

No. 1924

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. 1241 No. in Register Book 3028

New Engine installed 1938 see Book
no. 2410.

S.S. 'HALAL' now 'Cecile Impleson'

Makers of Engines HOLEBY DIESEL MOTOR FABRIEK

Works No. 151-2

Makers of Main Boilers NONE

Works No. —

Makers of Donkey Boiler BOW McLACHLAN & CO^{LTD}

Works No. 1131

MACHINERY.



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THE BRITISH CORPORATION FOR THE SURVEY

AND

REGISTRY OF SHIPPING

Report No. No. in Register Book

Received at Head Office

12th May 1924

Surveyor's Report on the New Engines, Boilers, and Auxiliary Machinery of the ~~Single Screw~~ ~~Clin Quad~~ Screw MOTOR SHIP

"HALAL"

Official No.

Port of Registry

LONDON

Registered Owners

THE HALAL SHIPPING CO^Y LTD.

Engines Built by HOLEBY DIESELMOTOR FABRIK

at HOLEBY

Main Boilers Built by NONE

at

Donkey

BOW McLACHLAN & CO^Y LTD.

at

PAISLEY

Date of Completion

19-4-24

First Visit 7-5-23

Last Visit

19-4-24 Total Visits 41



Figures in Red. New Engines installed 3/38.
Diesel

2

RECIPROCATING ENGINES.

Works No. **151-2** No. of Sets **TWO** Description **FOUR CYCLE, SINGLE**

ACTING, NON REVERSIBLE, DIESEL ENGINES FITTED WITH FLYWHEEL. REVERSING THROUGH GEARING.

No. of Cylinders each Engine **FOUR** No. of Cranks **FOUR**
 Diars. of Cylinders **10"** **300"/m = 11.81"** Stroke **14 1/2"** **4400"/m = 15.7"**

Cubic feet in each L.P. Cylinder **0.99.**

Are Spring-loaded Relief Valves fitted to Top and Bottom of each Cylr.?

" " " each Receiver?

Type of H.P. Valves,

" 1st I.P. "

" 2nd I.P. "

" L.P. "

" Valve Gear

" Condenser

Cooling Surface sq. ft.

Diameter of Piston Rods (plain part) Screwed part (bottom of thread)

Material

Diar. of Connecting Rods (smallest part)

Material

" Crosshead Gudgeons

Length of Bearing

Material

No. of Crosshead Bolts (each)

Diar. over Thrd.

Thrds. per inch

Material

" Crank Pin

" Main Bearings

Lengths

" Bolts in each

Diar. over Thread

Threads per inch

Material

" Holding Down Bolts, each Engine

Diar.

No. of Metal Chocks

Are the Engines bolted to the Tank Top or to a Built Seat?

Are the Bolts tapped through the Tank Top and fitted with Nuts Inside?

If not, how are they fitted?

3

Connecting Rods, Forged by

Piston

Crossheads,

Connecting Rods, Finished by

Piston

Crossheads,

Date of Harbour Trial

" Trial Trip

Trials run at

Were the Engines tested to full power under Sea-going conditions?

If so, what was the I.H.P.?

Pressure in 1st I.P. Receiver,

Speed on Trial

If the Conditions on Trial were such that full power records were not obtained give the following estimated

data:—

Builders' estimated I.H.P.

Estimated Speed

N.B. FURTHER PARTICULARS ON LOOSE FORM ON

PAGE 4.



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TURBINE ENGINES.

Works No. _____ Type of Turbines _____

No. of H.P. Turbines _____ No. of L.P. _____ No. of L.P. _____ No. of Stern _____

Are the Propeller Shafts driven direct by the Turbines or through Gearing? _____

Is Single or Double Reduction Gear employed? _____

Diam. of 1st Reduction Pinion _____ } Width _____ Pitch of Teeth _____
" 1st " Wheel _____

Estimated Pressure per lineal inch _____

Diam. of 2nd Reduction Pinion _____ } Width _____ Pitch of Teeth _____
" 2nd " Wheel _____

Estimated Pressure per lineal inch _____

Revs. per min. of H.P. Turbines at Full Power _____ S.H.P. _____

" " L.P. " " _____

" " L.P. " " _____

" " 1st Reduction Shaft _____

" " 2nd " _____

" " Propeller Shaft _____

Total Shaft Horse Power _____

Date of Harbour Trial _____

" Trial Trip _____

Trials run at _____

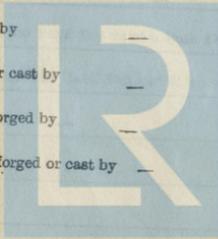
Speed on Trial _____ Knots. Propeller Revs. per min. _____ S.H.P. _____

Turbine Spindles forged by _____

" Wheels forged or cast by _____

Reduction Gear Shafts forged by _____

" Wheels forged or cast by _____



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No. of Compressed Air Reservoirs, 5. Working Pressure, 60 kg/cm^2 Test Pressure, 120 kg/cm^2
Dimensions, ^{1 off for each engine} $8.66''$ out dia. x $5.7\frac{3}{4}''$ for injection $85\frac{3}{4} \times 10''$ 1706.8 lbs/ft^3
^{3 off starting air} $15.74''$ " " x $6'-2''$

Description, The bottles have been inspected water tested at 1700 lbs by Lloyd's Surveyor in Düsseldorf and stamped,

No. and Diar. of Safety Valves (each), one on each engine cylinder $.59''$ dia. 15 m .
one on each injection air bottle $.59$ dia. 15 m .

Particulars of Fuel Pump, 2 pumps on each engine, one for each pair of cylinders the pumps are driven by the vertical shaft for cams.

Particulars of Cooling Water Circulators, 1 common plunger pump on each engine $3.149''$ dia. $2.99''$ stroke driven by the main engines (the plunger is interchangeable with the help plunger)

System of Governing, on the vertical shaft for operating cam a common governor is fitted regulating the supply on the suction side of fuel pumps.

System of Lubrication, Forced lubrication the plunger pump is driven by the vertical shaft

Deck Winches and Capstans, how Driven? Steam driven.

Refrigerator, None.

Electric Light, Electric light throughout. 2 K.W. Dynamo Petrol Paraffin engine.

AUXILIARY BOILER—

Built by Bow Backham & Co. Ltd. Works No. 1131

Description, Single-end firing cylindrical multitubular Scotch

Number, one. Greatest Int. Diar., $5'-6''$ Height, $6'-0''$ Pressure, 100 lbs.
Length, $7'-9''$

Heating Surface (each Blr.), 179.1 sq ft Grate Surface (each Blr.), 7.9 sq ft

No. of Safety Valves (each Blr.), 2 Diar., $1\frac{1}{2}''$ Draught, steam or compressed air.

Fuel to be used, Oil fuel.

Further Particulars:—

Date of Harbour Trial, 15.4.24 Date of Trial Trip, 19.4.24

Trial Trip, where Run? Firth of Clyde. Speed, 9.67 Knots.

Max. Press. in Cylrs., 90 lbs. Mean Press., 101 lbs. Revs. per Min., 241. I.H.P., 433.3 $\eta = 79\%$

B.H.P., 342.1
Lloyd's Register
Robert Lloyd
Surveyors.

The British Corporation for the Survey and Registry of Shipping.

INTERNAL COMBUSTION ENGINES.

*new engine installed 1938
" see separate books*

Vessel's Name, "HALAL" *now "Beile Wapleson"*

Built by BOW McLACHLAN & CO LTD. Ship No. 413.

ENGINES, Single or Twin-Screw, TWIN SCREW Estimated B.H.P., 160 BHP EACH

Built by HOLEBY DIESEL MOTOR FABRIK LTD DENMARK Works No. 151-2

Description, FOUR CYCLE, SINGLE ACTING, NON-REVERSIBLE, DIESEL ENGINE FITTED FLYWHEEL
REVERSING THROUGH GEARING.

No. of Working Cylinders (each Engine), FOUR. Cub. Ft., each Cyl., 0.99

Diar. of " " 300^{m/m}, 11.81" Stroke, 400^{m/m}, 15.7" Estimated Revs. per Min., 240

Diar. of Crank Shaft (made), 175^{m/m}, 6.88" Thrust. 140^{m/m}, 5.51" Intermed., Propeller, 142^{m/m}, 5.59"
" " (by rule), " " " "

No. of Main Bearings, 5 Length, 280^{m/m}, 11.02" Dist. between Edges, 370^{m/m}, 14.56"

Thickness of Web (made), 94^{m/m}, 3.7" Breadth of Web, 270^{m/m}, 10.63"
" " (by rule), " " " "

Diar. of Propellers, 5'-3" Pitch, 4'-9" Surface (each), 10.8 $\frac{1}{2}$

Coeff. of Displacement at 4/5th Mld. Depth, .6.

Max. Initial Working Pressure, 35 kg/cm². 500 lbs/sq in. Estimated Mean Pressure, 7 kg/cm². 99.56 lbs/sq in.

No. of Scavenging Pumps, — Diar., — Stroke, —

Description, —

Pressure of Scavenging Air, —

No. of Main Air Compressors, One on each engine

No. of Stages (each), 2 stages

Stage 1:—Diar., 200^m/m, 7.87' Stroke, 210^m/m

8.26' Pressure, 7 kg/cm² 99.56 lbs/sq in.

Stage 2:— " 60^m/m, 2.36" " 210^m/m

8.26 " 60 kg/cm² 853.4 " " "

Description, Vertical two stages driven by main crank shaft.

No. of Auxiliary Air Compressors, One.

No. of Stages (each), 2 stages

Stage 1:—Diar., 130^m/m, 5.11" Stroke, 110^m/m

4.33" Pressure, 7 kg/cm² 99.56 lbs/sq in.

Stage 2:— " 40^m/m, 1.57" " " 4.33"

" 60 kg/cm² 853.4 " " "

Description, Vertical 2 stages driven through friction clutch from a 6/8 HP Paraffin vertical single cylinder engine. 180^m/m dia x 240^m/m stroke 400 Revs.



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No. of Blades each Propeller **4** Fitted or Solid? **SOLID**
 Material of Blades **MANGANESE BRONZE** Boas **MANGANESE BRONZE**
 Diam. of Propellers **5'-3"** Pitch **4'-9"** Surface (each **10.8** S. ft.
 Coefficient of Displacement of Vessel at $\frac{1}{2}$ Moulded Depth **.6**

Crank Shafts Forged by _____ Material **STEEL**
 " Pins " " " " "
 " Webs " " " " "
 Thrust Shafts " " " " "
 Intermed. " " " " "
 Propeller " " _____ " **STEEL**
 SPARE " " **LANGLEY FORGE CO LTD**
 Crank " Finished by _____
 Thrust " " " " "
 Intermed. " " " " "
 SPARE Propeller " " **BOW MCLACHLAN & CO LTD**

STAMP MARKS ON SHAFTS.

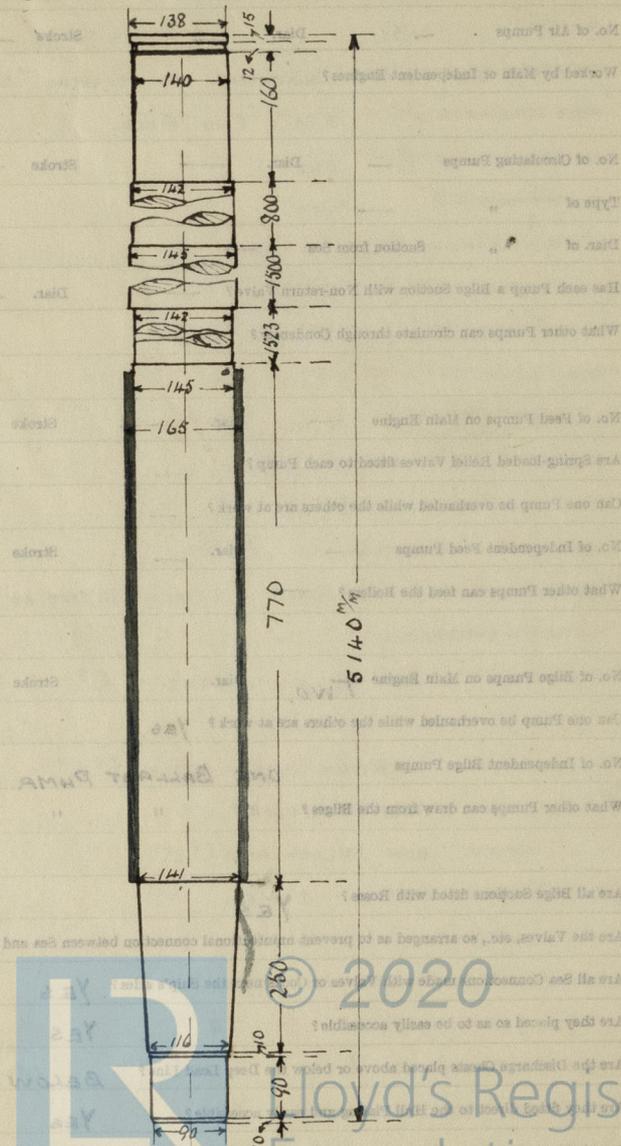
SPARE PROPELLER SHAFT.

B.C.
 No 9031
 RLG
 2.5-2.24

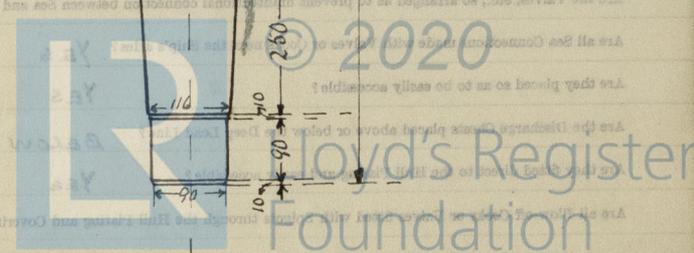
CRANK SHAFT NV. HOLEBY.
 15.5.20AB.
 ANO 3086
 SN 1262

PROPELLER BC 570 8-6-23 11-7-23A
 SHAFTS. BC 567 4-6-23 11-7-23B.

SKETCH OF PROPELLER SHAFT.



No. of Air Pumps _____
 Worked by Main or Independent Engines? _____
 No. of Overhauling Pumps _____
 Type of _____
 Diam. of _____
 Has each Pump a High Section with 2 or more Vanes? _____
 What other Pumps can operate through Connections? _____
 No. of Lead Pumps on Main Engines _____
 Are Spring-loaded Relief Valves fitted to each Pump? _____
 Can one Pump be overhauled while the others are at work? _____
 No. of Independent Lead Pumps _____
 What other Pumps can feed the Main Engines? _____
 No. of High Pumps on Main Engines _____
 Can one Pump be overhauled while the others are at work? _____
 No. of Independent High Pumps _____
 What other Pumps can draw from the Highs? _____
 Are all High Sections fitted with Rovers? _____
 Are the Valves, etc., so arranged as to prevent accidental connection between the Highs? Yes
 Are all the Connections made with Valves or other devices which can be easily accessible? Yes
 Are the Discharge Pipes fitted above or below the Main Engines? Below
 Are all the Connections made with Valves or other devices which can be easily accessible? Yes



PUMPS, ETC. OF MERCHANT

No. of Air Pumps ———— Diar. ———— Stroke ————
 Worked by Main or Independent Engines? ————

No. of Circulating Pumps ———— Diar. ———— Stroke ————
 Type of " ————
 Diar. of " Suction from Sea ————
 Has each Pump a Bilge Suction with Non-return Valve? ———— Diar. ————
 What other Pumps can circulate through Condenser? ————

No. of Feed Pumps on Main Engine ———— Diar. ———— Stroke ————
 Are Spring-loaded Relief Valves fitted to each Pump? ————
 Can one Pump be overhauled while the others are at work? ————

No. of Independent Feed Pumps ———— Diar. ———— Stroke ————
 What other Pumps can feed the Boilers? ————

No. of Bilge Pumps on Main Engine TWO Diar. ———— Stroke ————
 Can one Pump be overhauled while the others are at work? YES

No. of Independent Bilge Pumps ONE BALLAST PUMP
 What other Pumps can draw from the Bilges? " " "

Are all Bilge Suctions fitted with Roses? YES
 Are the Valves, etc., so arranged as to prevent unintentional connection between Sea and Bilges? YES
 Are all Sea Connections made with Valves or Cocks next the Ship's sides? YES
 Are they placed so as to be easily accessible? YES
 Are the Discharge Chests placed above or below the Deep Load Line? BELOW
 Are they fitted direct to the Hull Plating and easily accessible? YES
 Are all Blow-off Cocks or Valves fitted with Spigots through the Hull Plating and Covering Plates or Flanges on the Outside? YES

DONKEY BOILERS

No. of Boilers ONE
 Type CYLINDRICAL MULTITUBULAR "SCOTCH"
 Single or Double-ended SINGLE END FIRING
 No. of Furnaces in each ONE
 Type of Furnaces PLAIN
 Date when this approved 1-2-23
 Approved Working Pressure 100 lbs.
 Hydraulic Test Pressure 200 lbs.
 Date of Hydrostatic Test 23-5-23
 when Boiler Taken out 8-4-23
 Pressure at which Tested 100 lbs.
 Date of Accumulation Test 8-4-23
 Maximum Pressure under Accumulation Test 100 lbs.
 System of Drafting NATURAL OIL FUEL, STEAM AS AIR
 Can Boiler be worked separately? —
 Material of Plates W.B. BIRMINGHAM & CO.
 Rivet Bar LANKSHIRE STEEL CO. LTD.
 Rivets RIFF BOLT NUT CO. LTD.
 Furnace Dowel MELNORIAN'S CO. LTD.
 Greatest Internal Diam. of Boiler 2'-6"
 Length 6'-0"



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Are the Water Gauges fitted direct to the Boiler Shells or mounted on Pillars? **DIRECT**

Are the Water Gauge Pillars fitted direct to the Boiler Shells or connected by Pipes? **—**

Are these Pipes connected to Boilers by Cocks or Valves? **—**

Are Blow-off Cocks or Valves fitted on Boiler Shells? **COCKS**

No. of Strakes of Shell Plating in each Boiler **ONE.**

Plates in each Strake **ONE.**

Thickness of Shell Plates Approved **3/8"**

in Boilers **3/8"**

Are the Rivets Iron or Steel? **STEEL**

Are the Longitudinal Seams Butt or Lap Joints? **BUTT STRAPS.**

Are the Butt Straps Single or Double? **DOUBLE BUTT STRAPS.**

Are the Double Butt Straps of equal width? **EQUAL WIDTH.**

Thickness of outside Butt Straps **3/8"**

inside **3/8"**

Are Longitudinal Seams Hand or Machine Riveted? **YES**

Are they Single, Double, or Treble Riveted? **DOUBLE RIVETED.**

No. of Rivets in a Pitch **TWO.**

Diam. of Rivet Holes **5/8"** Pitch **2 15/16"**

No. of Rows of Rivets in Centre Circumferential Seams **—**

Are these Seams Hand or Machine Riveted? **—**

Diam. of Rivet Holes **—** Pitch **—**

No. of Rows of Rivets in Front End Circumferential Seams **ONE.**

Are these Seams Hand or Machine riveted? **HAND**

Diam. of Rivet Holes **3/4"** Pitch **1 1/2"**

No. of Rows of Rivets in Back End Circumferential Seams **ONE.**

Are these Seams Hand or Machine Riveted? **MACHINE**

Diam. of Rivet Holes **3/4"** Pitch **1 1/2"**

Size of Manholes in Shell **15" x 11" MANHOLE ALTERED TO END PLATE**

Dimensions of Compensating Rings **(2' - 1 1/4" x 1' - 9 1/4" x 3/8" CANCELLED)**



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Thickness of End Plates in Steam Space Approved $19\frac{1}{32}$ "

" " " " " in Boilers $19\frac{1}{32}$ "

Pitch of Steam Space Stays 14 " ONE ROW.

Diar. " " " " Approved $17\frac{1}{8}$ " Threads per Inch 6

" " " " " in Boilers $17\frac{1}{2}$ " " 6

Material of " " " STEEL

How are Stays Secured? DOUBLE NUTS ONE EACH SIDE OF PLATE.

Diar. and Thickness of Loose Washers on End Plates NONE

" " Riveted " " " " "

Width " " Doubling Strips " " "

Thickness of Middle Back End Plates Approved $19\frac{1}{32}$ "

" " " " " in Boilers $19\frac{1}{32}$ "

Thickness of Doublings in Wide Spaces between Fireboxes NONE.

Pitch of Stays at " " " " " -

Diar. of Stays Approved - Threads per Inch -

" " in Boilers - " -

Material " -

Are Stays fitted with Nuts outside? -

Thickness of Back End Plates at Bottom Approved $19\frac{1}{32}$ "

" " " " " in Boilers $19\frac{1}{32}$ "

Pitch of Stays at Wide Spaces between Fireboxes NONE

Thickness of Doublings in " " " "

Thickness of Front End Plates at Bottom Approved $19\frac{1}{32}$ "

" " " " " in Boilers $19\frac{1}{32}$ "

No. of Longitudinal Stays in Spaces between Furnaces NONE



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Diar. of Stays Approved NONE Threads per Inch -

" " in Boilers -

Material " -

Thickness of Front Tube Plates Approved $1\frac{9}{32}$ "

" " " " in Boilers $1\frac{9}{32}$ "

Pitch of Stay Tubes at Spaces between Stacks of Tubes $13\frac{1}{4}$ " x 7"

Thickness of Doublings in " " " NONE

" Stay Tubes at " " " $\frac{3}{8}$ "

Are Stay Tubes fitted with Nuts at Front End?

Thickness of Back Tube Plates Approved $1\frac{9}{32}$ "

" " " in Boilers $1\frac{9}{32}$ "

Pitch of Stay Tubes in Back Tube Plates 7" x 7"

" Plain " $3\frac{1}{2}$ " x $3\frac{1}{2}$ "

Thickness of Stay Tubes $\frac{3}{8}$ "

" Plain " 11 WG.

External Diar. of Tubes $2\frac{1}{2}$ "

Material " IRON.

Thickness of Furnace Plates Approved $1\frac{3}{32}$ "

" " " in Boilers

Smallest outside Diar. of Furnaces $2' - 3\frac{3}{4}"$

Length between Tube Plates $4' - 1\frac{1}{2}"$

Width of Combustion Chambers (Front to Back) $1' - 4\frac{5}{16}"$

Thickness of " " Tops Approved $1\frac{3}{32}"$

" " " in Boilers $1\frac{3}{32}"$

Pitch of Screwed Stays in C.C. Tops ONE STAY IN EACH GIRDER



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Diar. of Screwed Stays Approved $1\frac{1}{8}$ " Threads per Inch 9
 " " " in Boilers $1\frac{1}{8}$ " 9
 Material " " STEEL

Thickness of Combustion Chamber Sides Approved $1\frac{9}{32}$ "
 " " " " in Boilers $1\frac{9}{32}$ "
 Pitch of Screwed Stays in C.O. Sides $7\frac{1}{2}$ "
 Diar. " " Approved $1\frac{1}{8}$ " Threads per Inch 9
 " " " in Boilers $1\frac{1}{8}$ " 9
 Material " " STEEL

Thickness of Combustion Chamber Backs Approved $1\frac{13}{32}$ "
 " " " " in Boilers $1\frac{13}{32}$ "
 Pitch of Screwed Stays in C.O. Backs 7" x 7"
 Diar. " " Approved $1\frac{1}{8}$ " Threads per Inch 9
 " " " in Boilers $1\frac{1}{8}$ " 9
 Material " " STEEL

Are all Screwed Stays fitted with Nuts inside C.O.? YES.

Thickness of Combustion Chamber Bottoms $1\frac{13}{32}$ "
 No. of Girders over each Wing Chamber } 6 GIRDERS IN ALL
 " " " Centre " }
 Depth and Thickness of Girders $4\frac{5}{8}$ " 2 plates $\frac{1}{2}$ "
 Material of Girders STEEL
 No. of Stays in each ONE.

No. of Tubes, each Boiler 32 PLAIN 18 STAY. 50 TOTAL.

Size of Lower Manholes 6" x 4" HANDHOLE.

VERTICAL DONKEY BOILERS

No. of Boilers
 Type
 Greatest Int. Diam.
 Height of Boiler Crown above Fire Grate
 Rise of Boiler Crown Flat or Dished?
 Internal Radius of Dished Back
 Thickness of Plates
 Description of Beams in Boiler Crown
 Diam. of Rivet Holes
 Pitch
 Width of Overlap
 Height of Firebox Crown above Fire Grate
 Rise of Firebox Crown Flat or Dished?
 Internal Radius of Dished Crown
 Thickness of Plates
 Diam. of Lower Stays
 External Diam. of Firebox at Top
 Thickness of Plates
 No. of Water Tubes
 Int. Diam.
 Diameter of Water Tubes
 Size of Manhole in Shell
 Dimensions of Compression Ring
 Heating Surface, each Boiler
 Gross Surface

SUPERHEATERS



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VERTICAL DONKEY BOILERS.

No. of Boilers — Type —

Greatest Int. Diar. — Height —

Height of Boiler Crown above Fire Grate —

Are Boiler Crowns Flat or Dished? —

Internal Radius of Dished Ends — Thickness of Plates —

Description of Seams in Boiler Crowns —

Diar. of Rivet Holes — Pitch — Width of Overlap —

Height of Firebox Crowns above Fire Grate —

Are Firebox Crowns Flat or Dished? —

External Radius of Dished Crowns — Thickness of Plates —

No. of Crown Stays — Diar. — Material —

External Diar. of Firebox at Top — Bottom — Thickness of Plates —

No. of Water Tubes — Ext. Diar. — Thickness —

Material of Water Tubes —

Size of Manhole in Shell —

Dimensions of Compensating Ring —

Heating Surface, each Boiler — Grate Surface —

SUPERHEATERS.

Description of Superheaters —

Where situated? —

Which Boilers are connected to Superheaters? —

Can Superheaters be shut off while Boilers are working? —

No. of Safety Valves on each Superheater — Diar. —

Are „ „ fitted with Easing Gear? —

Date of Hydraulic Test — Test Pressure —

Date when Safety Valves set — Pressure on Valves —

MAIN STEAM PIPES

No. of Laps —

Material —

Joined, Welded or Bolted —

Internal Diar. —

Thickness —

How are Flanges mounted? —

Date of Hydraulic Test —

Test Pressure —

No. of Laps —

Material —

Joined, Welded or Bolted —

Internal Diar. —

Thickness —

How are Flanges mounted? —

Date of Hydraulic Test —

Test Pressure —

No. of Laps —

Material —

Joined, Welded or Bolted —

Internal Diar. —

Thickness —

How are Flanges mounted? —

Date of Hydraulic Test —

Test Pressure —



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MAIN STEAM PIPES.

No. of Lengths			
Material			
Brazed, Welded or Seamless			
Internal Diar.			
Thickness			
How are Flanges secured?			
Date of Hydraulic Test			
Test Pressure			
No. of Lengths			
Material			
Brazed, Welded or Seamless			
Internal Diar.			
Thickness			
How are Flanges secured?			
Date of Hydraulic Test			
Test Pressure			
No. of Lengths			
Material			
Brazed, Welded or Seamless			
Internal Diar.			
Thickness			
How are Flanges secured?			
Date of Hydraulic Test			
Test Pressure			

FEED WATER HEATERS.

FEED WATER FILTERS.



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SPARE GEAR

No. of Top End Bolts. 2 sets No. of Bot. End Bolts. 2 sets No. of Cylinder Cover Studs 1 set

" Coupling Bolts	" Main Bearing Bolts 2	" Valve Chest "
" Junk Ring Bolts	" Feed Pump Valves	" Bilge Pump Valves
" H.P. Piston Rings	" I.P. Piston Rings	" L.P. Piston Rings
" " Springs	" " Springs	" " Springs
" Safety Valve "	" Fire Bars —	" Feed Check Valves 1
" Piston Rods	" Connecting Rods	" Valve Spindles
" Air Pump Rods	" Air Pump Buckets	" Air Pump Valves
" Cir. "	" Cir. "	" Cir. "
" Crank Shafts	" Crank Pin Bushes	" Crosshead Bushes
" Propeller Shafts 1	" Propellers 1 R. 1 L.	" Propeller Blades
" Boiler Tubes	" Condenser Tubes	" Condenser Ferrules

OTHER ARTICLES OF SPARE GEAR:—

- 1 cylinder head each engine.
- 2 pistons
- Air comp. valve casing each engine
- 4 cooling coils for air compressor each engine.
- 1 set ballast pump valves.
- 8 valve casings for exhaust
- 8 Valves with top guide
- 16 springs for same
- 4 valve casings for fuel valves.
- 4 intermediate guides for do.
- 4 pulverizer pipes complete
- 8 valve spindles with nuts.
- 4 springs do.
- 2 valve casings for starting valves

- 2 flanges for starting valves?
- 2 valve spindles with sockets
- 4 springs
- 2 delivery valves complete for LP compressor
- 2 suction " " " " "
- 2 " " " " " HP "
- 2 delivery " " " " "
- 2 safety valves complete for eng cylinders
- 24 piston rings
- 4 " " " " LP compressor
- 4 " " " " HP " with distance rings
- 2 crosshead pins & nuts
- 4 sets of pistons & valves for fuel pumps.
- 4 valves for cooling water pump
- 4 " " " bilge " " "
- Sundry studs bolts & nuts.
- " flanges & pipe connections
- Packing for oil fuel pumps.



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ELECTRIC LIGHTING.

Installation Fitted by **BOW Mc LACHLAN & CO L^{TD}**No. and Description of Dynamos **ONE PORT SIDE LOWER PLATFORM**

Makers of Dynamos

Capacity " **2 KW.** Amperes, at **110** Volts, **850** Revols. per Min.Current Alternating or Continuous **CONTINUOUS.**Single or Double Wire System **DOUBLE**Position of Dynamos **PORT SIDE LOWER PLATFORM.**

" Main Switch Board " " " "

No. of Circuits to which Switches are provided on Main Switch Board **FOUR.**

Particulars of these Circuits:—

Circuit.	Number of Lights.	Candle Power.	Current Required. Amps.	Size of Conductor.	Current Density.	Conductivity of Conductor.	Insulation Resistance per Mile.
1 ENGINE RM.	16	16	3	3/036	12 AMP. 100%	25-00 MEGS	
2 NAVIGATION.	6	4-32 2-16.	4 1/2	"	"	"	
3 ACCOMMOD. AFT	13	16	2 1/2	"	"	"	
4. " FOR P.	31	16.	6	"	"	"	

Total No. of Lights **66** No. of Motors driving Fans, &c. No. of Heaters

Current required for Motors and Heaters



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Positions of Auxiliary Switch Boards, with No. of Switches on each **DISTRIBUTION BOARDS**

ENGINE RM., CHART RM., SALOON,
CREW SPACE AFT.

Circuit	Number of Lamps	Current in Amps	Size of Wires	Current in Amps	Size of Wires	Location of Distribution	Particulars of these Circuits
ENGINE RM.	16	16	16	16	16	ENGINE RM.	
NAVIGATION	2	2	2	2	2	NAVIGATION	
ACCUMULATOR	16	16	16	16	16	ACCUMULATOR	
FOR	16	16	16	16	16	FOR	

Are Cut-outs fitted as follows?—

On Main Switch Board, to Cables of Main Circuits

On Aux. " " each Auxiliary Circuit

Wherever a Cable is reduced in size

To each Lamp Circuit

To both Flow and Return Wires of all Circuits when the Double-Wire System is adopted

Are the Fuses of Standard Sizes?

Are all Switches and Cut-outs constructed of Non-inflammable Material?

Are they placed so as to be always and easily accessible?

Smallest Single Wire used, No. 3/029 S.W.G., Largest, No. 7/052 S.W.G.

How are Conductors in Engine and Boiler Spaces protected? V.I.R. LEAD COVERED & ARMOURD

" Saloons, State Rooms, &c., " V.I.R. " "

What special protection is provided in the following cases?—

(1) Conductors exposed to Heat or Damp LEAD COVERED.

(2) " " passing through Bunkers or Cargo Spaces ARMOURD.

(3) " " Deck Beams or Bulkheads HOLES BUSHED WITH LEAD

Are all Joints in Cables properly soldered and thoroughly Insulated so that the efficiency of the Cables

is unimpaired? NONE

Are all Joints in accessible positions, none being made in Bunkers or Cargo Spaces? NONE

Are all Hull Connections for Single-Wire Systems made with Screws of large Surface? —

Are the Dynamos, Motors, Main and Branch Cables, so placed that the Compasses are not injuriously

affected by them? YES.

Have Tests been made to prove that this condition has been satisfactorily fulfilled? YES.

Has the Insulation Resistance over the whole system been tested? YES.

What does the Resistance amount to? 3 MEG. Ohms.

Is the Installation supplied with a Voltmeter? YES

" " " an Ampere Meter? YES.

Date of Trial of complete Installation 17-4-24 Duration of Trial 4 hours.

Have all the requirements of Section 42 been satisfactorily carried out? YES.

Robert H. Greig



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GENERAL CONSTRUCTION.

Have the Machinery and Boilers been constructed in accordance with the requirements of the Rules and the

Approved Plans? **YES**

If not, give details of the points of difference, and state when these were sanctioned by the Chief Surveyor.

Have Tests been made to prove that this condition has been satisfactorily fulfilled? **YES**

Has the Installation Resistance over the whole system been tested? **YES**

What does the Resistance amount to? **3 Mac**

Is the Installation supplied with a Voltmeter? **YES**

Is an Ampere Meter? **YES**

Date of Trial of complete Installation? **17.1.24**

Duration of Trial? **4 Hours**

Have all the requirements of Section 42 been satisfactorily carried out? **YES**

Whenever a Cable is replaced in use? **YES**

To what Order? **YES**

Are the Materials used in the Construction of Engines and Boilers, so far as could be seen, sound and trustworthy? **YES**

Is the Workmanship throughout thoroughly satisfactory? **YES**

The above correctly describes the Machinery of the S.C. "HALAL"
as ascertained by ^{me}me from personal examination

Robert L. Greig
Engineer Surveyor to the British Corporation for the Survey and Registry of Shipping.

Fees—

MAIN BOILERS.		£	s.	d.
H.S.	Sq. ft.	:	:	
G.S.	"	:	:	
DONKEY BOILERS.				
H.S.	Sq. ft.	:	:	
G.E.	"	:	:	
		£	:	:
ENGINES.				
L.P.C.	Cub. ft.	:	:	
		£	:	:
Testing, &c. ...		:	:	
		£	:	:
Expenses ...		:	:	
Total ...	£	:	:	

It is submitted that this Report be approved,

W. Foster King
Chief Surveyor.

Approved by the Committee for the Class of M.B.S.* on the

28th May 1924

Fees advised
Fees paid



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