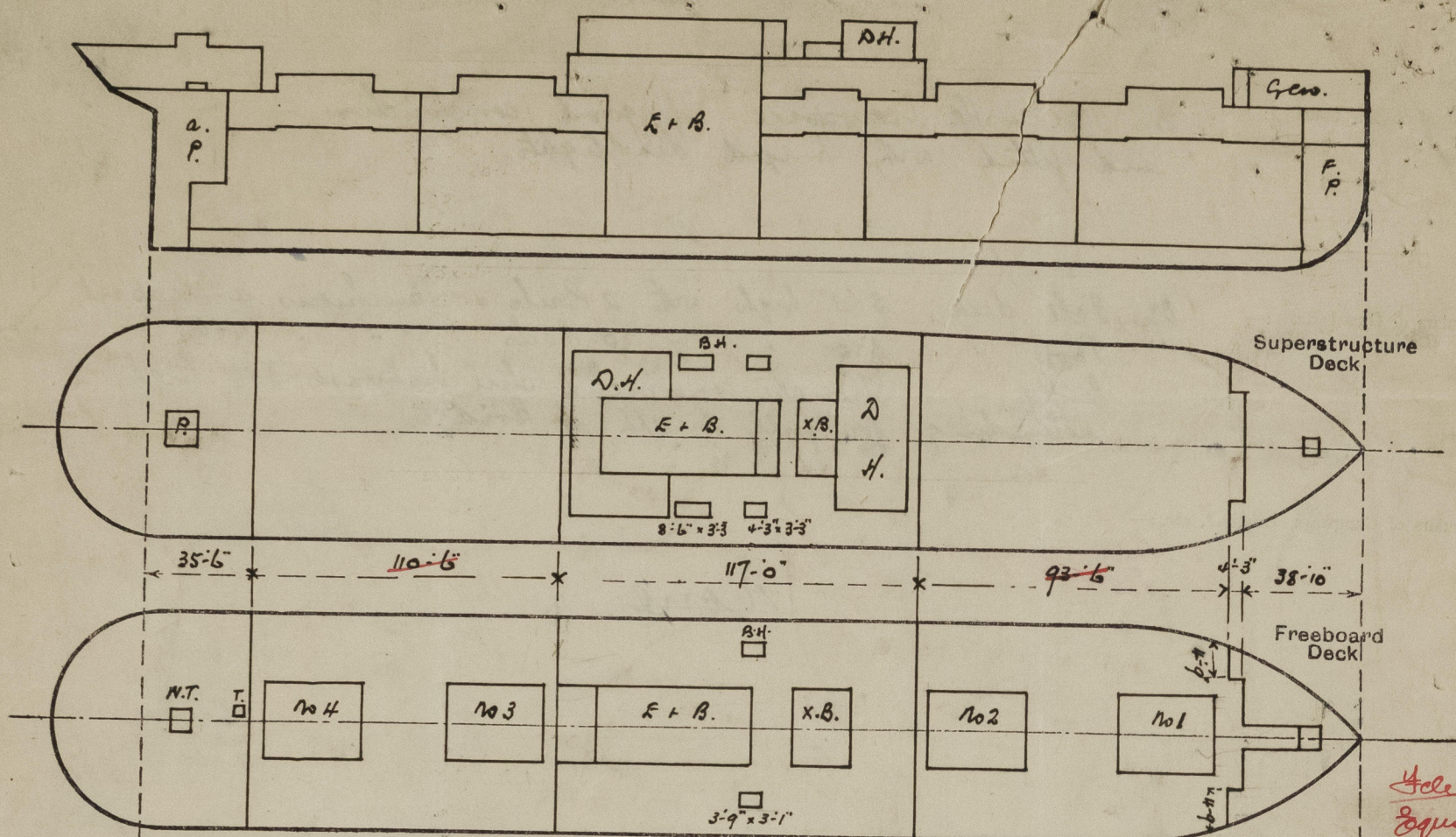
State position of each freeing port } After Well: — 8-3", 29-6", 50-0", 70-0" from Bridge Bld to center of ports.
 (F. and A. position and height above deck edge) } Forward Well: — 12-9", 30-0", 54-6", 74-0"
 State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such: — Two horizontal bars across.
 Height from deck edge 15".
 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 ... ..	.46 ✓	.38 ✓	6 x 3½ x .46 A ✓	24" ✓	none ✓	2-5'-0" x 3'-3" ✓	20" ✓	8'-0" ✓
Raised Quarter Deck Bulkhead ...	✓							
Bridge, After Bulkhead ... ..	.42 ✓	.42 ✓	4 x 3½ x .40 A ✓	30" ✓	none ✓	2-5'-3" x 3'-1" ✓	21" ✓	8'-0" ✓
Bridge, Forward Bulkhead ... ..	.44 ✓	.40 ✓	9 x 3½ x .56 J ✓	27" ✓	Brackets top & bottom ✓	2-5'-7" x 3'-6" ✓	19" ✓	8'-0" ✓
Forecastle Bulkhead ... ..	.38 ✓	.38 ✓	4 x 3 x .40 A ✓	30" ✓	none ✓	8-4'-6" x 24" ✓	20" ✓	8'-0" ✓
Trunk, Aft	✓							
Trunk, Forward	✓							
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	✓							
Exposed Machinery Casings on Super-structure Decks ... ..	.42 ✓	.35 ✓	3½ x 3 x .34 ✓	48" ✓	none ✓	3-4'-6" x 24" ✓	18" ✓	7'-6" ✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ... ..	.50 ✓	.35 ✓	3½ x 3 x .34 ✓	48" ✓	none ✓	2-4'-6" x 24" ✓ 1-4'-0" x 4'-0" ✓	20" ✓	8'-0" ✓
Deckhouses on Flush Deck Ships ...	✓							

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

Particulars of Closing Appliances (State in capsule of Closing Appliances)	
Poop Bulkhead	3" weather Boards in riveted channels full height.
Raised Quarter Deck Bulkhead ...	✓
Bridge, After Bulkhead	2 1/2" weather Boards in riveted channels full height.
Bridge, Forward Bulkhead	Hinged steel doors secured with 17 steel bolts with nuts outside.
Forecastle Bulkhead	Hinged steel doors with nuts manipulated both sides.
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	✓
Exposed Machinery Casings on Super-structure Decks	Hinged steel doors with nuts manipulated one side.
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	Hinged steel doors to fiddleys with nut fasteners. Hinged steel doors in halos to donkey bolers with nut fasteners manipulated one side only.
Deckhouses on Flush Deck Ships ...	✓

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:—



Trimmers escape hatches in Bridge Space 23" x 30" x 9" J, fitted with hinged wood covers and secured with toggles.
 Bunker hatches on Bridge Deck have coamings 31" high, Ribs 2 1/2", Covers 2 1/2", Thwarts ship, cleats 21" apart, and battens and 2 Tarpsaulins.
 Those in Bridge Space have 9" J coamings, covers & battening arrangements similar to deck above.

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

Measured in Dry Dock.

Hatch inside poop space 4'-0" x 4'-0" x 12" Coaming, fitted with steel plate cover, having 3/4" bolts spaced 3 1/2" apart.

Hatch on Forecastle deck 24" x 20" x 6" Coaming, fitted with hinged steel cover and toggle fasteners.

Hatch in Forecastle alleyway 3'-0" x 2'-8" x 12" Coaming, Ribs 2 1/2", Covers 3" Thwarts ship, no cleats fitted but fore & aft batten fitted.

Two Tarpsaulins & efficient battening and hinged steel cover with oval fasteners.

Drafts

Deadweight.

25'-0"	8150
23'-0"	7150
21'-0"	6175
19'-0"	5210
17'-0"	4240
15'-0"	3290.

Keel 2 1/2"

Summer load 25.02 = 25'-2 1/2" BK

Sub Δ @ 25' = 11340 TPI = 41.5

" " 25'-2 1/2" = 11340 + (2 1/2" x 41.5) = 11444

3883

Builder's name and yard number

Bartram & Sons Ltd Sunderland.

Names of sister ships.

Owners

W Hartlepool Ship Nav Co Ltd.

Fee

13 : 12 : 0.

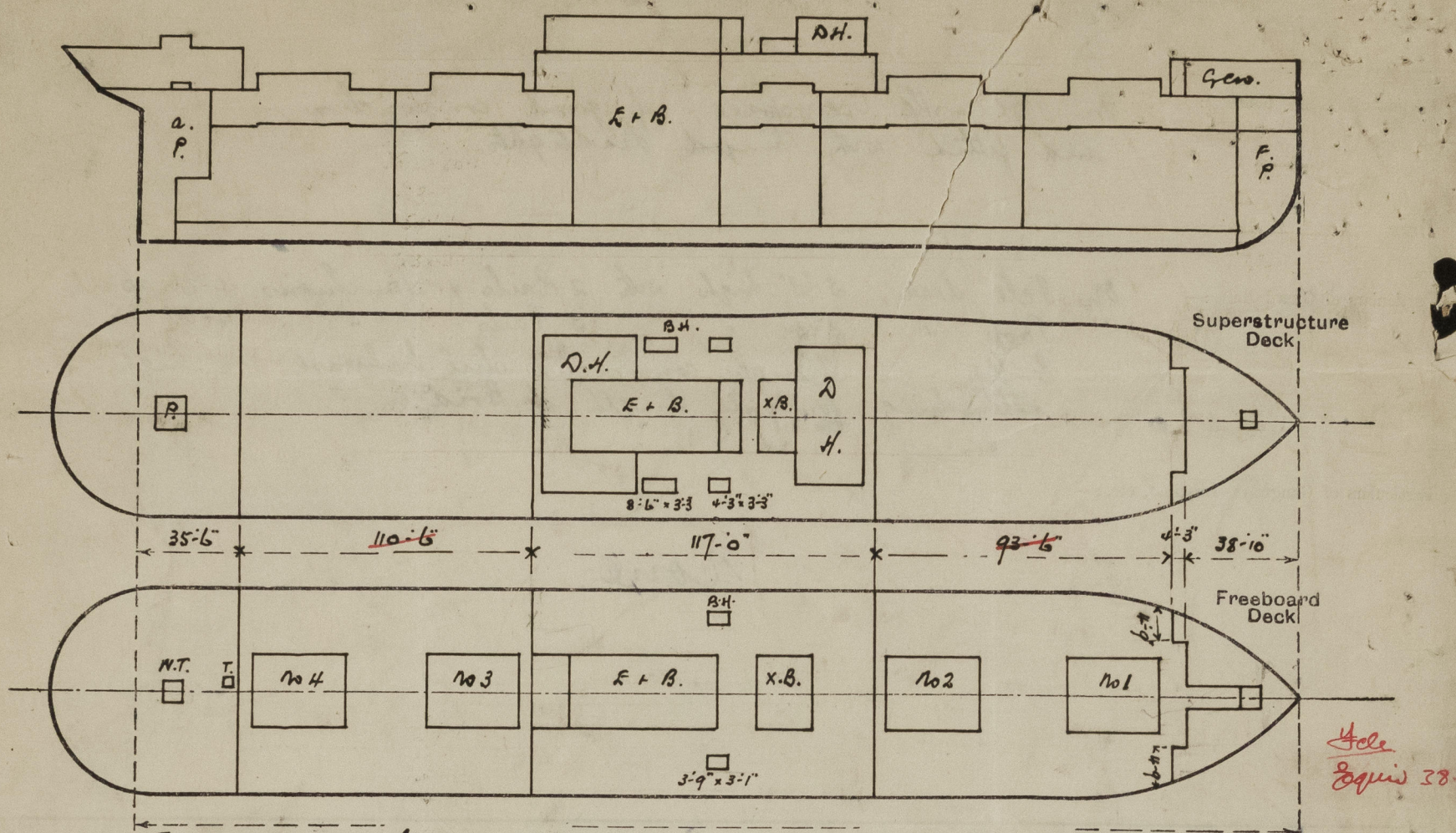
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Trimmers escape hatches in Bridge Space 23" x 30" x 9" J, fitted with hinged wood covers and secured with toggles.
 Bunkers hatches on Bridge Deck have coamings 31" high, Rets 2 1/2", Covers 2 1/2", Thwarts 3/4", cleats 21" apart, and battens and 2 Tarpaulins.
 Those in Bridge Space have 9" J coamings, covers & battening arrangements similar to deck above.

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

Measured in Dry Dock.

Hatch inside poop space 4'-0" x 4'-0" x 12" Coaming, fitted with steel plate cover, having 3/4" bolts spaced 3 1/2" apart.

Hatch on Forecastle deck 24" x 20" x 6" Coaming, fitted with hinged steel cover and toggle fasteners.

Hatch in forecaskle alleyway 3'-0" x 2'-8" x 12" Coaming, Rets 2 1/2", Covers 3" Thwarts 3/4", no cleats fitted but fore & aft batten fitted.

Trimmer escape hatch on Poop Deck 23" x 24" x 12" Coaming, Hinged steel cover with one fastener.

Drafts	Deadweight.
25'-0"	8150
23'-0"	7150
21'-0"	6175
19'-0"	5210
17'-0"	4240
15'-0"	3290.

Kel 2 1/2

Summer Wld 25.02 = 25'-2 1/2" BK

Sub Δ @ 25' = 11340 T.P.1 = 41.5

" " - 25'-2 1/2" = 11340 + (2 1/2" x 41.5) = 11444

3883