

NOTE: THIS VESSEL IS A REPEAT OF THE
"EMPIRE OPAL" AND "EMPIRE PEARL"

No. 2953

THE BRITISH CORPORATION REGISTER
OF SHIPPING AND AIRCRAFT

Report No. 2185 No. in Register Book 2893.

ex "NORHOLM"

Ship ^{ex} "EMPIRE DAVID" ~~now~~ NORHOLM
N.N. "HAUKEFJELL"

Builder SIR JAMES LAING & SONS. LTD.

Yard No. 738.

✓ HULL AND EQUIPMENT

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002142-002448-0212

THE BRITISH CORPORATION REGISTER
OF SHIPPING AND AIRCRAFT

Report No. No. in Register Book 3185

Received at Head Office 8/1/42

Surveyor's Report on the Construction of the
~~Single Triple~~ ~~Twin Quadruple~~ Screw TANKER EMPIRE DAVID

Surveyor's District SUNDERLAND WITH SOUTH SHIELDS & SEAHAM HARBOUR
Builders SIR JAMES LAING & SONS LTD. SUNDERLAND
Yard No. 738 Where Built SUNDERLAND
Owners THE MINISTRY OF WAR TRANSPORT
Port of Registry SUNDERLAND O/S Flag BRITISH
Managers THE EAGLE OIL & SHIPPING CO. LTD.
Manager's Address 16, FINSBURY CIRCUS, LONDON E.C.2.
Official No. 169002 ✓
Rlg NOT RIGGED Code Letters BR B.C.R.P.
Scantling Sections approved by Committee SEE TEXT
To be classed B. S * (BULK OIL CARRIER)
With a Freeboard of 8'-0" (DEEPER LOADING ENDORSEMENT SUPPLIED)
Date of First Visit 4-12-40
Date of Last Visit 15-12-41
Total number of Visits 201
Keel Laid 6-3-41
Date of Build 12/41
Launched 10-9-41
Date of this Report 12/41

PARTICULARS

Registered Dimensions

484' + 68'3" + 36'15"

Tonnages—

Tons.

Under Tonnage Deck

In "Tween Decks

In "Tween Decks

In "Tween Decks

In Turret

Suez Canal Tonnage—

Under Deck Tonnage

8894.78

Tonnage in Poop

265.2

" R.Q.D.

" Bridge

" Forecastle

" Hatchways

" Deck Houses

" Chart Houses

" Light and Air Spaces

368.17

285.19

Gross Tonnage

9813.34

Deductions—

Crew Space

Engine Room

Masters Space

Light and Air

Chart Space

Navigation Spaces and Stores

Wireless Space

Peak Tanks

Boys' Rooms

Boys' Rooms

Pump Spaces

W.B. Spaces

%

498.12

3140.27

19.78

8.87

0.88

29.43

40.98

285.31

4031.64

Net Registered Tonnage

5781.70

Date of Expiry of Vessel's B.O.T. Passenger Certificate

PARTICULARS—Continued.

Moulded Dimensions

476' 11 1/2" + 68'0" + 36'0"

Height of Superstructure

Proportions $\frac{L}{B} =$ $\frac{L}{D} =$ $\frac{D}{B}$ $\frac{L}{D \text{ (to top of Superstructure)}} =$

Camber

17"

Rise of Floor

1"

Number and Description of Decks for Register Book

Number of Decks under Freeboard Deck

NONE

above

FORECASTLE AND POOP

Heights of "Tween Decks

Particulars of Superstructures

FORECASTLE DECK 34'6" WITH TWO TONNAGE

OPENINGS 4'1" 3'1"

POOP DECK WITH EXTENDED FRONT

109'1 1/2" AT SIDE 115'3" AT CENTRE.

Distance between Bulkheads of Superstructures

Freeboard Ratios of Superstructures

Watertight Bulkheads.—State Number of Frame and Deck to which each Bulkhead extends—See page 5.

Bulkhead, Frame No.	extends to	Deck.	Bulkhead, Frame No.	extends to	Deck.
Fore Peak	"	"	No. 8	"	"
No. 1	"	"	" 9	"	"
" 2	"	"	" 10	"	"
" 3	"	"	" 11	"	"
" 4	"	"	" 12	"	"
" 5	"	"	" 13	"	"
" 6	"	"	" 14	"	"
" 7	"	"	After Peak	"	"

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PARTICULARS—Continued.

State which Bulkheads enclose Machinery Space *Nº 8 AND 8½ TO Nº 33 E.R.*
Nº 33 TO Nº 44 B.R.

State Number of Bulkheads to be recorded as effective *13 (1 W.T. 12.0.7)*

Number and Length of effective Watertight Compartments beginning Forward

Number of Non-Watertight Bulkheads

Double Bottom Extends from Frame *8* to Frame *44*

Length and Capacity of Tanks

No.	Feet	Tons. S.W.	Fore Peak	Feet	Tons. S.W.
<i>FEED WATER 32'9½'</i>	<i>70.0</i>		<i>28'-0'</i>	<i>327</i>	
2	"	"	<i>Aft Peak 17'-3'</i>	<i>205</i>	<i>S.W.</i>
3	"	"	Deep Tanks	"	"
4	"	"			
5	"	"			
6	"	"	Oil Bunkers <i>31'-1'</i>	<i>565</i>	<i>38½/TON.</i>
7	"	"	<i>CROSS P 9'-0'</i>	<i>256</i>	
8	"	"	<i>- 5 9'-0'</i>	<i>256</i>	
9	"	"			
10	"	"			

Particulars of Oil Fuel Tanks in Double Bottom.

State where Centre Girdler Watertight

BOILER RM. TANK 27'6" 383 TONS @ 38½/TON
E. P. TANK 19'10½" 80 - - - -

Sketch showing Arrangement of Bulkheads, Tanks, &c.



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SCANTLING

SECTIONS.



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SKETCHES OF FORE AND AFTER PEAK STRUCTURE

WHERE DETAIL PLANS AS BUILT ARE NOT AVAILABLE.



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PARTICULARS OF SCANTLINGS, ETC.

Where it is subsequently stated in this report that any portion of the structure is in accordance with Plans, and particulars are therefore not detailed, the name of plan is to be entered in the appropriate place. Such plans should in all cases represent the structure as built.

All differences from approved Plans and/or the Rules are to be recorded in this report, together with any necessary explanatory Sketches.

Where no detailed Plan is on record, full particulars of Scantlings, Construction and Riveting are to be reported, in conjunction with such Sketches as are necessary for clearness.

Where riveting is in exact accordance with the approved Plans and/or Rules this is to be stated in each case, and particulars of any departure therefrom are to be detailed in all cases.

GENERAL.

MATERIAL.

In the case of **Steel Ships** state particulars of Parts where Iron is used

In the case of **Wood Ships** state particulars of Wood used in different parts

In the case of **Reinforced Concrete Ships** state particulars of Concrete used in different parts and also Nature

and Quality of Reinforcement

State, to the best of your knowledge, whether the Materials used have been tested, and are in accordance with

the Rule requirements **YES. TESTED AT MAKERS' WORKS.**

Give particulars of all Tests carried out under your supervision or date of your Report thereon.

FROM SATISFACTORY MECHANICAL AND SEGREGATION TESTS CARRIED OUT ON RIVETS.

AMERICAN STEEL USED FOR THE FOLLOWING ITEMS.

GEN'L GIRDER	3 1/2" x 3 1/2"	ANGLES
TRANSVERSES	3 1/2" x 3 1/2"	-
E.P. FLOOR FRAMES	3 1/2" x 3 1/2"	-
E.P. GIRDER	3 1/2" x 3 1/2"	-
- - REV. FRAMES	3 1/2" x 3 1/2"	-
TRANSVERSES	3" x 3"	-
LONGITUDINAL AND SHELL CONNS.		
AT PEAK STRINGER	3 1/2" x 3 1/2"	ANGLES
FOR INTERCOSTAL GIRDERS	3" x 3"	-
BRACKET CONNS. TO SHELL AND DECK	3 1/2" x 3 1/2"	-
COCKPIT TIE CONNS.	3 1/2" x 3 1/2"	-
ALL 6 1/2" x 6 1/2" TEE BARS IN SHIP		
AT PEAK RIGGING	3 1/2" x 3 1/2"	ANGLES
CHAIN LOCKER AND	3" x 3"	-
FOR. STRINGER	3" x 3"	-
DEEP TANK GIRDER	3" x 3"	-
BRIDGE OK. HOUSE	3" x 3"	-
PUMP ROOM ENTRANCE	3 1/2" x 3 1/2" AND 3" x 3"	-
UPPER BRIDGE OK. SUPPORTS	3 1/2" x 3 1/2" AND 3" x 3"	-
CAPTAIN'S DECKHOUSE	3" x 3"	-
CHART AND WHEELHOUSE	3 1/2" x 3 1/2" AND 3" x 3"	-
ENGINEERS' DECKHOUSE	3" x 3"	-

GENERAL—Continued.

POOD DECK C STRAKS PLATE NOS 2, 4, 5, 6

D A.

GIRDER KNEES TO WING O.T. AND NOS 50, 56, 69, 75

O.T. HATCH WDS

CASING PLATES NO 1, 3, 8, 9, 10, 12, 18, 23, 29.

SATISFACTORY SEGREGATION TESTS CARRIED OUT ON AMERICAN STEEL.

KEELS, STEMS, STERN FRAMES, AND RUDDERS.

State particulars, which do not appear on reference Plans, of Dimensions; Scarphs of Bar Keels; Stems; Stern Frames; Butts of Flat Plate Keels; Connections at Heel of Stems and Stern Frames to Hull; Rudder Stocks, Couplings, Pintles, Gudgeons, Rudder Arms, Riveting; and whether forged or cast; Arrangement and Scantlings of Spectacle Bossing or Propeller Brackets and state material.

State whether particulars not given are in accordance with approved Plans.

State name of approved Plans and date of approval.

FABRICATED STERN FRAME AND RUDDER PLAN APPROVED 22/6/10

TEST MARK ON FABRICATED STERN
FRAME AS FOLLOWS.

B. C.
7053
C. J.
18-4-41.

TEST MARK ON RUDDER POST
AS FOLLOWS.

B. C.
6672
G. H. B.
18-8-41.



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CENTRE KEELSONS (SINGLE BOTTOM).

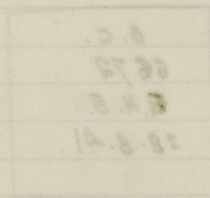
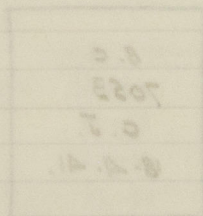
State particulars, which do not appear on reference Plans, of Scantlings and Riveting, illustrated by Sketches of Construction, amidship, at ends, and under Boilers and Engines; of Connections to Keel; Horizontal Top Plates; Rider Keelson; Floor Connections and End Connections.

State whether particulars not given are in accordance with approved Plans. *Yes.*

State name of approved Plans and date of approval.

MIDSHIP SECTION

23-7-40. 10-5-40.



SINGLE BOTTOMS.

State particulars, which do not appear on reference Plans, of Floors, Frames, Reverse Frames, Side Girders, Engine and Thrust Seats, Boiler Bearers, End Floors, Bossing, and Transom Floors.

State whether particulars not given are in accordance with approved Plans.

State name of approved Plans and date of approval.



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SINGLE BOTTOMS—Continued.

DOUBLE BOTTOM.

State particulars, which do not appear on reference Plans, of Scantlings and Riveting, illustrated by Sketches of Construction, of Centre Girders Amidships, at Ends, and under Boilers and Engines; End Connections; Manholes in Centre Girder and Compensation where fitted; Centre Girder where watertight; Scantlings, &c., of Solid Floors; Frames and Reverse Frames on Solid Floors; Stiffeners on Tank End Floors; Open Floors, extent and spacing; Open Floor Frames, Reverses, Struts, and Brackets; Tank Top Plating, Butts, and Seams; Sheathing; Margin Plates; Margin Brackets to hold Frames; Connection to Tank Margin and Frames; Gussets; Intercostal Girders, amidships, under Engines, Thrust, Boilers, and Boiler Bearers; Arrangement and Spacing at Ends; Engine and Thrust Seatings; Stiffening under Wide Spaced Pillars and Air Pipes in each Compartment of Double Bottom.

State whether particulars not given are in accordance with approved Plans.

State name of approved Plans and date of approval.

YES.
 AFT END SCANTLING 19/6/40 AMENDED 13/8/40
 E.R. TANK 9/8/40
 THRUST SEAT 15/7/40

Date.

Surveyor's Initial.

No. 1 Compartment (forward) tested and found satisfactory

2	"	"	"
3	"	"	"
4	"	"	"
5	"	"	"
6	"	"	"

Engine Room Feed Tank
 Fore Peak
 After Peak

28.7.41.

3.9.41.

2.9.41.

Wfr.
 Wfr. 16/8
 Wfr. 16/8



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DOUBLE BOTTOM—Continued.

HOLD FRAMES AND REVERSE FRAMES

State particulars, which do not appear on reference Plans, of all Framing in Holds; Bunkers; Boiler Space;

Engine Space; Deep Tanks; at Tunnel Flats; also Connections at Head and Heel.

State whether particulars not given are in accordance with approved Plans.

YES.

State name of approved Plans and date of approval.

AFT END SCANTLING

19.8.40

FORE

23.7.40

MIDSHIP SECTION

25.7.40 10.5.40.

NO. 12 LONGITUDINAL FRAME FITTED $11\frac{1}{2} \times 3\frac{1}{2}$ INSTEAD OF
 $11\frac{1}{2} \times 4$ INSTEAD OF



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HOLD FRAMES AND REVERSE FRAMES—Continued.

'TWEEN DECK FRAMING.

State particulars, which do not appear on reference Plans, of Framing in various 'Tween Decks.

State whether particulars not given are in accordance with approved Plans. *YES*

State name of approved Plans and date of approval.

REF END SCANTLING

FORE - 01/8/20

19/8/20
23/7/20.



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WEB FRAMES AND SIDE STRINGERS.

State particulars, which do not appear on reference Plans, of Scantlings; Spacing; Attachments at Head and Heel; Reverse Frames; Ends of Side Stringers; Beams at Heads of Web Frames.

State whether particulars not given are in accordance with approved Plans. *YES*

State name of approved Plans and date of approval.

ART END SCANTLING

FORE - -

MIDSHIP SECTION

19/8/40.

23/7/40.

23/7/40, 10.5.40.

ADDITION TO APPROVED PLANS

*TRANSVERSES IN CENTRE TANKS FITTED WITH $3\frac{1}{2}'' \times 3\frac{1}{2}'' \times .46''$ BACK BARS
TO SHELL CONNECTIONS FOR 2 SPACES BETWEEN BOTTOM LONGITUDINALS
INBOARD.*

WEB FRAMES AND SIDE STRINGERS—Continued.



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HOLD KEELSONS AND STRINGERS. 83 W

State particulars, which do not appear on reference Plans, of Side Keelsons, Scantlings and Spacing Amidships, E. & B. Space, and Forward, and Connections to Floor Plates; Side Stringers, Scantlings, Extent, Spacing; Butts of Continuous Side Keelsons and Side Stringers; Connections to Bulkheads; Hold Stringers, Scantlings, and End Connections

State whether particulars not given are in accordance with approved Plans.

State name of approved Plans and date of approval.

HOLD KEELSONS AND STRINGERS—Continued.



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BEAMS.

State particulars, which do not appear on reference Plans, of Spacing and Scantlings of Beams, Half Beams, Beam Knees and Lug Connections to Girders and Hatch Coamings on all Decks; Beams of Deep Tank Tops, Tunnel Tops, Bulkhead Recesses, Open Decks, Transom Beams, Wide Spaced Hold Beams, and Strong Beams in Machinery Space.

State whether particulars not given are in accordance with approved Plans. *YES.*

State name of approved Plans and date of approval.

MIDSHIP SECTION

~~22.7.40~~ 10.5.40.

AFT END SCANTLING

19.8.40

FORE " "

23.7.40.

BEAMS—Continued.



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STANCHIONS, PILLARS, AND GIRDERS.

State particulars, which do not appear on reference Plans, of number of Rows of Stanchions and where fitted ; distance out from Centre Line of Girders or Runners ; Spacing, Type, and General Scantlings of Stanchions, Pillars and Girders ; Attachment at Heads and Heels of Stanchions and Pillars ; Pillars in Engine Room ; Attachment of Girders to Bulkheads and at Hatch Corners, Supports under Bulkhead Recesses and Deep Tanks ; Supports at ends and corners of Deckhouses and Erections ; extent and details of Longitudinal Cargo Divisions.

State whether particulars not given are in accordance with approved Plans.

State name of approved Plans and date of approval.

STANCHIONS, PILLARS, AND GIRDERS—*Continued.*

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0.7. E- WATERTIGHT BULKHEADS.

State particulars, which do not appear on reference Plans, of Watertight Bulkheads as given on page 3 ;

Webs in Tween Decks above Bulkheads ; Attachments ; Sluice Valves and Cocks.

State whether particulars not given are in accordance with approved Plans. *Yes*.

State name of approved Plans and date of approval.

(See also page 5)

MIDSHIP SECTION
AFT END SCAMPINGS
FORE -

23.7.40. 10.5.40.

19.8.40

23.7.40.

WATERTIGHT DOORS

State particulars, which do not appear on reference Plans, of Watertight Doors, where situated, Type, where controlled from, Makers, Buttresses at Sides of Doors ; particulars of Testing.

State whether particulars not given are in accordance with approved Plans.

State name of approved Plans and date of approval.



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WATERTIGHT BULKHEADS—TESTING.

State particulars and dates of tests of Watertight Bulkheads.

FORE PEAK BULKHEAD TESTED WITH FORE PEAK TANK
AFT - - - - - AFT

WATERTIGHT BULKHEADS—TESTING—Continued.



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PANTING ARRANGEMENTS (OUTSIDE PEAKS).

State Particulars, which do not appear on reference Plans, illustrated by Sketches of Construction, of Scantling Arrangements, Heights of End Floors; Panting Beams and Stringers; Pillars; Shell Lugs on Stringers and Plats; Attachments of Stiffeners and Framing to Stringers.

State whether particulars not given are in accordance with approved Plans. **YES.**

State name of approved Plans and date of approval.

FORE END SCANTLING PLAN
AFT END SCANTLING

23. 7. 40.

19. 8. 40.

PANTING ARRANGEMENTS—Continued.



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SHELL PLATING.

State particulars, which do not appear on reference Plans, of number of Strakes of Plating, average Length and Width Amidships; Thickness of Side Plating Amidships and at Ends; Bottom Plating Amidships, Ends, and Flat of Floor Forward; End Connections; Seam Connections; Construction at Breaks of Erections; Compensation in way of Cargo Doors, Sidelights and other Openings; Doublings where fitted; Forefoot Plate, After Hood Plating, Boss Plating; Sheerstrakes, Topside Plating, Garboard Strakes with Bar Keels; Gunwale Angles and Mouldings.

State whether particulars not given are in accordance with approved Plans *Yes.*

State name of approved Plans and date of approval.

PRELIMINARY ARRANGEMENT OF SHELL BUTTS

17/8/40.

28/3/41.

PROPOSED WELDING OF BOSS PLATES

ALTERATIONS FROM APPROVED PLAN OF BOSS PLATES.

STRAP FITTED AT BUTT OF WRAPPER PLATE AND BOSS PLATE IN ORDER TO FACILITATE FITTING OF BOSS PLATE.

BUTT STRAP FITTED WITH ONE ROW OF HOLES EACH SIDE. STRAP SCREWED UP, BUTT OF PLATES WELDED AND STRAP RIVETED.

HAWSE PIPES WATER TESTED. 24/10/41.

SHELL PLATING—Continued.



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DECKS.

State particulars, which do not appear on reference Plans, of which Decks are Weather Decks, Freeboard Decks, Second, Third, &c., and Platform Decks; Scantlings of Plating and Areas in square inches of Plating abreast Machinery Openings, Hatches Amidships and at Ends; Stringer Plates Amidships and at Ends; End Connections and Seam Riveting in each case; Doublings at Hatch Corners; Size of Corner Angles; Wood Sheathing and Deck Compositions; Watertight Cement Chocks on Freeboard Deck whether Chocks are fitted in other Decks, and particulars of all Chocks fitted in each Deck and Flat; Rusted Iron Chocks, W.T. Collars, Coaming Angles and Mast Collars; Riveting of Coaming Angles, Gutter Angles, Chock Angles, and particulars of Water Testing of Decks

State whether particulars not given are in accordance with approved Plans. *YES.*

State name of approved Plans and date of approval.

PROFILE AND DECK PLAN

10/5/40

MIDSHIP DECKHOUSES

20-A-A1

RET END SCANTLING

19/8/40.

FORE

23/7/40

ALTERATIONS FROM APPROVED PLANS.

UPPER DECK STRINGER ANGLE AMIDSHIPS FITTED 8' 8" 82' 0" A

INSTEAD OF 7' 7" 82' 0" A.

6' 6" ANGLES FITTED AT ALL FLATS, DECKS ETC. WHERE RET END

SCANTLING PLAN SHOWS FILLET WELD OR 6' 6" BAR

INSTEAD OF 6' 6" 62' 0" A FOR STRINGER ANGLE AT FORE END OF

POOP DECK 3 1/2' 3 1/2' .50' ANGLE FITTED AND WELDED CONTINUOUSLY

AT JOES.

FORECASTLE DECK NOSE TESTED 24/10/41 W. J. Noble

UPPER DECK NOSE TESTED IN WAY OF FORE HOLD, AND PUMP RM 24/10/41 W. J. Noble

POOP DECK NOSE TESTED 24/10/41 W. J. Noble

BOAT - - - 24/10/41 W. J. Noble

BRIDGE - - - 24/10/41 W. J. Noble.

DECKS—Continued.



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CEILING AND SPARRING.

State particulars, which do not appear on reference Plans, of Close Ceiling and how fastened in Holds and Bunkers; if Tank Top Ceiled where Double Bottom is used for Oil Fuel; Sparring and how fastened in Holds, Tween Decks; Manhole Covers, and Protection.

State whether particulars not given are in accordance with approved Plans.

State name of approved Plans and date of approval.

SUPERSTRUCTURES.

State particulars, which do not appear on reference Plans or L.L. 4 D. Form:— 1st Superstructure, Length and Height

2nd Superstructure, Length and Height

and Height
illustrate by Sketches of Cross Section through Superstructures; Coaming and Top Angles; Plating Amidships, at Ends; Riveting of Seams; Doublings at Windows and Doorways; Top Plating; Stiffening; Beams; Web Plates and Partial Bulkheads: Breaks in continuity; and Bulkheads at End of Erections on Freeboard Deck.

State whether particulars not given are in accordance with approved Plans. *YES.*

State name of approved Plans and date of approval.

*FORB L. AFT GANGWAY PLAN
AFT END SCANTLING
MIDSHIP DECKHOUSES*

*30. 10. 40
19. 8. 40.
30. 4. 41.*



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SUPERSTRUCTURES—Continued.

HATCHWAYS AND OTHER DECK OPENINGS.

State particulars, which do not appear on reference Plans or L.L. 4 D. Form, of Dimensions of Openings in different Decks; Scantlings of Coamings; Coaming Angles; Side Stiffeners; Stays; Spacing and Scantlings of Hatch Webs; Hatch Covers; Details of Hatch Corner Construction; Mast Openings; Engine and Boiler Openings, and Casings and Companion Ways.

State whether particulars not given are in accordance with approved Plans. *Y/ES.*

State name of approved Plans and date of approval.

FORE & AFT GANGWAY	30-10-40.
FORE END SCANTLING	19-8-40.
MIDSHIP DECKWAYS	30-4-41.

SEE 6.6.4.0 FORM.



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DECK OPENINGS—Continued

MACHINERY SPACE ~~AND TUNNEL.~~

State particulars, which do not appear on reference Plans, of Through Beams and Stanchions in Machinery Space; Engine Seating; Thrust Seating; Boiler Stools; Thrust Stools; Bossing Arrangements; Scantlings of Stiffeners; Plating and Coaming Angles of Tunnels and Tunnel Recesses; Escape Hatches; Stiffening of Tunnels under Stanchions; and particulars and dates of Water Testing Tunnels.

State whether particulars not given are in accordance with approved Plans. **YES.**

State name of approved Plans and date of approval.

REF END SCANTLING

19.8.40

PROMISED THRUST SEAT PLAN.

15.7.40.



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RIVETING AND CAULKING.

AS PER APPROVED PLANS EXCEPTING:-
 RIVETS IN SEAMS OF SHELL PLATING AFT OF FR. 27 AND
 FORWARD OF FR 81 SPACED 4 ONS APART

ELECTRIC WELDING.

State particulars of Electrodes, Manufacturers, sizes of Electrodes, Voltage, Amperage, Rates of Deposit, &c.,
 arrangements for skilled supervision of work in the Yard; Particulars of Tests, including Samples of work
 in Yard.

Portions of Structure where Electric Welding used, Thickness of Material Welded, Size and Types of Welds,
 Angles of Edges and Clearance of Base in Butt Welds, Depth and Width of Lap Welds, and Connections

of Plates and Bars.

MUREY - FASTEN NO 4 6 8 10 } USED FOR DECK FITTINGS
 260 210 170 110 AMPS

QUASI ARC - "FERROSPERO" NO 10 - 110 AMPS USED FOR TEE BAR
 CONNECTIONS AND OVERHEAD WORK.

RATE OF DEPOSIT FOR ALL ELECTRODES 9" FOR 18" ELECTRODE.



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ELECTRIC WELDING—Continued.

BULWARKS, PORTS, SCUPPERS, ETC.

State particulars, which do not appear on reference Plans or L.L. 4 D. Form, of Length and Height of Bulwarks; Freeing Port Area; Construction of Freeing Ports; Details of Gangway Doors, Scupper from Watertight Decks; Soil Pipe Elbows below Freeboard Deck.

State whether particulars not given are in accordance with approved Plans. **YES.**

State name of approved Plans and date of approval.

BULWARKS AT POOP AND FORECASTLE END PLAN 21.10.40

SEE L.L. 4 D. FORM.



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BULWARKS, PORTS, SCUPPERS, ETC.—Continued.

VENTILATORS AND SIDE SCUTTLES.

State particulars, which do not appear on reference Plans or L.L. 4 D. Form, of Coaming Heights; Thicknesses; Deck Connections of Hold Ventilators on Weather Portions of Freeboard Decks; Bridge Decks; Forecastle and Poop Decks; Ventilators to Holds and Tunnels and Side Scuttles in Tween Decks; means of Closing.

State whether particulars not given are in accordance with approved Plans.

State name of approved Plans and date of approval.

MECHANICAL VENTILATION FITTED THROUGHOUT ACCOMMODATION
BY THERMOTANKS LTD. GLASGOW.

FOR PARTICULARS OF VENTILATORS AND SIDE SCUTTLES
SEE L.L. 4. D. FORM.



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VENTILATORS AND SIDE SCUTTLES—Continued.

PUMPING ARRANGEMENTS.

State particulars, which do not appear on reference Plans, of Hand Pumps or Power Pumps and from which

Deck they are operated; Hand Pump to Fore Peak, Drain Boxes and Tank Tops; Sounding Pipes,

Testing of Pumps.

Are the Chambers of the Plunger Pipes Copper?

Is a Plate fitted under the Lower End of each Sounding Pipe? **NO. ENDS PLUGGED.**

Are Pump Chambers, Tail Pipes, and Rods protected by substantial Casings? **YES**

State whether particulars not given are in accordance with approved Plans. **YES.**

State name of approved Plans and date of approval.

BILGE AND TANK SUCTION PLAN	2. 8. 40.
FORW. PUMPING ARRANGEMENT PLAN	19. 9. 40
CARGO PUMP ROOM - -	21. 2. 41
12' M.S. SADDLE PIECE -	24. 9. 40.

ALTERATIONS FROM APPROVED PLANS.

OIL FUEL TRANSFER LINE FROM FORE HOLD PUMP ROOM TO ENGINE ROOM
ALSO PIPE LINE EXTENDING FROM STERN TO FORE DECK TANK
WITH CONNECTION AND VALVE TO DOUBLE BOTTOM INCREASED FROM 4" TO 6"

CARGO PUMPS IN MAIN PUMP ROOM

TWO HORIZONTAL DUPLEX BRASS FITTED CARGO OIL PUMPS 18" x 14" x 24" BY
J. P. HALL & SONS PETERBOROUGH ALSO ONE HORIZONTAL DUPLEX BRASS
FITTED DRAINAGE PUMP 6' x 6' x 6' BY J. P. HALL & SONS.

CARGO PUMPS IN FORWARD PUMP ROOM.

ONE BALLAST PUMP AND ONE OIL FUEL TRANSFER PUMP EACH 6' x 6' x 6'
BY J. P. HALL & SONS.



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CEMENTING AND PAINTING.

State if and where Portland or Bituminous Cement is used and how it is applied.

State particulars and Composition of Cement, Cement Wash, Paint, or Bitumen, in Tanks and elsewhere.

COFFERDAMS CEMENT WASHED

E. R. FEED TANK CEMENT WASHED

AFTER PEAK - -

FORE - -

F.W. TANKS COATED WITH THICK CEMENT WASH. - ✓

SHIP'S BOTTOM EXCLUDING PETROLEUM AND OIL RUL6 COMPARTMENTS
COATED WITH PORTLAND CEMENT MIXED WITH SAND, ONE PART OF
CEMENT TO TWO PARTS OF SAND.

E. A. TANK TOP, BIRGES AND BRACKETS COATED WITH BITUMINOUS
SOLUTION AND ENAMEL (EXCLUDING UNDER ENGINES BEDPLATE AND
GUTTERWAY BUT INCLUDING DRAIN TRIS)
BITUMINOUS SOLUTION APPLIED UNDER SOBRIGHTS WHERE WOOD
LINING IS FITTED.

MASTS, SPARS, AND RIGGING.

Steam Vessels.—State particulars, which do not appear on reference Plans as to Heights, Diameters, and
Scantlings of Masts; Derrick Loads and Outreaches; Scantlings and arrangements of Derrick Tables
and Outriggers.

Sailing Vessels.—The same particulars as for Steam Vessels, where applicable, also particulars of Rigging,
details of Canvas and Sail Area.

State whether particulars not given are in accordance with approved Plans.

State name of approved Plans and date of approval.

MASTS & DERRICK POSTS

29/8/40.

FOREMAST DERRICK TESTED TO 5 TONS

2/12/41 WYNOLLE

MAINMAST - - -

2/12/41 WYNOLLE

PORT SAMSON POST DERRICK TESTED TO 5 TONS

2/12/41 WYNOLLE

(STARBOARD PUMP ROOM VENT DERRICK TESTED TO 2½ TONS.

ON TESTING THIS DERRICK THE BLOCK AT THE VENT HEAD FRACTURED
THROUGH THE BECKET. BLOCK RENEWED AND DERRICK RETESTED 9/12/41.



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EQUIPMENT.

State Equipment Numbers and corresponding Letter for Register Book. **C 41.**

Chain Cables, Stream Chains, Wires, &c.—State particulars of number of Certificates, where and when Tested, Length, Size, Weight, and Maker's Name.

Anchors.—State number of Certificates, where and when Tested, Weight of Head Shank and Stock, and

Maker's Name and Type of Anchor.

Steering Gear.—Plans or Sketches showing arrangement and details of Steering Gear, including Auxiliary Gear, to be given, to include Diameter of Chains and Rods; Diameter and Scantlings of Quadrant; Diameter, Scantlings and Attachments of Quarter and Leading Blocks, Buffer Springs and Stretching Screws; Type and Make of Steering Gear and Control; Particulars of Relieving Tackle, Brakes, &c.; Particulars of Test Certificates for Chains, Rods, Stretching Screws, Buffer Springs, Spare Links, Shackles, &c.; state Spares provided; Particulars of Trials.

Windlass and Capstan.—State particulars of Type and Maker's Name and if satisfactory under trial.

Winches.—State Number, Size, and Type fitted.

Lifeboats.—Number and Dimensions.

CHAIN CABLES

CERT. NO 18035. TESTED 6 P.M. LOW WALKER 24.7.41.

216 FMS 2 9/16" STUD LINK 799 CWT. 1 QR 0605.

FORE LOCK SHACKLE - 1 1/8"

CERT. NO 18036 TESTED 6 P.M. LOW WALKER 24.7.41 WT. 1 QR 12 605.

ANCHORS

CERT. NO 40803 TESTED 6 P.M. SUNDERLAND 10.5.41.

WEIGHT = 85 CWT. 2 QRS. 14 605.

OVERS IMPROVED STOCKLESS.

CERT. NO 40647 TESTED 6 P.M. SUNDERLAND 27.3.41.

WEIGHT = 85 CWT. 2 QRS. 14 605.

OVERS IMPROVED STOCKLESS

CERT. NO 54243 TESTED CRADLEY HEATH 9.7.41.

WEIGHT = 35 CWT. 0 QRS. 14 605. STOCK 6 CWT. 1 QR. 24 605.

ORDINARY FORGED WROUGHT 1904 ANCHOR.

EQUIPMENT—Continued.

GUARDANT B.C. 5933, H.W. 16.5.41. J. 6. 12.8.41.

TILLER B.C. 5933, J.A.W. 22.4.41. J. 6. 12.8.41.

TILLER B.C. 5924 J.A. 23.4.41 J. 6 12.8.41.

105 FMS. STEEL STREAM WIRE 4 1/2" - 6/24

130 - - TOWLINE - 5 1/2" - 6/24

2. 90 FMS. 8 1/2" MANILA HAWSER

2. 90 - 7 1/2" - -

STEERING GEAR:- WILSON BIRRIE TYPE 9 1/2" x 9"

VERTICAL ENGINE WITH TELEMOTOR CONTROL BY JOHN LYNN & CO. LTD.

ABBEY, SUNDERLAND. APPROVED 1-10-40.

AUXILIARY STEERING ARRANGEMENT PLAN APPROVED 17.10.40.

STEERING GEAR & TELEMOTOR TESTED. 2/12/41 W. J. Noble

AUXILIARY GEAR TESTED. 2/12/41 W. J. Noble.

STEAM WINDLASS:- BY CLARKE CHAPMAN & CO. LTD.

11" DIA. x 14" STROKE 2 9/16" DIA. CABLES.

WINDLASS AND ANCHOR TRIAL 2/12/41 W. J. Noble

STEAM WINCHES BY JOHN LYNN & CO. LTD. SUNDERLAND.

ONE 7' x 12" STEAM WINCH AT FOREMAST

- 7' x 12" - - MAINMAST WITH ONE EXTENDED END.

- 8' x 12" - - ON POOP - BOTH ENDS EXTENDED.

WINCHES TESTED WITH 25% OVERLOAD.

LIFEBOATS ON UPPER BRIDGE. PORT 23.1' x 7.6' x 3.05' 34 PERSONS WITH S.H.P. MOTOR.

STARBOARD 23.05' x 7.65' x 3.00' 28

PORT 24.15' x 7.85' x 3.2' 35

STARBOARD 24.0' x 7.75' x 3.15' 35

AFTER BOAT DECK

EQUIPMENT—Continued.

DEEP TANKS, OIL TANKS, AND OIL BUNKERS.

State particulars, which do not appear on reference Plans, of Position and Arrangement; Scantlings of Plating, Stiffeners, Deck Girders, Wash Bulkheads and Plates; Top Plating; Frame Connections; Means to prevent Overloading; Height of Filling, Air and Sounding Pipes; in the case of Oil Tanks, give Density and Flash Points of Oils; Arrangements of Expansion Trunks, Cofferdams, and details of Ventilation; state Particulars of Packing used.

State Arrangements of Pump Rooms, means of keeping Low Flash Point Oil separate from other Oil, and provisions made where Low Flash Point Oils are used for Oil Fuel.

State whether particulars not given are in accordance with approved Plans. *Yes.*

State name of approved Plans and date of approval.

MIDSHIP SECTION

10-5-40.

FORE END SCANTLINGS.

23-7-40

AFT

19-8-40.

~~TIROS VALVES FITTED TO ALL CARGO TANKS SET TO LIFT AT 12-0 PRESSURE TAKEN OUT.~~
~~6" SLUICE VALVE, PRESSURE GAUGE AND RELIEF VALVE FITTED AT BASE OF FORE MAST AND MAINMAST. PIPES 6-0 UP MASTS.~~
~~ALTERATIONS FROM AMENDED AFT END SCANTLING PLAN.~~

7. RIVETS CONNECTING COFFERDAM TIE PLATES TO STIFFENERS ON COFFERDAM FORD. BULKHEAD INSTEAD OF 8.

LONGITUDINAL BULKHEAD STIFFENERS.

NO 3	FITTED 6' 3" 38" B A	INSTEAD OF 6' 3" 36" B A
4	7' 3" 34	6' 3" 34
6	8' 3" 34	7' 3" 34
7	8' 3" 34	7' 3" 36
10	9' 3" 38	8' 3" 36
11	9' 3" 38	8' 3" 40
12	9' 3" 38	9' 3" 38
13	9' 3" 39	9' 3" 40
14	9' 3" 46	9' 3" 40
8	8' 3" 35	8' 3" 35
9	8' 3" 40	8' 3" 40

RIVETS IN TRANSVERSE BULKHEADS AND STIFFENERS SPACED 5" CTRS. INSTEAD OF 5 CTRS.

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DEEP TANKS, OIL TANKS, AND OIL BUNKERS—Continued.

ADDITIONAL STIFFENING FITTED IN AFTER 2. FORWARD COFFEROAMS
SIMILAR TO THAT IN "EMPIRE PEARL". ~~EXCEPTING THAT THE~~
NO ADDITIONAL STIFFENING HOWEVER FITTED IN CROSS BUNKERS.

BHD. NO 44 B. STIFFENERS WELDED CONTINUOUSLY ALONG KEEL FROM
BOTTOM TO 1ST. TRANSVERSE SEAM

BHD. NO 44 A & B. WHERE WING STIFFERS. HAVE NO END CONNECTIONS
ENDS WELDED ROUND FOR 12".

DEEP TANKS, OIL TANKS, AND OIL BUNKERS—Continued.



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DEEP TANKS, OIL TANKS, AND OIL BUNKERS—Continued.

State which Tanks are used as Oil Fuel Bunkers.

Give position and size of Air Pipes or Ventilators from each Tank.

E.R. Oil fuel or W.B. Tank: Tested & found satisfactory

B.R. -

after Deep Tank :- Tested & found satisfactory

Ford.

31-7-41 wfn

7-8-41 ⁰уфн.

8-B-41 wfm

20-B.41 w/for

5-9-41

visits made by Mr Greenhalgh.

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SURVEYORS' NOTES.

Give dates of visits also notes of any occurrence of which a record should be kept.

4/12/40, 17/1/41, 20/1/41, 21/1/41, 23/1/41, 24/1/41, 27/1/41, 28/1/41,
29/1/41, 30/1/41, 31/1/41, 2/2/41, 4/2/41, 5/2/41, 7/2/41, 10/2/41, 11/2/41,
12/2/41, 13/2/41, 14/2/41, 17/2/41, 18/2/41, 19/2/41, 21/2/41, 24/2/41,
25/2/41, 27/2/41, 28/2/41, 2/3/41, 3/3/41, 4/3/41, 5/3/41, 6/3/41, 7/3/41,
9/3/41, 10/3/41, 11/3/41, 12/3/41, 13/3/41, 14/3/41, 16/3/41, 17/3/41, 18/3/41,
20/3/41, 21/3/41, 23/3/41, 25/3/41, 26/3/41, 27/3/41, 28/3/41, 30/3/41,
31/3/41, 6/4/41, 7/4/41, 20/4/41, 27/4/41, 29/4/41, 30/4/41, 1/5/41,
3/5/41, 4/5/41, 6/5/41, 7/5/41, 9/5/41, 10/5/41, 20/5/41, 23/5/41,
19/8/41, 20/8/41, 21/8/41, 22/8/41, 25/8/41, 26/8/41, 27/8/41, 28/8/41,
29/8/41, 1/9/41, 2/9/41, 3/9/41, 4/9/41, 5/9/41, 6/9/41, 8/9/41, 19/9/41.

visits made by Mr Stephenson.

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SURVEYORS' NOTES—Continued.

14/3/41 Work in hand.
18/3/41. Work in hand.
26/3/41. Work in hand.
28/4/41. Work in hand.
5/5/41. Work in hand.
15/5/41. Work in hand.
22/5/41. Work in hand.
26/5/41. Work in hand.
11/6/41. Work in hand.
24/6/41. Work in hand. Discussed in D. I. stiffening
in way of ^{after} cofferdam bulkhead, with Mr. Noble
25/7/41. Discussed in D. I. additional stiffening in
way of cofferdam bulkhead.
9/7/41. Work in hand.
11/7/41. Work in hand.
29/7/41. Work in hand.
5/8/41. Progress of work regarding plating instalment.
22/8/41. With Mr. Noble. Work in hand.
10/9/41. Final examination of bottom &c. Vessel launched
late evening.
25/9/41. Afloat. Work in hand.
15/12/41 Vessel handed over.

B.H.P.



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SURVEYORS' NOTES—Continued.

12/5/41, 13/5/41, 14/5/41, 16/5/41, 20/5/41, 22/5/41, 24/5/41, 26/5/41,
27/5/41, 28/5/41, 29/5/41, 30/5/41, 4/6/41, 5/6/41, 6/6/41, 9/6/41, 10/6/41,
11/6/41, 12/6/41, 13/6/41, 16/6/41, 17/6/41, 18/6/41, 19/6/41, 25/6/41,
26/6/41, 27/6/41, 3/7/41, 7/7/41, 8/7/41, 9/7/41, 10/7/41, 14/7/41, 15/7/41,
16/7/41, 17/7/41, 18/7/41, 22/7/41, 23/7/41, 24/7/41, 25/7/41, 28/7/41,
29/7/41, 30/7/41, 31/7/41, 1/8/41, 5/8/41, 6/8/41, 7/8/41, 12/8/41,
13/8/41, 14/8/41, 15/8/41, 18/8/41, 19/8/41, 20/8/41, 21/8/41, 22/8/41,
23/8/41, 25/8/41, 26/8/41, 27/8/41, 28/8/41, 29/8/41, 30/8/41, 1/9/41,
2/9/41, 3/9/41, 4/9/41, 6/9/41, 8/9/41, 24/9/41, 26/9/41, 29/9/41,
1/10/41, 3/10/41, 6/10/41, 9/10/41, 13/10/41, 16/10/41, 20/10/41, 22/10/41,
24/10/41, 31/10/41, 3/11/41, 6/11/41, 11/11/41, 13/11/41, 18/11/41, 21/11/41,
25/11/41, 28/11/41, 1/12/41, 2/12/41, 5/12/41, 9/12/41, 11/12/41, 15/12/41.

W. T. Noble.

REFRIGERATION.

State particulars of Arrangement, Makers, and Survey of Refrigerating Plant.

State extent, particulars, illustrated by Sketches of Insulation.

REFRIGERATOR FITTED FOR DOMESTIC PURPOSES ONLY STEAM
DRIVEN OF THE METHOL CHLORIDE TYPE CAPABLE OF MAINTAINING
A TEMPERATURE OF 15°F IN TROPICAL CLIMATES IN A MEAT ROOM
OF 600 $\frac{1}{2}$ AND SIMULTANEOUSLY TO COOL A VEGETABLE ROOM
OF 400 $\frac{1}{2}$ TO 32°F. PLANT PLACED ON FLAT AT AFT END
OF ENGINE-ROOM.



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REFRIGERATION—Continued.

REFRIGERATION—Continued.



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LOAD LINE PARTICULARS WHERE

Registered Length	Breadth	Depth
Length on L.W.L.	Beam at Gunwale Amidships	
Moulded Depth as measured in Ship	476' 11 1/2" 68' 0" 36' 0"	
Round of Beam	Rise of Floor	1'
Sheer at Stem	Sheer at Sternpost	45 5/8'
" 1/2 from Stem	" 1/2 from Sternpost	
Particulars of Sheer in Decks which are not parallel to Freeboard Deck	Thickness of Wood Deck	
Fall in Sheer	Thickness of Ceiling	
Extent of Wood Deck	Depth of Framing	
Thickness of Sparring	Modifications in D.B. affecting Coef. (see Sketch).	
Drop in Tank Level		
Particulars of Erections (see Sketch)	Length of Overhang (Recesses, &c.)	Height
Forecastle		
Poop or R.Q.D.		

Bridge

Scantlings of Bulkheads of Erections

Openings in Bulkheads of Erections and Means of Closing same

Are the Engine and Boiler Openings covered by the Poop or R.Q.D. and enclosed by a strong Iron or Steel House?

Give Number, Size, and Area of Freeing Ports in Wells

NOT STATED ON L.L.4.D. FORM.

Displacement in Salt Water	Tons per inch
Tonnage under	Deck

Means of making Freeboard Deck watertight in erections where Frames pass through

Freeboard assigned by the Committee, as per letter issued by Secretary dated

From Top of Statutory Deck Line to Centre of Disc

Fresh Water Line above Centre of Disc

~~100 P.K.A.L.~~
100 P.K.A.L.

" "

Winter Line below Centre of Disc

W.N.A. " "

Statutory Deck Line 0 ins. above Top of Wood/Steel Upper

Freeboard marks verified :- BY W.J. NOBLE. 20/10/41.

Freeboard as assigned above subject to :- VERIFICATION OF MARKS ETC AND COMPLIANCE WITH CONDITIONS OF ASSIGNMENT.



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LOAD LINE PARTICULARS—Continued.

Elevation and Plan Sketches showing Lengths and Arrangements of Erections, Length, Heights and variations of Double Bottom, Peak Tanks, Protection of Openings in Bulkheads, if not stated on L.L. 4 D Form.

^I
We have satisfied ~~myself~~ ourselves, from personal examination, that this Ship has been built in accordance with the approved Plans and the Rule requirements, or their equivalent, that the materials used in the construction of the Hull and Equipment are in accordance with the Rules, and that the workmanship is in every respect satisfactory.

W. J. Noble
W. J. Noble.

Surveyor to the British Corporation Register
of Shipping and Aircraft.

THIS VESSEL WAS BUILT IN ACCORDANCE WITH THE APPROVED
PLANS AND TO SPECIFICATION AND REQUIREMENTS OF MERCHANT
SHIPBUNDING BRANCH OF THE ADMIRALTY.

It is submitted that this Report be approved.

William Day
for Chief Surveyor.

4 FEB 1942

Approved by the Committee for the Class of *B5** (BULK OIL CARRIER) on the *14th February 1942*

M. G. G. G.
Secretary.



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LOAD LINE MARKINGS

The vessel was built in accordance with the approved plans and is registered and equipped in accordance with the requirements of the Board of Trade and the provisions of the Merchant Shipping Act, 1894, and the regulations made thereunder.

W. J. Hall
W. J. Hall

The vessel was built in accordance with the approved plans and is registered and equipped in accordance with the requirements of the Board of Trade and the provisions of the Merchant Shipping Act, 1894, and the regulations made thereunder.

The vessel was built in accordance with the approved plans and is registered and equipped in accordance with the requirements of the Board of Trade and the provisions of the Merchant Shipping Act, 1894, and the regulations made thereunder.

It is certified that the vessel is in accordance with the requirements of the Board of Trade and the provisions of the Merchant Shipping Act, 1894, and the regulations made thereunder.

W. J. Hall
W. J. Hall

4 FEB 1905

Approved by the Committee for the Class of 1904

W. J. Hall
W. J. Hall



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