No. 2473

TRANSFERRED TO:
L. R. SYSTEM

THE BRITISH CORPORATION REGISTER OF SHIPPING AND AIRCRAFT

Report No. ~~1359~~ 9660. No. in Register Book 4220

TRANSFERRED TO:
L. R. SYSTEM

Ship „Unitas 5"

Builder Bremer Vulkan

Yard No. 743

HULL AND EQUIPMENT

THE BRITISH CORPORATION REGISTER OF SHIPPING AND AIRCRAFT

Report No. 1359 No. in Register Book 4220

Received at Head Office Sept 23, 1934.

Surveyor's Report on the Construction of the

~~Single~~ ~~Triple~~ ~~Twin~~ ~~Quadruple~~ Screw „ Unitas 5 "

Surveyor's District Hamburg and Bremen

Builders Bremer Vulkan

Yard No. 743 Where Built Vegesack

Owners Jurgens, Van den Bergh Marg. Verk. Union

Port of Registry Bremen Flag German

Managers

Manager's Address

Official No.

Rig 2 masts Code Letters DOSM

Scantling Sections approved by Committee 24/9/35

To be classed B.S.* Whaling purposes

With a Freeboard of 2' 10 1/2"

Date of First Visit 15/8/36

Date of Last Visit 29.5.34.

Total number of Visits 34

Keel Laid 15/8/36 Launched 13/4/37

Date of Build 29.5.34. Date of this Report 20/9/37

PARTICULARS.

Registered Dimensions 137.0' × 26.1' × 13.75'

Tonnages—

Tons.

Under Tonnage Deck

In ..... 'Tween Decks

In ..... 'Tween Decks

In ..... 'Tween Decks

In Turret

Suez Canal Tonnage— **Under Deck Tonnage** 326.77

Tonnage in Poop

„ R.Q.D.

„ Bridge

„ Forecastle

„ Hatchways

„ Deck Houses

„ Chart Houses

„ Light and Air Spaces

Gross Tonnage 340.60

Deductions—

Crew Space

Engine Room %

Light and Air

Navigation Spaces and Stores

Peak Tanks

Deep Tanks

Net Registered Tonnage 122.37

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

PARTICULARS—*Continued.*

Moulded Dimensions 133'3" × 26' × 14'6"

Height of Superstructure —

Proportions $\frac{L}{B}$ = 5.15 $\frac{L}{D}$ = 9.18

$\frac{D}{B}$ = 2.552 $\frac{L}{D \text{ (to top of Superstructure)}}$ = —

Camber 145 mm Rise of Floor 610 mm

Number and Description of **Decks** for Register Book 1 flush

Number of Decks under Freeboard Deck —

„ „ above „ „ —

Heights of 'Tween Decks —

Particulars of Superstructures —

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	„ 74	„	Main „	No. 8	„	„	„
No. 1	„ 61	„	„	„ 9	„	„	„
„ 2	„ 49	„	„	„ 10	„	„	„
„ 3	„ 38	„	„	„ 11	„	„	„
„ 4	„	„	„	„ 12	„	„	„
„ 5	„	„	„	„ 13	„	„	„
„ 6	„	„	„	„ 14	„	„	„
„ 7	„	„	„	After Peak	„ 4/6	„	„

PARTICULARS—*Continued.*

State which Bulkheads enclose Machinery Space 6 + 3P

State Number of Bulkheads to be recorded as effective 5

Number and Length of effective Watertight Compartments beginning Forward 6 : 3·1 m; 6 m; 5·5 m; 5·1 m; 17·05 m; 3·45 m.

Number of Non-Watertight Bulkheads 1

Double Bottom Extends from Frame — to Frame

Length and Capacity of Tanks

No. 1	Feet	Tons.	Fore Peak 3·1 m	Feet 11·3	Tons.
„ 2	„	„	Aft Peak 3·45 m	„ 20·7	„
„ 3	„	„	Deep Tanks	„	„
„ 4	„	„			
„ 5	„	„			
„ 6	„	„	Oil Bunkers 5·1 m	„ 144	„
„ 7	„	„			
„ 8	„	„			
„ 9	„	„			
„ 10	„	„	Particulars of Oil Fuel Tanks in Double Bottom.		

State where Centre Girder Watertight —

See plan approved: 24/9/35

Sketch showing Arrangement of Bulkheads, Tanks, &c.

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

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

The fore peak bulkhead tested on the 16. 3. 37
The drinking water tank " " " 8. 12. 36
The oil-bunkers " " " 23. 3. 37
The after peak " " " 3. 4. 37.
The port + stb. feed tank " " " 1. 4. 37.
All tanks tested to tops of air or sounding pipe. Oil-bunkers tested 7 ft. above main-deck.
No permanent deflection of bulkheads ascertained.

GENERAL—*Continued.*

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 yes

State name of approved Plans and date of approval.

Bar keel and stem flat bulb 180 x 40
Scarphs 450 mm long.

Stern frame and rudder in accordance with plan approved: 20/9/35

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.

Centre keelson ℓ 230 X 90 X 12 in accordance with profile plan and midship section approved: 24/9/35

In boiler room centre keelson top plate 230 X 12 with intercostale angle bars. 150 X 75 X 10 welded to floors in accordance with plan approved: 17/10/35
Centre keelson in way of engine room see plan approved 25/10/35

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. yes

State name of approved Plans and date of approval.

Floors: 490 X 7 flanged 75 m/m
in Blr. R. 9.5 below 11 m/m
in Eng. R. 9 m/m
in fore peak 9 and 10 m/m
in after peak 9 m/m

Boiler bearers frame 27 and 31
13 m/m with welded girder
plate 151 X 12
at shell 90 X 90 X 12

Engine foundation
according to plans approved:
25/10/35 and 19/11/35

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, Strutts, 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.

	Date.	Surveyor's Initial.
No. 1 Compartment (forward) tested and found satisfactory		
„ 2 „	„	„
„ 3 „	„	„
„ 4 „	„	„
„ 5 „	„	„
„ 6 „	„	„

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.

Plan of frames and beams approved 25/10/35
Midship section and profile plan approved 24/9/35
In way of oil bunker according to plan of oil bunker approved 8/10/35
Engine foundation plan approved: 25/10/35

Frames in way of fore peak: ⊏ 170 X 115 X 10
Brackets at top 420 X 350 X 8.5
3 rivets 19 Φ
Riveting to floors: 19 Φ, 6 d

Frames 50-73
L 130 X 65 X 7.5
Brackets at top frame 56-73
390 X 320 X 8.5
3 rivets, 19 Φ
Riveting with floors 19 Φ, 7 d
From frame 66-73: 19 Φ, 6 d

Oil bunkers.
Frame 39-48 L 140 X 65 X 8.5
Brackets at top 400 X 350 X 9
4 rivets, 19 Φ
Brackets at bottom 450 X 450 X 9
Riveting: 4 R. 19 Φ

HOLD FRAMES AND REVERSE FRAMES—*Continued.*

Boiler room.

Frame 25-38 L 130 X 65 X 9
Brackets at top 300 X 260 X 7.5
3 rivets 16 Φ
Rivets at floors 19 Φ, 7 d.

After peak and engine room.

Frame 0-24 L 130 X 65 X 7.5
Brackets at top 300 X 260 X 7.5
In way of eng. room 3 R. 16 Φ
Lift 390 X 320 X 8.5, 3 R. 19 Φ
Riveting to floors 19 Φ, 6 d.

'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.

State name of approved Plans and date of approval.

WEB FRAMES AND SIDE STRINGERS.

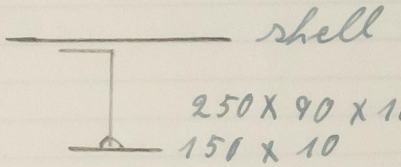
State particulars, which do not appear on reference Plans, of Scantlings; Spacing; Attachments at Head and Heel; Reverse Frames; Ends of Side Stringers; Beams at Heads of Web Frames.

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

State name of approved Plans and date of approval.

Midship section and profile plan
approved: 24/9/35
oil bunker plan approved: 8/10/35

Web frame No 25
470 X 7 flanged 70 mm
Web frame 27 & 31



D 150 X 90 X 10 overlapping floor 850 mm
14 rivets 19 ϕ
Large brackets at top 1400 mm deep - thickness 10 mm with welded girder plate 150 X 10

Side stringers according to plan approved: 27/9/35
End connections by brackets
Connections to frames by lug angles.

HOLD KEELSONS AND STRINGERS.

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. yes

State name of approved Plans and date of approval.

Side keelson fitted in Blr. R. frame 24-38 only ▷ 150 X 75 X 10, connection to frames 2 R. 19 ℄

In Eng. R. intercostale longt girder 9 mm
Hold stringer 280 X 10, flanged 90 mm
" " shell bar ▷ 90 X 90 X 9
" " in oil bunkers
400 X 9, flanged 75 mm
shell bar ▷ 90 X 90 X 10
frame lugs ▷ 100 X 75 X 8

HOLD KEELSONS AND STRINGERS—*Continued,*

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.

In accordance with plan approved: 24/9/35

Main deck beams:

Frame	0-12:	L 130 X 65 X 7.5
"	14-23	▷ 100 X 75 X 7.0
"	26-37	dito
"	39-48	▷ 130 X 75 X 9
"	50-56	L 180 X 75 X 10
"	62-73	L 130 X 65 X 7
"	24-25 strong beam	2 X L 180 X 75 X 9

Main deck beams brackets.

Frame	0-12	390 X 320 X 8.5,	3 R.	19 Φ
"	14-37	300 X 260 X 7.5,	3 R.	16 Φ
"	39-48	400 X 350 X 9,	4 R.	19 Φ
"	50-56	540 X 450 X 10,	5 R.	19 Φ
"	62-73	370 X 320 X 8.5,	3 R.	19 Φ
"	75-77	420 X 350 X 8.5,	3 R.	19 Φ
"	24-25 strong beam brackets	540 X 450 X 10,	5 R.	19 Φ

BEAMS—*Continued.*

Beams 2nd deck:

Frame	5-11	L 115 X 65 X 7
"	55-73	L 115 X 65 X 7 each 2nd frame

Beam brackets 2nd deck:

Frame	5-11	390 X 320 X 8.5	3 R.	19 Φ
"	55-73	345 X 280 X 8,	3 R.	16 Φ

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. yes

State name of approved Plans and date of approval.

Main deck girders:

Frame 6-12 ▷ 250 X 90 X 10 port and stb.
450 from centre line
" 4-9 ▷ 75 X 75 X 8 below beams in centre line
" 7, 8, 9 stanchions of 60 ϕ at mid line
" 10, 11 " " 60 ϕ 600 out of centre line
" 27½ stanchion of 60 ϕ below strong beam
280 stb. of centre line
" 66-74 ▷ girder 250 X 90 X 10
250 X 400 mm port of centre line
67 stanchion of 60 ϕ
71 " " 75 ϕ

Stanchions below 2nd deck.

Frame 57 port and stb. 1525 from centre line 60 ϕ
" 63 in centre line 60 ϕ
" 65 " " " 60 ϕ
" 67 port 400 from centre line 60 ϕ
" 71 port side 250 from centre line 75 ϕ

STANCHIONS, PILLARS, AND GIRDERS—*Continued.*

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)

Bulkhead at frame 13
Plating 6.3 mm
Stiffeners ▷ 75X65X8, spaced 610 mm
Boundary bar ▷ 65X65X9, at shell
▷ 75X75X9
Rivets of seams 16 φ 4.5 d stiffeners
16 φ 7 d (4 d)
Rivets of boundary bars 16 φ 4.5 d
" " shell " 19 φ 5 d

Bulkhead at frame 61
Plating at bottom 7.3
" " top 6.1
Stiffeners L 115X65X7, ▷ 100X65X7
▷ 65X75X8, spacing 610
Boundary bars ▷ 75X75X10 at shell
" " ▷ 65X65X8.5 at deck
Seams 16 φ 4.5 d
Stiffeners 16 φ 7 d for 16 φ L at ends 4 d
Boundary bar rivets 16 φ 4.5 d
Shell bar rivets 19 φ 5 d
For tank bulkheads see page 74

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.

WATERTIGHT BULKHEADS—TESTING.

State particulars and dates of tests of Watertight Bulkheads. see page 11

WATERTIGHT BULKHEADS—TESTING—*Continued.*

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 Flats; 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.

1) Forward:

Floors 75-77 depth. 2000+2100 mm
thicken 9 mm, 90 flange
Floor 78 extending up to deck
10 mm with lightening holes,
frame ▷ 120 X 120 X 10
Stringer frame 74 X 78: 450 X 10 flanged 75 mm
Shell bar ▷ 120 X 120 X 10
Flat from frame 78 to stem 1300 below
M. D. 10 mm ▷ 120 X 120 X 10
Breast hook from frame 79 to stem 10 mm
1000 mm below flat ▷ 120 X 120 X 10
Below upper deck centre line plate of
10-11 mm welded to floors.

2) Aft: Counter frames ▷ 100 X 75 X 7
Brackets 300 X 260 X 7.5, 3 R. 16 ϕ
Web frame at frame 0'
500 X 9, flanged 75 mm
shell bar ▷ 75 X 75 X 9
2 brackets 300 X 9, flanged 75 mm
450 mm from centre line port and stb.
Floors 9 mm, flanged 75 mm
Floor at frame 1: 750 X 10 flanged 90
" " " 2: 750 X 9 flanged 90
both fitted to stern post.

PANTING ARRANGEMENTS—*Continued.*

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.

Shell plating thickness and dimension according to shell expansion plan approved: 24/9/35 with the following exceptions
R 1 = 15.3 mm R 2 = 11.2 mm
Shell doubling for casing for seaconnection 12 mm
Butts ≠ 19 ϕ pitch 76 for 66 L.
≠ 19 ϕ " 86 at ends
Seams ≠ 19 ϕ " 86 rickrack
Riveting of bar keel and stem 19 ϕ
pitch of outer row 76 mm
" " inner " 114 mm
U. D. stringer angle ▷ 75 X 75 X 8 forward
▷ 90 X 75 X 8 19 ϕ pitch 86 mm
Above bunker 19 ϕ, pitch 76 mm.

SHELL PLATING—*Continued.*

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.

One flush steel deck.
Stringer 7.9 below wood sheathing 6.5
Plating 7.9 " " " 6.5
Above oil bunker and below winch 6.8
Forward below wood deck 5 mm
Area at sides of stokehold casing 21.7 □"
Riveting of butts ≠ 16 ϕ pitch 57
at ends + 16 ϕ " 70
seams + 16 ϕ " 72
Above oil bunkers 16 ϕ " 60

2½" pitchpine, except on Eng. R.
Blr. R. oil bunker and peak tank
In crew's quarters hardwood or cement.
Coaming angles:
Eng. and Blr. R. casing ▷ 130 X 65 X 8
Tank hatch coamings ▷ 75 X 75 X 9
Riveting of coaming angles 16 ϕ pitch 72
above oil bunker 16 ϕ " 60
Eng. and Blr. casing 19 ϕ " 85
Weather deck hose tested and found tight.
Tween deck above fresh water tank
see page 75.

DECKS—*Continued.*

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. yes

State name of approved Plans and date of approval.

Close ceiling fitted in hold for whaling line only. Permanently attached to planks fitted to frames by screw bolts.

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 ; 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.

No superstructure extending from side to side.
Deckhouses:
Plating 8 mm
Stiffeners + 75 X 8 welded
spacing 750
Forward house + 90 X 10 welded
spacing 10.50
Bottom bar of Eng. and Blr. R. casing ▷ 110 X 110 X 9
otherwise ▷ 130 X 65 X 8
Fiddly deck 8 mm beams + 100 X 10 welded
Top of deckhouses ▷ 100 X 75 X 10
Riveting of seams 16 φ, pitch 72 mm.

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. yes

State name of approved Plans and date of approval.

Eng. R. casing: 3500 X 4900 See page 49
Blr. R. 4500 X 6600

Oil bunkers hatchway: 610 X 530
Coaming 7 m/m
Bottom bar ⊏ 75 X 75 X 8
Steel covers 10 m/m

Hatchway for No 2 hold: 2400 X 920
Coaming 7 m/m
Bottom bar ⊏ 130 X 65 X 8
Cover 12 m/m
Companionway 5 m/m
Stiffeners 60 X 8 welded.

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.

Plan of eng. foundation approved 25/4/35
Blr. stools see page 24 No tunel
Strong beam in eng. R. see sketch L.L. 723.

Riveting of tank bulkheads:

1/ Oil bunker: Seams + 16 Φ, pitch 60
Boundary bar + (zickzack)
to shell 19 Φ pitch 95
" bkhd. 16 Φ " 75
All other boundary bars + 16 Φ, p = 64
Stiffeners 16 Φ pitch 88
Horizontal stiffeners for 16 L. at ends 64 L

2/ Water tanks:
Seams + 16 Φ pitch 72
partly 19 Φ " 85
(lowest seam bkhd. 6 and 74 ≠ 4.5 d)
Margin angle to shell + 19 Φ p. = 95
" " " bkhd + 16 Φ " = 72
" " " partly 19 Φ " = 85
Bkhd. 74 ≠ zickzack 19 Φ or 16 Φ, 5 d
Margin angle below deck 16 Φ, p = 72
Stiffeners 16 Φ, pitch = 88
" with out brackets for 0.16 L. at ends pitch 64.

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.

Parts of structure welded:

Main engine foundation
Web frame in stoke hold
Foundation of whale gun
Stiffeners of deck houses
Girders and stanchions

Particulars of welding.

Eng. foundation see plan approved: 25/10/35

Web frame ⊥ 8 75/180
Gun foundation ⊥ 7 70/135
Stiffeners ⊥ 7 70/140
Girders ⊥ 7 40/110

Electrodes: Phönix Union L H gelb lightly coated, 4 mm Φ, 40-45 kg/mm²
18-15 % elongation.
Current: 140 Amps, 25 Volts

RIVETING AND CAULKING.

Riveting of tank bulkheads:

1/ Oil bunker: Seams + 16 Φ, pitch 60
Boundary bar + (zickzack)
to shell 19 Φ pitch 95
" bkhd. 16 Φ " 75
All other boundary bars + 16 Φ, p = 64
Stiffeners 16 Φ pitch 88
Horizontal stiffeners for 16 L. at ends 64 L.

2/ Water tanks:
Seams + 16 Φ pitch 72
partly 19 Φ " 85
(lowest seam bkhd. 6 and 74 ≠ 4.5 d)
Margin angle to shell + 19 Φ p. = 95
" " " bkhd + 16 Φ " = 72
" " " partly 19 Φ " = 85
Bkhd. 74 ≠ zickzack 19 Φ or 16 Φ, 5 d
Margin angle below deck 16 Φ, p = 72
Stiffeners 16 Φ, pitch = 88
" with out brackets for 0.16 L. at ends pitch 64.

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.

Parts of structure welded:

Main engine foundation
Web frame in stoke hold
Foundation of whale gun
Stiffeners of deck houses
Girders and stanchions

Particulars of welding.

Eng. foundation see plan approved: 25/10/35

Web frame ⊥ 8 — 75 / 180
Gun foundation ⊥ 7 — 70 / 135
Stiffeners ⊥ 7 — 70 / 140
Girders ⊥ 7 — 40 / 110

Electrodes: Phönix Union L H gelb lightly coated, 4 mm Φ, 40-45 kg/mm²
18-15 % elongation.
Current: 140 Amps, 25 Volts

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, Scuppers 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.

Bulwark extending from stem 25m aft.
Height 685 mm thickness 6.4-10-7
No freeing ports open rails amidships and aft
9 cast steel fairleads of 300 mm each side in bulwarks.

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. yes

State name of approved Plans and date of approval.

Coamings of all ventilators at least 3' above deck, see L.L. 4 C form
Coamings welded to deck No side scuttles below deck.

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?

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

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

State name of approved Plans and date of approval.

Bilge and ballast line arrangement plan approved 6/2/36
1 hand pump of 4" ϕ fitted for fore peak.

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.

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. yes

State name of approved Plans and date of approval.

Fore mast 16.5 m. above deck
steel 420 m/m Φ, 10 m/m thickness

Main mast 12.5 m. above deck
wood 220 m/m Φ.

EQUIPMENT.

State Equipment Numbers and corresponding Letter for Register Book.

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.

2 boats of 17' x 6'2" x 2'5
1 winch supplied by H. Achgelis Söhne
1 captan " " "
both satisfactory under trial
Quadrant 25.20 m Φ, 151 x 80.

Steel wire 165 m of 5 1/2"
84 " " 2 3/4"
120 " " 2 1/2"

Anchors + chain-cable:
3 common anchors made by Otto Gruson + Co.

N: of certificate:	Test-place:	Weight of anchor:	of stock:
24 966.	Berlin 21.1.37.	8.0.19.	2.0.8.
24 906.	" 27.1.37.	12.0.6.	3.0.12.
24 967.	" 21.1.37.	3.0.19.	0.3.6.

180 fthms. of steel chain cable of 1". Cable made by Fahlieper, Kettenfabrik. Tested in bordship.

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.

Oil bunker plan approved: 8/10/35

Plan of midship section profile and bulkheads approved: 10/9/35 and 24/9/35

After peak bkhd: frame 2
Plating top port 7.1
" bottom " 10
Stiffeners: L 115 X 65 X 7, spaced 610

Boundary bar at shell D 75 X 75 X 10
" " " deck D 65 X 65 X 9.5
Frame 4 plating 7.1
Stiffeners and boundary bars the same as at frame 2
2 wash plates 6 mm out of centre line with stiffeners D 75 X 65 X 7

Fresh water tanks frame 6-12 port and stb.
Bkhd. 6 plating 8.1 bottom port 10
Stiffeners D 75 X 65 X 9 L 130 X 65 X 7.5
Boundary bars at shell D 90 X 90 X 12
" " deck D 65 X 65 X 9.5

Bkhd. 12 plating 8.1
Stiffeners ▷ 75 X 65 a ⊏ 115 X 65 X 7
Boundary bars ▷ 65 X 65 X 10.5
" " at shell ▷ 75 X 75 X 10

Longt. bkhds frame 6-12
Plating 8.1
Stiffeners ▷ 130 X 75 X 9
Spacing 610
top Brackets 380 X 320 X 8, 3 R. 19 ϕ
Bottom 2 R. 16 ϕ
Boundary bars ▷ 75 X 75 X 10 and
▷ 65 X 65 X 10.5
Tank top plating 7.6
Beams ⊏ 115 X 65 X 7
Brackets 340 X 320 X 8.5, 3 R. 19 ϕ
Shell bar 75 X 75 X 9

Oil bunkers frames 38-49 (3 longt. bkhds)
Cross bkhds frames 38 and 49
Plating 7.8 7.0, 6.3 mm
Horizontal stiffeners spaced:
Bkhd 38: 632 mm
" 49: 664 mm.
Bkhd. 38. centre tanks horizontal stiffeners bulb angles 200 × 75 × 10 mm. 180 × 75 × 8 mm. 165 × 75 × 8 mm. 150 × 75 × 7.5 mm. 140 × 65 × 7.5 mm. 130 × 65 × 7.5 mm. side-tanks horizontal stiffeners ⊏ 115 × 65 × 7 mm. Bkhd. 49. centre tanks horizontal stiffeners ⊏ 165 × 75 × 8 mm ⊏ 150 × 75 × 7.5 mm; ⊏ 140 × 65 × 7.5 mm. ⊏ 130 × 65 × 7.5 mm. Boundary bars on shell angle 120 × 120 × 11 mm. Boundary bars on ~~shell~~ deck angle 75 × 75 × 10 mm.

centre line bkhd. Plating 7.8, 7.0, 6.3 mm Stiffeners ⊏ 180 × 75 × 10.5. ⊏ 130 × 65 × 8. brackets 450 × 450 × 9; 4 R. 19 mm dia.
Boundary bars at ends angle 75 × 75 × 8
" " " deck " 75 × 75 × 10
longitudinal side-bkhds: Plating + stiffeners the same.
Fore peak bkhd.: Plating 8.5; 7.5; 6.8 mm.
Stiffeners ⊏ 115 × 65 × 7. angle ~~115~~ × 65 × 7. angle 65 × 65 × 7 mm. Boundary bars on shell angle 120 × 120 × 11. Boundary bars on deck angle 65 × 65 × 9.5.

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

			Test Head above Top of Tank.	Deflection at Full Tank.	Deflection with Test Head.	Date.	Initials.
No. 1	Tank,	Port, Tested and found satisfactory.	see page 11				
	„	Starb'd, „ „					
2	„	Port, „ „					
	„	Starb'd, „ „					
3	„	Port, „ „					
	„	Starb'd, „ „					
4	„	Port, „ „					
	„	Starb'd, „ „					
5	„	Port, „ „					
	„	Starb'd, „ „					
6	„	Port, „ „					
	„	Starb'd, „ „					
7	„	Port, „ „					
	„	Starb'd, „ „					
8	„	Port, „ „					
	„	Starb'd, „ „					
9	„	Port, „ „					
	„	Starb'd, „ „					
10	„	Port, „ „					
	„	Starb'd, „ „					
11	„	Port, „ „					
	„	Starb'd, „ „					
12	„	Port, „ „					
	„	Starb'd, „ „					

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.

SURVEYORS' NOTES.

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

SURVEYORS' NOTES—*Continued.*

As the boiler bearers had shown vibration in a sea-way, it has been decided to fit an angle-keelson from the longitudinal engine foundation to bkhd 38: 150 × 75 × 10 mm and 11 mm brackets on both sides of boiler-bearers from frame 26 to 32.
This has been carried out at Rs. 1745 and 1746 and will be done at Rs. 1740/44 at next convenient opportunity.

REFRIGERATION.

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

State extent, particulars, illustrated by Sketches of Insulation.

LOAD LINE PARTICULARS WHERE

Registered Length Breadth Depth

Length on L.W.L. Beam at Gunwale Amidships

Moulded Depth as measured in Ship

Round of Beam Rise of Floor

Sheer at Stem Sheer at Sternpost

" ⅓ from Stem " ⅓ from Sternpost

Particulars of Sheer in Decks which are not parallel to Freeboard Deck

Fall in Sheer Thickness of Wood Deck

Extent of Wood Deck Thickness of Ceiling

Thickness of Sparring Depth of Framing

Drop in Tank Level Modifications in D.B. affecting Coef. (see Sketch).

Particuars of Erections (see Sketch)

	Length	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.4D. 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

Indian Summer " "

Winter Line below Centre of Disc

W.N.A. " "

Statutory Deck Line ins. above Top of Wood/Iron Deck at Side

Freeboard marks verified :—

Freeboard as assigned above subject to :— Freeboard given by German authorities.

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.

C. M. Johns

Surveyor to the British Corporation Register of Shipping and Aircraft.

It is submitted that this Report be approved.

Chief Surveyor.

6 OCT 1937

Approved by the Committee for the Class of BSx (Whaling Service) on the 6th Oct 1937

Secretary.