

No. 1924

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. 1741 No. in Register Book 3028

*New Engine installed 1938 see Book
no. 2410.*

S.S. 'HALAL' now 'Cecile Mapleson'

Makers of Engines HOLEBY DIESEL MOTOR FABRIK

Works No. 151-2

Makers of Main Boilers NONE

Works No. —

Makers of Donkey Boiler BOW McLAHLAN & CO LTD

Works No. 1131

MACHINERY.



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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~~ ~~Twin Quadruple~~ Screw Motor SHIP

"HALAL"

Official No.

Port of Registry

LONDON

Registered Owners

THE HALAL SHIPPING CO. LTD.

Engines Built by

HOLEY DIESELMOTOR FABRIK

at

HOLEBY

Main Boilers Built by

NONE

at

Donkey

BOW McLACHLAN & CO. LTD.

at

PAISLEY

Date of Completion

19-4-24

First Visit

7-5-23

Last Visit

19-4-24

Total Visits 41

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If not, how are they fitted? _____

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 _____

" " I.P. " " _____ S.H.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. \times $5.7\frac{3}{4}''$ for injection 85.4 lbs ^{3 off starting air} $15.74''$ " " \times $6'-2''$ 1706.8 lbs

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 & MacLellan & 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., 900 lbs. Mean Press., 101 lbs. Revs. per Min., 241. I.H.P., 433.3 $\eta = 79\%$

B.H.P., 342.1

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Robt & Co. g
Surveyors.

The British Corporation for the Survey and Registry of Shipping.

INTERNAL COMBUSTION ENGINES.

Vessel's Name,

"HALAL"

now "Beile Maphison"

new engine installed 1938
" see separate book.

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., 11.81" Stroke, 400"/m., 15.7" Estimated Revs. per Min., 240

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

" " (by rule),

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

Thickness of Web (made), 94"/m., 3.7" Breadth of Web, 270"/m., 10.63"

" " (by rule),

Diar. of Propellers, 5'-3"

Pitch, 4'-9"

Surface (each), 10.8 sq

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

Max. Initial Working Pressure, 35 kg/cm^2 $500 \text{ lbs per sq in}$ Estimated Mean Pressure, 7 kg/cm^2 $99.56 \text{ lbs per sq in}$

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 mm , $7.87'$ Stroke, 210 mm

$8.26'$ Pressure, 7 kg/cm^2 $99.56 \text{ lbs per sq in}$

Stage 2:— " 60 mm , $2.36'$ " 210 mm

$8.26'$ " 60 kg/cm^2 853.4

Description, *Vertical two stages driven by main crank shaft.*

No. of Auxiliary Air Compressors, *One.*

No. of Stages (each), *2 stages*

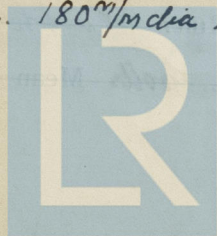
Stage 1:—Diar., 130 mm , $5.11'$ Stroke, 110 mm $4.33'$

Pressure, 7 kg/cm^2 $99.56 \text{ lbs per sq in}$

Stage 2:— " 40 mm , $1.57'$ " " $4.33'$

" 60 kg/cm^2 853.4

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



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TURBO-ELECTRIC INSTALLATION DESCRIPTION OF MACHINERY

No. of Turbo-Generating Sets	Capacity of each	Type of Turbines employed	Description of Generators
No. of Motors driving Propeller Shafts			
Are the Propeller Shafts driven direct by the Motors or through Gearings?			
Is Single or Double Reduction Gear employed?			
Description of Motors			
Diam. of 1st Reduction Union			
Diam. of 2nd Reduction Union			
Estimated Horsepower per shaft each			
Diam. of 3rd Reduction Union			
Diam. of 4th Reduction Union			
Estimated Horsepower per shaft each			
Horsepower per min. of Generator at Full Power			
Motors			
1st Reduction Shaft			
2nd			
Propellers at Full Power			
Total Shaft Horsepower			
Date of Harbort Trial			



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TURBO-ELECTRIC PROPELLING MACHINERY.

No. of Turbo-Generating Sets	—	Capacity of each	—
Type of Turbines employed	—		
Description of Generators	—		
No. of Motors driving Propeller Shafting	—		
Are the Propeller Shafts driven direct by the Motors or through Gearing?	—		
Is Single or Double Reduction Gear employed?	—		
Description of Motors	—		
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 Generators at Full Power	—		
" Motors "	—		
" 1st Reduction Shaft	—		
" 2nd "	—		
" Propellers at Full Power	—		
Total Shaft Horse Power	—		
Date of Harbour Trial	—		
" Trial Trip	—		
Trials run at	—		
Speed on Trial	—	Knots. Propeller Revs. per min.	— S.H.P. —

Makers of Turbines

" Generators	—		
" Motors	—		
" Reduction Gears	—		
Turbine Spindles forged by	—		
" Wheels forged or cast by	—		
Reduction Gear Shafts forged by	—		
" Wheels forged or cast by	—		

DESCRIPTION OF INSTALLATION.

Sketch showing shafting

Diagram of the installation showing the arrangement of the turbines, generators, and propellers, and the shafting connecting them.

Details of the installation, including the location of the turbines, generators, and propellers, and the shafting connecting them.

Additional details of the installation, including the location of the turbines, generators, and propellers, and the shafting connecting them.

Further details of the installation, including the location of the turbines, generators, and propellers, and the shafting connecting them.

Final details of the installation, including the location of the turbines, generators, and propellers, and the shafting connecting them.



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SHAFTING.

Are the Crank Shafts Built or Solid? **SOLID**

No. of Lengths in each **ONE** Angle of Cranks **180°**

Diar. by Rule **175^m/m** Actual **53³/₄"** In Way of Webs **178^m/m**

Length between Webs **178^m/m**

Greatest Width of Crank Webs **270** Thickness **94**

Least " " **270** " " **94**

Diar. of Keys in Crank Webs **—** Length **—**

" Dowels in Crank Pins **—** Length **—** Screwed or Plain **—**

No. of Bolts each Coupling **6** Diar. at Mid Length **30^m/m** Diar. of Pitch Circle **270^m/m**

Greatest Distance from Edge of Main Bearing to Crank Web **284^m/m**

Type of Thrust Blocks **HORSE SHOE**

No. " Rings **4**

Diar. of Thrust Shafts at bottom of Collars **140^m/m** No. of Collars **4**

" " Forward Coupling **160^m/m** At Aft Coupling **140^m/m**

Diar. of Intermediate Shafting by Rule **NO SEPARATE** Actual **31¹/₂"** No. of Lengths **—**

No. of Bolts, each Coupling **6** Diar. at Mid Length **28^m/m** Diar. of Pitch Circle **310^m/m**

Diar. of Propeller Shafts by Rule **Actual** **141^m/m** At Couplings **140^m/m**

Are Propeller Shafts fitted with Continuous Brass Liners? **ONE SHORT LINER**

Diar. over Liners **165^m/m** Length of After Bearings **2'-0"**

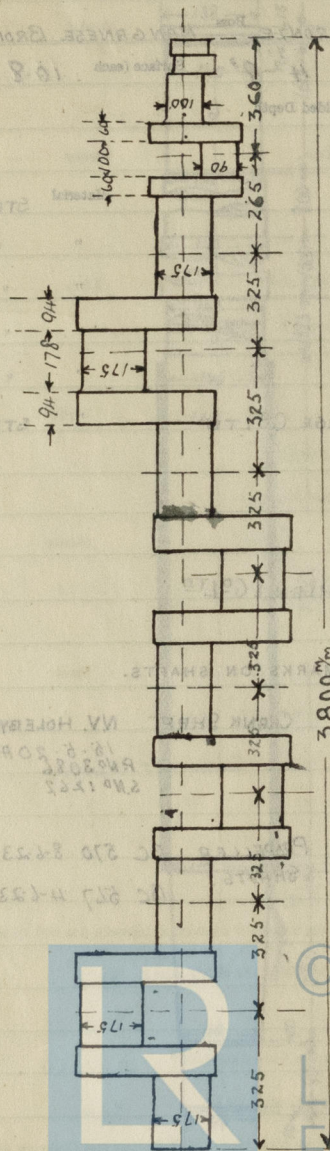
Of what Material are the After Bearings composed? **WHITE METAL & LIGNUM VITAE IN A BRACKET**

Are Means provided for lubricating the After Bearings with Oil? **YES**

" " to prevent Sea Water entering the Stern Tubes? **YES**

If so, what Type is adopted? **GRAVITATION SYSTEM WITH GLAND AT AFTER END**

SKETCH OF CRANK SHAFT.



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PUMPS, ETC.

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 of Boilers CLINDON
 Single or Double-ended SINGLE END FIRED
 No. of Furnaces in each ONE
 Type of Furnaces PLAIN
 Date when first approved 1-2-22
 Approved Working Pressure 100 lbs
 Hydraulic Test Pressure 200 lbs
 Date of Hydraulic Test 22-5-22
 When Boiler Taken out 8-4-22
 Pressure at which Valve was set 100 lbs
 Date of Accumulation Test 8-4-22
 Maximum Pressure under Accumulation Test 100 lbs
 System of Drafting NATURAL OIL FUEL, STEAM AS AIR
 Can Boiler be worked separately? NO
 Name of Maker W. B. BERRIMORE & CO.



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DONKEY BOILERS.

Works No. 1131.

No. of Boilers ONE Type Cylindrical Multitubular "SCOTCH"

Single or Double-ended SINGLE END FIRED.

No. of Furnaces in each ONE

Type of Furnaces PLAIN

Date when Plan approved 1-5-23.

Approved Working Pressure 100lbs.

Hydraulic Test Pressure 200lbs.

Date of Hydraulic Test 23-2-24

„ when Safety Valves set 8.4.24

Pressure at which Valves were set 100lbs

Date of Accumulation Test 8.4.24.

Maximum Pressure under Accumulation Test 102lbs

System of Draught NATURAL OIL FUEL, STEAM OR AIR

Can Boilers be worked separately? —

Makers of Plates WM. BEARDMORE & CO.

„ Stay Bars LANARKSHIRE STEEL CO LTD.

„ Rivets RIVET BOLT & NUT CO LTD.

„ Furnaces BOW MCLACHLAN & CO LTD.

Greatest Internal Diam. of Boilers 5'-6"

„ „ Length „ 6'-0"

Square Feet of Heating Surface each Boiler 179.1.

„ „ Grate „ 7.9.

No. of Safety Valves each Boiler 2 Rule Diam. $1\frac{3}{16}$ " Actual $1\frac{1}{2}$ "

Are the Safety Valves fitted with Easing Gear? YES

No. of Pressure Gauges, each Boiler 1 No. of Water Gauges 1

„ Test Cocks „ 2 „ Salinometer Cocks 1

Are the Water Gauges fitted direct to the Boiler Shell or mounted on a Stand? DIRECT

Are the Water Gauge Valves fitted direct to the Boiler Shell or connected by Pipes?

Are there any other connections to Boilers by Cocks or Valves?

Are there any Cocks or Valves fitted on Boiler Shell?

No. of Stakes of Shell fitting in each Boiler ONE

Plates in each Boiler ONE

Thickness of Shell Plates Approved $\frac{3}{8}$ "

„ in Boilers $\frac{3}{8}$ "

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 $\frac{3}{8}$ "

„ inside $\frac{3}{8}$ "

Are Longitudinal Seams Hand or Machine Riveted? YES

Are they Single, Double, or Triple Riveted? DOUBLE RIVETED

No. of Rivets in a Pitch TWO

Distance between Rivets $2\frac{1}{2}$ "

No. of Rows of Rivets in Centre Circumferential Seams ONE

Are these Seams Hand or Machine Riveted? —

Dist. of Rivet Holes 4"

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

Are these Seams Hand or Machine riveted? —

Dist. of Rivet Holes 4"

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

Are these Seams Hand or Machine Riveted? —

Dist. of Rivet Holes 4"

Are the Manholes in Shell

Dimensions of Manholes

STATE

(UNRECORDED)

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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 $14\frac{1}{4}$ " ONE ROW.

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

" " " " in Boilers $17\frac{1}{8}$ " " 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 $2' - 3\frac{3}{4}"$

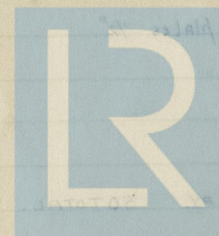
Length between Tube Plates $4' - 1\frac{1}{2}"$

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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Diam. 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 $7\frac{1}{2}$ "
 Diam. " " 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 $7" \times 7"$
 Diam. " " 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 $6" \times 4"$ HANDHOLE.

VERTICAL DONKEY BOILERS

No. of Boilers
 Type
 Gross Heat Input
 Height of Boiler Crown above Fire Grate
 Diameter of Boiler Crown Flat or Dished?
 Internal Radius of Dished Ends
 Thickness of Plates
 Description of Stays in Boiler Crown
 Diam. of Rivet Holes
 Pitch
 Width of Overlap
 Height of Firebox Crown above Fire Grate
 Are 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
 Diam. of Water Tubes
 Size of Manhole in Shell
 Dimensions of Compensation 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



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MAIN STEAM PIPES.

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



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EVAPORATORS.

No.	Type	Tons per Day
Makers		
Working Pressure	Test Pressure	Date of Test
Date of Test of Safety Valves under Steam		

FEED WATER HEATERS.

No.	Type
Makers	
Working Pressure	Test Pressure
Date of Test	

FEED WATER FILTERS.

No.	Type	Size
Makers		
Working Pressure	Test Pressure	Date of Test

LIST OF DONKEY PUMPS.

2 flanges for BALLAST PUMP. DAWSON & DOWNIE 4' dia x 5" stroke. to be
DRIVEN BY GEARING & CLUTCH FROM A 4/8 PARAFFIN ENGINE



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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 purveyor 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 cylinder
- 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.
- " pipes & pipe connections
- Packing for oil fuel pumps.



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REFRIGERATORS.

No. of Machines

Capacity of each

Makers

Description

No. of Steam Cylinders, each Machine

No. of Compressors

No. of Cranks

Particulars of Pumps in connection with Refrigerating Plant and whether worked by Refrigerating Machines

or Independently

System of Refrigeration

Insulation

Are Brine and other Regulating Valves placed so as to be accessible without entering the Insulated

Spaces ?

Are all Pipes, Air Trunks, &c., well secured and protected from risk of damage?

Are all Bilge, Sounding, and Air Pipes in Insulated Spaces properly insulated?

Are Thermometer Tubes so arranged that Water cannot enter and freeze in them?

Date of Test under Working Conditions

RESULTS OF TRIALS.

COMPARTMENT.	Temp. at beginning of Trial.	Temp. at end of Trial.	Time required to obtain this Result.	Rise of Temp. after hours.
Location of Dynamometer				
Capacity of Water	2 KW	10	850	
Material of Water or Condenser	CONTINUOUS			
Weight of Double Water Systems	DOUBLE			
Location of Dynamometer	PORT	DOWN	PARTIAL	
Material of Water				
Weight of Water for which Results are presented on Wall Water Board				
Particulars of these Circuits:-				
Current	Volts	Watts	Efficiency	Temperature
Engine Rm.	16	6	2	750
Exhaustion	16	2	4	100
Accumulator Rm.	40	16	10	100
Port	20	16	1	100

Articles of Spare Gear for Refrigerating Plant carried on board:—

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ELECTRIC LIGHTING.

Installation Fitted by **BOW Mc LACHLAN & CO LTD.**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%	2500 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. 2

Location of Circuits	No. of Circuits	Location of Switches	No. of Switches
ENGINE RM.	1	CHART RM.	1
SALOON	1	CREW SPACE AFT. 2	2

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 ARMOUR

" 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 ARMOUR

(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 18-4-24 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.

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.S. "HALAL"

as ascertained by 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.

John 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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Secretary.

GENERAL CONSTRUCTION

THE FOLLOWING MAIN PORTS: ...

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