

Rpt. C.11.

Lloyd's Register of Shipping.  
SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker					Port of Survey <u>NEWCASTLE</u>
having					Date of Survey <u>12<sup>th</sup> SEPT. 1932</u>
(Type of Superstructures.)					Name of Surveyor <u>J. Young</u>
Ship's Name <u>INVERTYNE</u>	Nationality and Port of Registry <u>BRITISH LONDON</u>	Official Number <u>1450418</u>	Gross Tonnage <u>259</u>	Date of Build <u>1920</u>	Particulars of Classification <u>+ 100 A.I.</u> <u>Carrying oil fuel in bulk A.P. above 150° F. S.S. She No. 2-29</u>
Moulded Dimensions: Length <u>120.0</u> Breadth <u>23.0</u> Depth <u>10.0</u>					
Moulded displacement at moulded draught = 85 per cent. of moulded depth <u>489</u> tons					
Coefficient of fineness for use with Tables <u>.731</u>					
Depth for Freeboard (D)		Depth correction		Round of Beam correction	
Moulded depth ... .. <u>10.0</u>		(a) Where D is greater than Table depth (D-Table depth) R = <u>(10.04 - 8.00) . 923 = + 1.88"</u>		Moulded Breadth (B) <u>23.0</u>	
Stringer plate ... .. <u>.04</u>		(b) Where D is less than Table depth (if allowed) (Table depth-D) R =		Standard Round of Beam = $\frac{B \times 12}{50} =$ <u>5.52"</u>	
Sheathing on exposed deck $T \left( \frac{L-S}{L} \right) =$		If restricted by superstructures		Ship's Round of Beam = <u>6"</u>	
Depth for Freeboard (D) = <u>10.04</u>				Difference <u>.48"</u>	
				Restricted to	
				Correction = $\frac{\text{Diff}^{\circ}}{4} \times \left( 1 - \frac{S_1}{L} \right) = \frac{.48}{4} \times .5668 = -.07"$	

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ... ..	✓				
" overhang ... ..	✓				
R.Q.D. enclosed ... ..	✓				
" overhang ... ..	✓				
Bridge enclosed ... ..	✓				
" overhang aft ... ..	✓				
" overhang forward ... ..	✓				
Forecastle enclosed ... ..	<u>22.16</u>	<u>22.16</u>	<u>4.0"</u>	<u>14.16</u>	<u>14.78</u>
" overhang ... ..	<u>5.25</u>		<u>6.0</u>		<u>15.36</u>
Trunk aft ... ..					
" forward ... ..	<u>49.0</u>	<u>29.82</u>	<u>3.4"</u>	<u>3.33</u>	<u>16.55</u>
Tonnage opening aft ... ..					
" forward ... ..					
Total ... ..	<u>22.16</u>	<u>51.98</u>			<u>31.91</u>

Standard Height of Superstructure 6.00

" " R.Q.D.

Deduction for complete superstructure 18.00

Percentage covered  $\frac{S}{L} =$  18.47%

" "  $\frac{S_1}{L} =$  43.32%

" "  $\frac{E}{L} =$  26.59%

Percentage from Table, Line A. Tanker 18.22%

(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 = 18.00  $\times$  .1828 = 3.29

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate plotted	S	M	Product
A.P. ... ..	<u>22.00</u>	1		<u>22.00</u>	<u>20</u>	<u>19.50</u>	1		<u>19.50</u>
$\frac{1}{8}$ L from A.P. ... ..	<u>9.79</u>	4		<u>39.16</u>	<u>6</u>	<u>5.40</u>	4		<u>21.60</u>
$\frac{3}{8}$ L " ... ..	<u>2.42</u>	2		<u>4.84</u>	<u>-0.75</u>	<u>-0.90</u>	2		<u>-1.80</u>
Amidships ... ..		4			<u>0</u>		4		
$\frac{5}{8}$ L from F.P. ... ..	<u>4.84</u>	2		<u>9.68</u>	<u>7</u>	<u>8.90</u>	2		<u>11.72</u>
$\frac{7}{8}$ L " ... ..	<u>19.58</u>	4		<u>78.32</u>	<u>24</u>	<u>25.40</u>	4		<u>84.20</u>
F.P. ... ..	<u>44.00</u>	1		<u>44.00</u>	<u>48</u>	<u>48.00</u>	1		<u>45.01</u>
Total ... ..				<u>198.00</u>					<u>180.23</u>

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{17.77}{18} \left( .75 - .0923 \right) = + .65"$

If limited on account of midship superstructure.

Mean actual sheer aft = Deficient (.563)

Mean standard sheer aft

Mean actual sheer forward = Excess

Mean standard sheer forward

Length of enclosed superstructure forward of amidships =

" " aft of " =

Standard Sheer aft. Actual.

22.00	1	22.00	19.50	1	19.50
9.79	3	29.37	5.40	3	16.20
2.42	3	7.26	-0.90	3	-2.70
		58.63			33.00

.563 of Standard.

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 = 10.04 Ft.

Summer freeboard = .96

Moulded draught (d) = 9.08

## Deduction for Tropical freeboard and addition for

Winter freeboard =  $\frac{d}{4}$  inches = 2.27 = 2 $\frac{1}{4}$ "

Addition for Winter North Atlantic Freeboard (if required) = 2"

## Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta =$  8 tons

Tons per inch immersion at summer load water line

T =

Deduction =  $\frac{\Delta}{40T}$  inches = 2 $\frac{1}{4}$ "

## TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

	+	-
Depth Correction ... ..	<u>1.88</u>	
Deduction for superstructures ... ..		<u>3.29</u>
Sheer correction ... ..	<u>.65</u>	
Round of Beam correction ... ..		<u>.07</u>
Correction for Thickness of Deck amidships ... ..		
Other corrections, scantlings, etc. ... ..		<u>.42</u>
	<u>2.53</u>	<u>3.76</u>

Summer Freeboard = 11.8256

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

Tropical Fresh Water Line above Centre of Disc ... ..	<u>4<math>\frac{1}{2}</math>"</u>	Tropical Fresh Water Freeboard ... ..	<u>0' 11<math>\frac{1}{2}</math>"</u>
Fresh Water Line " " ... ..	<u>2<math>\frac{1}{4}</math>"</u>	Fresh Water " " ... ..	<u>0' 7"</u>
Tropical Line " " ... ..	<u>2<math>\frac{1}{4}</math>"</u>	Tropical " " ... ..	<u>0' 9<math>\frac{1}{4}</math>"</u>
Winter Line below " " ... ..	<u>2<math>\frac{1}{4}</math>"</u>	Winter " " ... ..	<u>0' 9<math>\frac{1}{4}</math>"</u>
Winter North Atlantic Line " " ... ..	<u>4<math>\frac{1}{4}</math>"</u>	Winter North Atlantic " " ... ..	<u>1' 1<math>\frac{3}{4}</math>"</u>



# PARTICULARS OF PROTECTION TO OPENING ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway	OIL CARGO HATCHES	COFFERDAM	FOCLE TO F.P. STORE						
Dimensions of Hatchway	2'-6" x 2'-6"	1'-11" x 1'-3"	24" DIAM.						
COAMINGS	Height above Deck ... 13" -	5' -							
	Thickness { Sides ... .40 -	.40 -							
	Stiffeners ...								
	Brackets, Stays ...								
HATCH BEAMS	Number ... 4 OFF								
	Spacing ...								
	Scantling and Sketch ...								
	Bearing Surface ...								
FORE AND AFTERS	Number ...								
	Spacing ...								
	Unsupported Lengths ...								
	Scantling* and Sketch ...								
	Bearing Surface ...								
HATCH COVERS	Material ... STEEL	STEEL	STEEL						
	Thickness ... .40	.40	FLUSH						
	How fitted ... HINGED W.T.	HINGED W.T.	SCUTTLE						
	Bearing Surface ... 8-3/4 T.B.s.	5-3/4 T.B.s.	NO FASTENING						
Spacing of Cleats									
Number of Tarpaulins									

\*Are wood fore and afters steel shod at all bearing surfaces?  
 Are battens and wedges efficient and in good condition?  
 Are tarpaulins in good condition and in accordance with rule requirements?  
 Are lashings provided in accordance with rule requirements?

Particulars of fiddle, funnel and ventilator coamings:—

Fiddle Gratings protected by Hinged steel covers  
 Funnel and Vents in efficient condition  
 E.R. Skylight well constructed of steel.

Particulars of Flush Bunker Scuttles:—

None.

Particulars of Companionways:—

Entrance to Pump Room. well built of steel  
 Opening 22" x 4'-6" Sill 28"  
 Door Hinged Steel operated one side and in addition secured by  
 many bolts 22" apart not thro door.  
 Entrance to E.R. on Casing Top well built of Steel  
 Opening 22" x 4'-6" Sill 12". Hinged Steel Door operated both sides.

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

Focle Dk to Accom. 6" diam 15" high (3)  
 Upper Dk to Pump Room 12" . 3'-0"  
 " " to Cofferdam 12" . 3'-0"  
 Ventilators closed by wood plugs & canvas covers.

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

Focle to Fore Peak. 2" diam. 8" high to mouth  
 Upper Dk to Aft Peak 2" " 8" " "  
 Air pipes closed by wood plugs.

Particulars of Gangway Cargo and Coaling Ports:—

None.



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Particulars of Scuppers and Sanitary Discharge Pipes:—

Weather Deck scuppers all thro deck and shell.  
Sanitary Discharge forward iron pipe fitted with storm valve.

Particulars of Side Scuttles:—

7" Diam in Crew Space and all fitted with hinged iron deadlight.

Particulars of Guard Rails:—

Forecastle, 3'-0" high Stanchions 4'-0" apart. 2 Rails.  
U.D. Bulwarks. 4'-1" high. Stays 6" B.P. 5'-3" apart. Rail 4"x 2 1/2" B.A.

Particulars of Gangways, Lifelines, etc.:—

Lifeline from Bridge to Forecastle. 2 1/4" S.W.R.  
Stanchions on Trunk top 3'-2" high Spaced 8'-6" to 11'-0"

Particulars of Freeing Arrangements.

	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
Upper Deck After Well ... ..	95'-0"	4'-1"	2'-6" x 1'-3"	5	15.625 sq ft	97 sq ft by 50% open rails
Forward Well ... ..						
State position of each freeing port ... .. } After Well:— From Fore Sidehouse. 11'-3", 32'-0", 53'-0", 65'-0", 75'-6" (F. and A. position and height above deck edge) } Forward Well:— State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— 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 ... ..								
Raised Quarter Deck Bulkhead ...								
Bridge, After Bulkhead ... ..								
Bridge, Forward Bulkhead ... ..								
Forecastle Bulkhead ... ..	.25	.25	4"x3"x40	2'-0"	NONE	1'-9" x 4'-7"	11"	4'-0"
Trunk, Aft ... ..								
Trunk, Forward ... ..	.45	TOP .30	NOT	ACCESSIBLE		W.T. HATCHES.		3'-4" TO 4'-0"
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	.35	.25	2 1/2 x 2 1/2 x 30	2'-7"	BKTS TOP.	1'-9" x 4'-7"	19"	6'-7"
Exposed Machinery Casings on Super-structure Decks ... ..								
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ... ..								
Deckhouses on Flush Deck Ships ...								

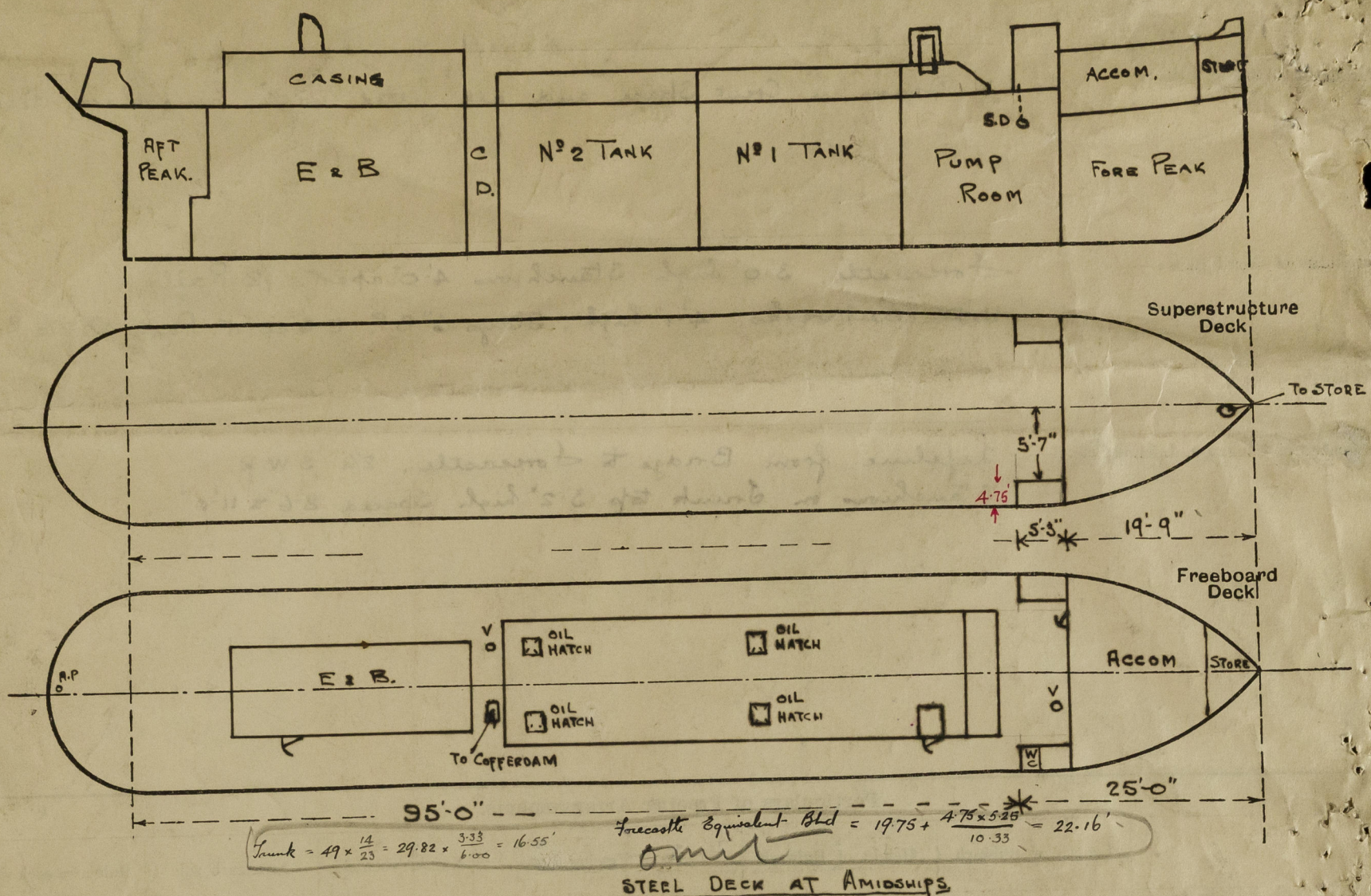
Particulars of Closing Appliances (state if capable of being manipulated from both sides).

Poop Bulkhead ... ..	✓	
Raised Quarter Deck Bulkhead ...	✓	
Bridge, After Bulkhead ... ..	✓	
Bridge, Forward Bulkhead ... ..	✓	
Forecastle Bulkhead ... ..		Hinged Teak Door. 1 1/2" framed 1" Panels Operated both sides.
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...		Hinged Steel Door. W.T. Secured by 9/8" bolts 5 1/2" apart.
Exposed Machinery Casings on Super-structure Decks ... ..	✓	
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ... ..	✓	
Deckhouses on Flush Deck Ships ...	✓	



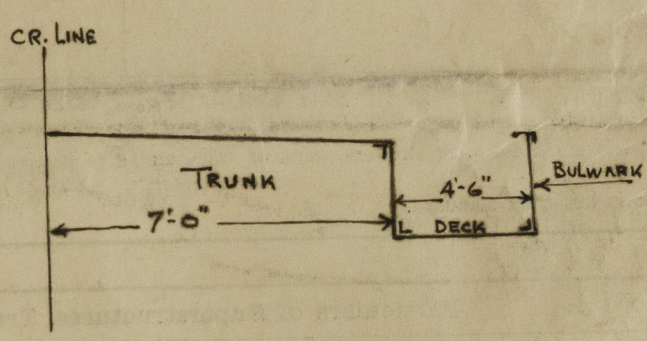
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coal: Superstructure bulkheads, trunks, deckhouses, casings, cargo and coaling hatchways, extent and thickness of sheathing on the freeboard deck, gangway, cargo and  
ing ports, and any other openings, etc., which would affect the seaworthiness of the ship are to be shewn on the following sketches:—



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

VESSEL WAS SURVEYED IN DRY DOCK  
WHEN IN FOR CONDITION SURVEY ONLY.



Builder's name and yard number H. SCARR LTD HESSLE N° 259

Names of sister ships \_\_\_\_\_

Owners BRITISH MEXICAN PETROLEUM CO. LTD (F. J. Wolfe)

Fee £ 3 : 8 : 0 Received by me \_\_\_\_\_

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