

# THE BRITISH CORPORATION REGISTER OF SHIPPING AND AIRCRAFT

## SURVEY FOR FREEBOARD

STEAMER, TANKER, SAILER, ~~EMPIRE~~ TROTWOOD

WITH  
WITHOUT TIMBER DECK CARGO

Nationality BRITISH Builders' Name and No. of Ship Grangemouth Dry Co., Grangemouth No 455  
Port of Registry GRANGEMOUTH LONDON Owners MOWT. J. J. Lorrain & Son. (Mans)  
Official Number 180356 Gross Tonnage 797.46 810 M.O.T. 17.5.52. KUWAIT OIL CO LTD. LONDON  
Date of Build MAY 1944 Port and Date of survey Grangemouth 17  
Name of Surveyor P. R. Johnston  
Particulars of Classification B.S. (Bulk Oil Carrier) Names of Sister Ships Emp. Arthur, Gwynne, Diamond, etc. Harlow, Wharfedale  
Type of Superstructures Forecastle & Poop

Trade of Ship

Service Endorsement if any

Tanner

SUMMER FREEBOARD recommended amidships from centre of disc to top of deck line, (.....wood.....steel)

TROPICAL FRESH WATER LINE above centre of disc	6 1/2	Corresponding Freeboard	0 - 11 1/2"
FRESH WATER LINE " " "	3 1/2	" "	0 - 5
TROPICAL LINE " " "	3	" "	0 - 8
WINTER LINE below " "	3	" "	0 - 8 1/2
WINTER NORTH ATLANTIC LINE " " "	5	" "	1 - 2 1/2
		" "	1 - 4 1/2

SUMMER TIMBER FREEBOARD recommended amidships from top of deck line

TROPICAL FRESH WATER Timber line above L.S.		Corresponding Freeboard	
FRESH WATER " " " "		" "	
TROPICAL " " " "		" "	
WINTER " " below "		" "	
WINTER NORTH ATLANTIC " " " "		" "	

Number of years recommended for load line certificate

The scantlings and protective arrangements being in accordance with the Load Line Rules it is submitted that the freeboards be assigned

Chief Surveyor

Passed at a meeting of the Committee of Management of the British Corporation Register of Shipping and Aircraft

on the 1st March 1944

Secretary



## COMPUTATION OF FREEBOARD

Length on summer load line  $190'-0"$  Moulded Breadth  $30'-6"$  Moulded Depth  $13'-11\frac{7}{8}"$  Depth of Keel  $.48$   
 Moulded displacement (ex bossing) at moulded draught of 85 per cent. of moulded depth  $1387$  Tons  
 Co-efficient of fineness for use with tables  $\frac{\Delta \times 35}{L \times B \times D \times .85} = 7047$   
 Displacement and tons per inch immersion in salt water at summer load line  $1556$   $\frac{11.40 \text{ T.P.I.}}{40} = 3\frac{1}{2}$  inches  
 Moulded depth  $13.990$  Deduction for Fresh Water  $\frac{\Delta}{40T} = 3\frac{1}{2}$  inches  
 Stringer Plate  $.40"$  Round of Beam Correction  $.033$   
 Sheathing on exposed deck T  $(\frac{L-S}{L})$   $-$  Ships Round of Beam  $7.50$  inches  
 Rise of floor (in sailers)  $-$  Standard Round of Beam  $\frac{B \times 12}{50} = 7.32$   
 Depth for Freeboard (D)  $19.023$  Difference  $.18$   
 Table Depth  $1\frac{1}{16}$   $12.667$   
 Depth Correction  $1\frac{1}{16} \times 30 \times$   $1.356$   
 If restricted by superstructures  $= 1.982 \text{ ON}$   $.045 \times 2948 = .01 \text{ OFF}$

	Enclosed Length	Length of Overhang	Height	Mean Covered Length (S)	Height Correction	Effective Length (E)
Poop	67'-8"		7'-6"	65.81	-	67.00
Raised Quarter Deck	65'-4"					
Bridge		F				
		A				
Forecastle	20'-8"		6'-10"	20.69		20.69
Trunk Aft						
" Forward	101'-7"		3'-6"	$\frac{3.5 \times 14.25}{6 \times 30.5}$		27.70
Tonnage Opening Aft						
" " Forward						
Totals				86.50		115.45

Station	Actual Sheer	Standard Sheer	Effective Sheer	S.M.	Product
A.P.	29' 1/16"	29.00	29.06	1	29.06
1/2 L from A.P.	10' 1/16"	12.91	10.44	4	41.76
1/2 L from A.P.	-	3.19	-	2	-
Amidships	-	-	-	4	-
1/2 L from F.P.	-	6.38	-	2	-
1/2 L " "	23' 3/8"	25.81	23.38	4	93.52
F.P.	57' 1/2"	58.00	57.50	1	57.50
				18	221.84
Effective Mean Sheer					12.324
Standard " " .05L + 5					14.500
Difference					2.176

Mean Actual sheer aft = LESS THAN 1  
 Mean Actual sheer forward = LESS THAN 1  
 Length of enclosed superstructure forward of amidships = Length of Ship  
 Length of enclosed superstructure aft of amidships = Length of Ship  
 Sheer Correction = Difference  $\times (.75 - \frac{S}{2L}) = 2.176 \times 5224 = 1.140 \text{ ON}$   
 If limited on account of midship superstructure =  
 to maximum allowance of  $1\frac{1}{2}$  ins. per 100 ft. =

TABULAR FREEBOARD corrected for flush deck if required = 21.50

Correction for co-efficient =  $\frac{1.3847}{1.36} = 21.89$  DRAUGHTS AND SEASONAL CORRECTIONS

	+	-	Sailor, Tanker, Steamers	Timber
Depth correction	1.99	-		
Deduction for superstructures	-	13.21		
Sheer correction	1.14	-		
Round of Beam correction	-	.01		
Correction for thickness of deck amidships	-	-		
Other corrections, scantlings, etc.	-	-		
	3.12	13.22	10.10	
Summer Freeboard in Inches	$S = 11\frac{1}{2}$			
Additional allowance for superstructures on Timber carrying ships	=			
Summer Timber Freeboard in Inches	=			
Depth to Freeboard Deck in feet			14.023	
Summer Freeboard in feet			.958	
Moulded Draught (d)			13.065	(d1)
Addition for Keel			.040	
Extreme draught			13.105	
Deduction for Tropical and addition for Winter freeboard $d/4 = 3.266$ ins.				
Addition for Winter North Atlantic (if required)			5.165	
Deduction for Tropical Timber Freeboard $\frac{d}{4} =$ ins.				
Addition for Winter " " $\frac{d}{3} =$ ins.				
" " N.A. Timber Freeboard (if required) = ins.				

Form LL. 4.D.

# THE BRITISH CORPORATION REGISTER OF SHIPPING AND AIRCRAFT

## SURVEY FOR FREEBOARD

### CONDITIONS OF ASSIGNMENT

SHIPS NAME "EMPIRE TROTWOOD"

OFFICIAL NUMBER 180356

Nationality and Port of Registry BRITISH

FRANGEMOUTH

## PARTICULARS OF SUPERSTRUCTURES, TRUNKS, CASINGS, DECKHOUSES

	Coaming	Plating	Stiffeners	Spacing	End Attachments	No. and size of Openings	Height of Sills	Height of Casings
Poop Bulkhead	✓	.30"	7" x 3" x .38 Bt	30"	Bkt	✓	✓	7'-6"
R.Q.D. "	✓							
Bridge Aft Bulkhead	✓							
" Forward "	✓							
Forecastle Bulkhead	✓	.26"	3" x 2 1/2" x 28	27"	✓	2' 4"-6' x 2'-0"	15"	6'-0"
Trunk, Aft		.28"						
" Forward								
Exposed Machinery Casings on Freeboard or R.Q. Decks	✓							
Exposed Machinery Casings on superstructure decks	✓							
Machinery Casings within Superstructures not fitted with Cl. 1 closing appliances	✓							
Deckhouses on flush deck ships	✓							

## PARTICULARS OF CLOSING APPLIANCES (state if capable of being manipulated from both sides)

Poop Bulkhead	NO OPENINGS.
R.Q.D. "	✓
Bridge Aft Bulkhead	✓
" Forward "	✓
Forecastle Bulkhead	W.T. HINGED STEEL DOORS.
Exposed Machinery Casings on Freeboard or R.Q. decks	✓
Exposed Machinery Casings on superstructure decks	✓
Machinery Casings within superstructures not fitted with Cl. 1 Closing Appliances	✓
Deck houses on Flush Deck ships	✓

## PARTICULARS OF FREEING ARRANGEMENTS

	Length of Bulwark	Height of Bulwark	No. and size of Freeing Ports each side	Area each side	Rule Area
After Well					
Forward Well					

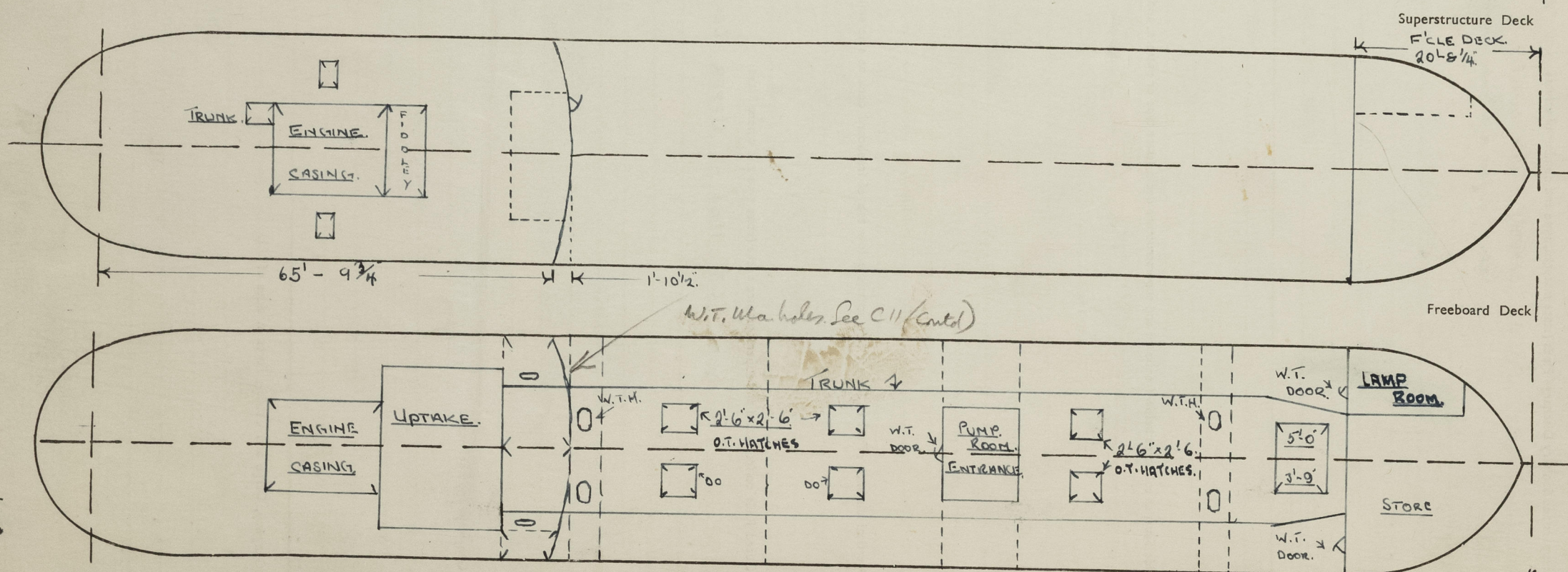
State fore and aft position and height above deck to bottom of port, for each port  
 After Well  
 Forward Well

State whether freeing ports are fitted with shutters, bars or rails, and give particulars

Give particulars of freeing port area, etc., on superstructure decks



Position and dimensions of superstructure bulkhreads and openings, extent and thickness of wood sheathing in wells, position of cargo and coaling hatchways, gangway, cargo and coaling ports, freeing ports, ventilators to spaces below freeboard deck and fully enclosed superstructures, companionways, etc., which affect the freeboard of the ship.



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Number and description of Hatchway from forward		P&S			
Dimensions of Hatchway		No 1 TANK	No 2 TANK	No 3. TANK	
COAMINGS	Height above } steel { deck } wood {	5'-0" x 3'-9"	2'-6" x 2'-6"	✓	✓
	Thickness { sides } ends	18"	9"	✓	✓
	Stiffeners	AA	9 x 3 x 38 B.A.	✓	✓
HATCH BEAMS	Brackets or Stays				
	Number				
	Spacing				
	Scantling and Sketch				
FORE AND AFTERS	Bearing Surface and thickness of carriers or sockets				
	Number				
	Spacing				
	Unsupported lengths				
	Scantling and Sketch				
HATCH COVERS	Bearing Surface and thickness of carriers or sockets				
	Material	3/8" STEEL	✓	✓	✓
	Thickness	COVER SECURED	✓	✓	✓
	How Fitted	By 8 TOEGLES			
Bearing Surface		2 off which act as hinges			
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?



Give full particulars of the following :—

Fiddley, Funnel and Vent Coamings, Engine Room skylight and other openings in Machinery Casing tops and their means of closing (state height of coamings, type of fiddley covers, and if these are permanently attached in their proper positions)

ENGINE room skylight 12" Coaming Hinged steel covers operated by quadrant.

Flush Bunker Scuttles on freeboard and superstructure decks (state material, type of joints, etc., and if secured by hinge or permanent chain attachment)

Companionways on freeboard and superstructure decks (state material, height of doorway sills, type of doors, and if these can be closed and secured from both sides)

W.T. Hinged steel doors to pump room  
& Bridge Space aft - Operated both sides

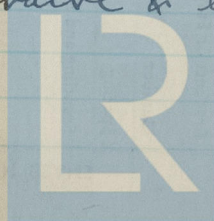
Ventilators in exposed positions on freeboard, raised quarter and superstructure decks to spaces below freeboard decks and fully enclosed superstructures enclosed by Class 1 appliances (state height of steel coamings, pitch of rivets in deck connection, type of closing arrangements)

Vents to accom<sup>e</sup> in Bridge Space 6" Dia  
18" x 30" coamings welded to deck

Airpipes in exposed positions on freeboard, raised quarter and superstructure decks (state height to opening and if satisfactory closing arrangements are provided)

F.P.	1 OFF	18"	WOOD	Pluto.
A.P.	1 OFF	18"	"	"
Cofferdams	4 OFF	24"	"	"

Air Pipes to Cargo Tanks in Common Main with relief valve & led to Mast



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Scuppers and Sanitary Discharge Pipes (state material, type and number of valves)

SANITARY DISCHARGES.  
GALV pipes & Brass Storm Valves.

Side Scuttles to spaces below freeboard and superstructure decks (state type or pattern, and if permanent or portable deadlights are supplied)

10" Dia Brass frames & Brass Hinged deadlights  
16" " " " " " "

Vertical distance of sill of lowest side scuttle below top of freeboard deck at side amidships

Guard Rails on freeboard and superstructure decks (state type and where fitted)

3 RDS 3'-3" HIGH - UPPER DECK TRUNK & FORECASTLE

Gangways and Lifelines

Gangway, Cargo and Coaling Ports in sides of ship

SUPPLEMENTARY REQUIREMENTS FOR STEAMER CARRYING TIMBER DECK CARGOES

Do Superstructure and Machinery Casings comply with rules?

Is provision made for protection of steering gear?

Is emergency steering gear provided?

Are efficient sockets and eyes for lashings provided and properly spaced?

State particulars of longitudinal subdivision in double bottom

State particulars of Bulwarks and Rails

Particulars of any Special Features in the construction of the Ship

Endorsement at first survey and at surveys for Renewal of Certificate:—

The fittings and appliances are in accordance with the particulars shown in the form and are in good condition



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