

No. 2042

THE BRITISH CORPORATION FOR THE SURVEY  
AND  
REGISTRY OF SHIPPING.

Report No. 1950 No. in Register Book 3277

T.S.S.

"PHRONTIS"

Makers of Engines BURMEISTER & WAIN

Works No. 11823

Makers of Main Boilers

Works No.

Makers of Donkey Boiler COCHRAN & CO (ANNAN) LTD

Works No. 9759

MACHINERY.



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No.

THE BRITISH CORPORATION FOR THE SURVEY  
AND  
REGISTRY OF SHIPPING.

Report No. *1950* No. in Register Book *3277*

Received at Head Office *3rd May 1926*

Surveyor's Report on the New Engines, Boilers, and Auxiliary  
Machinery of the ~~Single Screw~~ *Twin Quadruple* Screw OIL MOTOR SHIP.  
"PHRONTIS"

Official No.

Port of Registry *AMSTERDAM.*

Registered Owners

*Alfred Holt & Co. Ltd. Liverpool Managers  
for Ocean Nederlandsche Stoomvaart Maatschappij.*

Engines Built by *BURMEISTER & WAIN*

at *COPENHAGEN*

Main Boilers Built by *NONE.*

*Installed by Calson SP&Co Ltd*

at *-*

*Dunde no 495.*

Donkey ..

*COCHRAN & CO (ANNAN) LTD.*

at *ANNAN*

Date of Completion *16-4-26.*

First Visit *4-6-25.*

Last Visit *16-4-26.*

Total Visits *27*

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## RECIPROCATING ENGINES.

Works No. 1182-1183 No. of Sets 2 Description —FOUR STROKE CYCLE, SINGLE ACTING, DIESEL ENGINES DIRECTLY REVERSIBLE  
AND FORCED LUBRICATION.No. of Cylinders each Engine 8 No. of Cranks 8Diars. of Cylinders 630<sup>mm</sup> 24.8" Stroke 1100<sup>mm</sup> 43.31"Cubic feet in each L.P. Cylinder 12.1<sup>#</sup>

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

each Receiver?  
**FLYWHEEL** " 8'-7<sup>1</sup>/<sub>2</sub>" DIA 8.3 TONS  
Type of H.P. Valves, —" 1st L.P. " BURMEISTER & WAIN'S EMERGENCY GOVERNOR" 2nd L.P. " OPERATED BY MAIN ENGINES ACTING ON" L.P. " SUCTION VALVES OF FUEL PUMPS." Valve Gear —" Condenser — Cooling Surface — sq. ft. —Diameter of Piston Rods (plain part) 7<sup>3</sup>/<sub>4</sub>" Screwed part (bottom of thread) 3<sup>1</sup>/<sub>2</sub>"Material " SMS.Diar. of Connecting Rods (smallest part) 8<sup>9</sup>/<sub>32</sub>" Material SMS" Crosshead Gudgeons 9" Length of Bearing 9" Material —No. of Crosshead Bolts (each) 4 Diar. over Thrd. 2<sup>1</sup>/<sub>8</sub>" Thrds. per inch — Material Steel" Crank Pin " " 2 " 3<sup>15</sup>/<sub>32</sub>" " " —" Main Bearings 10 Lengths 1'-2<sup>1</sup>/<sub>8</sub>" AND 1'-4<sup>3</sup>/<sub>4</sub>"" Bolts in each 4 Diar. over Thread 2<sup>1</sup>/<sub>2</sub>" Threads per inch — Material STEEL" Holding Down Bolts, each Engine 160 Diar. 1<sup>3</sup>/<sub>8</sub>" No. of Metal Chocks 160Are the Engines bolted to the Tank Top or to a Built Seat? BUILT SEATAre the Bolts tapped through the Tank Top and fitted with Nuts Inside? —If not, how are they fitted? NUTS ONLY.DISTANCE BETWEEN EDGES OF MAIN BEARINGS 2'-11<sup>1</sup>/<sub>8</sub>"Connecting Rods, Forged by BURMEISTER & WAIN, LTD

Piston " " " " " "

Crossheads, " " " " " "

Connecting Rods, Finished by " " " " " "

Piston " " " " " "

Crossheads, " " " " " "

Date of Harbour Trial 7-4-26." Trial Trip 16-4-26Trials run at FIRTH OF TAYWere the Engines tested to full power under Sea-going conditions? YES.If so, what was the L.H.P.? NO RECORD Revs. per min. 120.

Pressure in 1st L.P. Receiver, lbs., 2nd L.P., lbs., L.P., lbs., Vacuum, ins.

Speed on Trial NO RECORD.

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

data:—

Builders' estimated B.H.P. 3700 TOTAL Revs. per min. 125.

Estimated Speed " " " "

MAXIMUM INITIAL PRESSURE = 500 lbs.EST. MEAN PRESSURE = 90 lbs.PISTONS ON MAIN ENGINES ARE COOLED BY LUBRICATING OIL.  
OTHER PARTS BY SEA WATER.

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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 —

Diar. of 1st Reduction Pinion — } Width — Pitch of Teeth —

" 1st " Wheel — }

Estimated Pressure per lineal inch —

Diar. 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 EMERGENCY AIR COMPRESSORGenerators ONE - 2 STAGE VERTICAL STEAM DRIVENMotors BURMEISTER & WAIN LTD 1926Reduction Gear STROKE 3.15"  
STAGE 1 DIA. 4 1/8" PRESS 142 lbs/□"Turbine Spindles forged by 2 1.33" 853 lbs/□"

Wheels forged or cast by —

Reduction Gear Shafts forged by —

Wheels forged or cast by —

## DESCRIPTION OF INSTALLATION.

2 MAIN AIR COMPRESSORSONE ON EACH MAIN ENGINE FORCED LUBRICATION DIRECT  
COUPLED TO FORWARD END OF CRANK SHAFT.STROKE 14.7" PRESS □"STAGE 1 DIA. 29.53" 85 lbs" 2 26.58" 356 "" 3 5.91" 1100 lbs4 AUX AIR COMPRESSORSONE ON EACH AUXILIARY ENGINE FORCED LUBRICATION DIRECT  
COUPLED TO FORWARD END OF CRANK SHAFT.STROKE 8.67" PRESS □"STAGE 1 DIA. 12.51" 85 lbs2 11.21" 242 lbs3 3.07" 1000 lbsREGULATING VALVES TO SUPPLY AIR AT PRESSURES  
FOR RESERVOIRS AND BOTTLES ON EACH ENGINE.



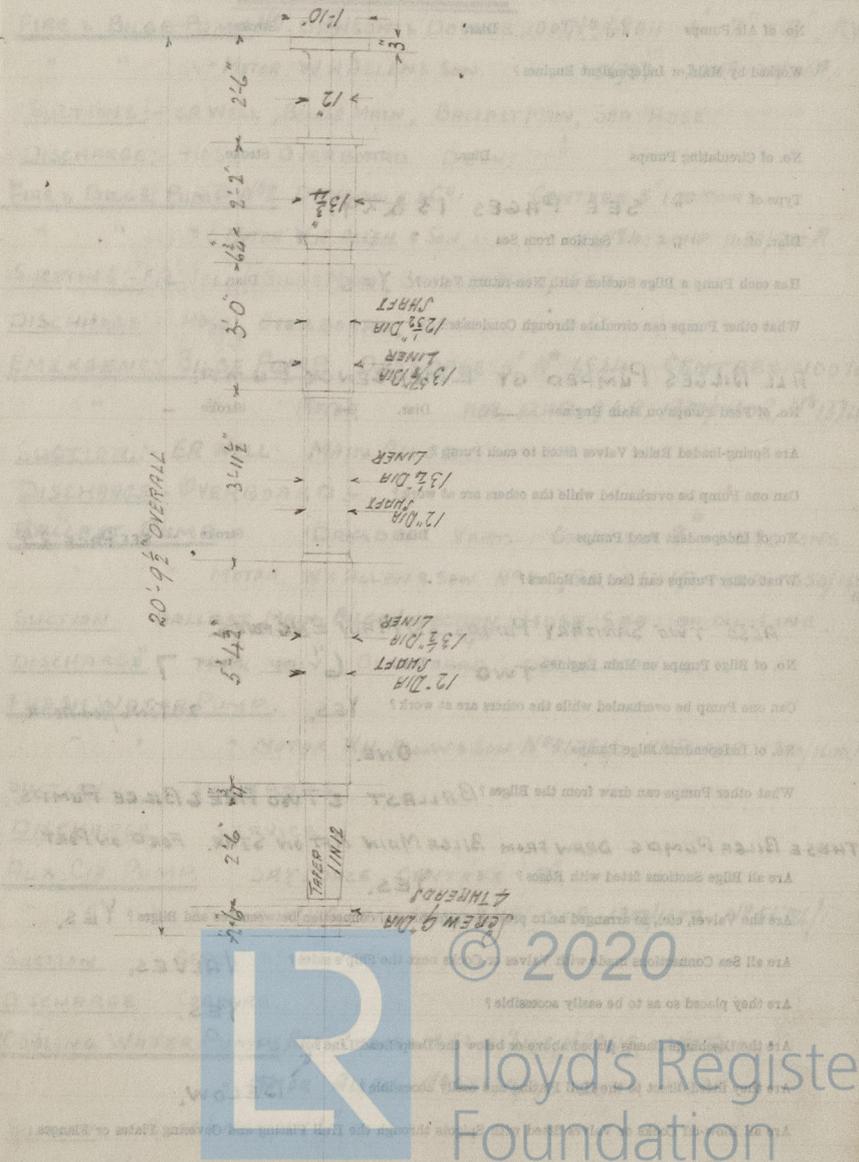
No. of Blades each Propeller **4** Fitted or Solid? **FITTED**  
 Material of Blades **BRONZE** Boss **C.I.**  
 Diam. of Propellers **12'-9"** Pitch **12'-0"** Surface (each) **50** S. ft.  
 Coefficient of Displacement of Vessel at  $\frac{1}{2}$  Moulded Depth **.77**

|   | Crank Shafts Forged by                  | Material                             |
|---|---|--------------------------------------|
| 2 | <b>GUTEHOFFNUNGSHUTTE AV. STERKRABE</b> | <b>15.</b>                           |
| " | Pins                                    | "                                    |
| " | Webs                                    | "                                    |
| " | Thrust Shafts                           | "                                    |
| " | Intermed. "                             | "                                    |
| " | Propeller "                             | "                                    |
| 2 | Crank " Finished by                     |                                      |
| 2 | Thrust " "                              | <b>CALEDON S. B &amp; E. CO LTD.</b> |
| 6 | Intermed. " "                           | "                                    |
| 3 | Propeller " "                           | "                                    |

STAMP MARKS ON SHAFTS.

**B.C.**  
**No 5635.**  
**R.L.G.**  
**2.9.25.**

X SKETCH OF PROPELLER SHAFT.



## PUMPS, ETC.

No. of Air Pumps — Diar. — Stroke —

Worked by Main or Independent Engines?

No. of Circulating Pumps — Diar. — Stroke —

Type of " SEE PAGES 13 &amp; 29.

Diar. of " Suction from Sea —

Has each Pump a Bilge Suction with Non-return Valve? YES. Diar. —

What other Pumps can circulate through Condenser? —

## ALL BILGES PUMPED BY EMERGENCY PUMP.

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 — SEE PAGE 25.

What other Pumps can feed the Boilers? —

## ALSO TWO SANITARY PUMPS ON MAIN ENGINES.

No. of Bilge Pumps on Main Engines TWO Diar. 6" Stroke 7"

Can one Pump be overhauled while the others are at work? YES. 20 TONS per hour.

No. of Independent Bilge Pumps ONE.

What other Pumps can draw from the Bilges? BALLAST &amp; TWO FIRE &amp; BILGE PUMPS.

## THESE BILGE PUMPS DRAW FROM BILGE MAIN AFT ON STAR. FORD ON PORT.

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? VALVES.

Are they placed so as to be easily accessible? YES.

Are the Discharge Chests placed above or below the Deep Load Line?

Are they fitted direct to the Hull Plating and easily accessible? BELOW.

Are all Blow-off Cocks or Valves fitted with Spigots through the Hull Plating and Covering Plates or Flanges

on the Outside? YES.

## PUMPS &amp; MOTORS

FIRE & BILGE PUMP N<sup>o</sup>. DAWSON & DOWNIE 100T N<sup>o</sup> 6804 5" 8" x 8" R.V.

" " " MOTOR W.H. ALLEN &amp; SON. " 56787 20HP. 100/1700R.

SUCTIONS:- ER WELL, BILGE MAIN, BALLAST MAIN, SEA HOSE.

DISCHARGE:- HOSE OVERBOARD DECK.

FIRE & BILGE PUMP N<sup>o</sup> 2 DRYSDALE & CO. CENTREX 5" 100 TONS.

" " " MOTOR W.H. ALLEN &amp; SON. " 56784. 20HP. 1450/1700R.

SUCTIONS:- ER WELL, BILGE MAIN, BALLAST MAIN, SEA.

DISCHARGE:- HOSE, OVERBOARD, DECK.

EMERGENCY BILGE PUMP. DRYSDALE 5" N<sup>o</sup> 6844. CENTREX 100 TONS." " " MOTOR " 110V. 12HP. 96A. 1300/1450R. N<sup>o</sup> 1374.

SUCTION:- ER WELL MAIN BILGE

DISCHARGE:- OVERBOARD.

BALLAST PUMP DRYSDALE VERT. CENTREX 8" 280 TONS.

" " " MOTOR. W.H. ALLEN & SON. N<sup>o</sup> 56785. 35HP. 132A. 1350/1550R.

SUCTION BALLAST MAIN, BILGE INJECTION, HOSE, SEA. OR OIL LINE.

DISCHARGE TANK MAIN, OVERBOARD. D.S. OIL TANKS.

FRESH WATER PUMP.

" " " MOTOR W.H. ALLEN & SON N<sup>o</sup> 56786/2 5HP. 20A. 1300/1600R.

SUCTION FW TANKS.

DISCHARGE SERVICE.

AUX. CIR. PUMP. DRYSDALE CENTREX - 3"

" " " MOTOR. W.H. ALLEN & SON 5HP. 20A. 1300/1600. N<sup>o</sup> 56786/1.

SUCTION SEA.

DISCHARGE COOLERS.

COOLING WATER PUMPS. REBS ROTABO M.C.P. 6" HULL. N<sup>o</sup> 949. 150 TONS." MOTOR ALLEN N<sup>o</sup> 55874/2/3. 20HP. 1150R.

SUCTION. BILGE INJECTION 6"

DISCHARGE COOLERS.

SEE PAGE 29.

## AIR BOILERS. RESERVOIRS.

Works No. Fire & Blue Blk. No. 10070

No. of Boilers 2 Type CYLINDRICAL

Single or Double-ended —

No. of Furnaces in each —

Type of Furnaces —

Date when Plan approved 26.12.24.

Approved Working Pressure 355lbs.

Hydraulic Test Pressure 600lbs.

Date of Hydraulic Test 28.5.25.

„ when Safety Valves set 14.4.26.

Pressure at which Valves were set 355lbs.

Date of Accumulation Test —

Maximum Pressure under Accumulation Test —

System of Draught —

Can Boilers be worked separately? YES

Makers of Plates —

Stay Bars —

Rivets —

Furnaces —

Greatest Internal Diam. of Boilers 6'-0 $\frac{3}{16}$ "

„ „ Length „ 29'-0 $\frac{3}{8}$ "

Square Feet of Heating Surface each Boiler 750 CF CAPACITY.

„ „ Grate „ „ —

No. of Safety Valves each Boiler 2 Rule Diam. — Actual 1 $\frac{1}{4}$ "

Are the Safety Valves fitted with Easing Gear? NO.

No. of Pressure Gauges, each Boiler RESERVOIR YES

No. of Water Gauges —

„ Test Cocks „ — „ Salinometer Cocks —

BC TEST.

NO 3244.

WP 355lbs

TP 600lbs

J.M.P.

28.5.25

## 2 D - AIR BOTTLES.

SIEMENS MARTIN STEEL SOLID DRAWN CYLINDRICAL

| No        | INT. DIA.          | LENGTH                | THICK           | CAPACITY   | PRESS                |
|-----------|--------------------|-----------------------|-----------------|------------|----------------------|
| A 2 SPARE | 17 $\frac{3}{4}$ " | 10'-8 $\frac{5}{8}$ " | $\frac{5}{8}$ " | 450 LITRES | 65 $\frac{Kg}{CM^2}$ |
| B 2 M.E.  | 15 $\frac{3}{4}$ " | 7'-1 $\frac{1}{4}$ "  | "               | 225 "      | "                    |
| C 4 AUX.  | 7 $\frac{1}{4}$ "  | 4'-1 $\frac{1}{2}$ "  | $\frac{3}{8}$ " | 30         | "                    |

|              |              |          |        |
|--------------|--------------|----------|--------|
| A. NO 104793 | 2000lbs TEST | 8.10.25. | 3.0.T. |
| 104794.      | "            | "        | "      |
| B. 104795    | 2000lbs "    | 21.5.25. | "      |
| 104796       | "            | "        | "      |
| C. 104797    | 2000lbs.     | 11.6.25. | "      |
| 104798       | "            | "        | "      |
| 104799       | "            | 17.6.25. | "      |
| 104800.      | "            | "        | "      |

MATERIAL MADE BY CHESTERFIELD TUBE CO.

THREE FUSIBLE PLUGS IN EACH RESERVOIR 10 $\frac{1}{16}$ " DIA.

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

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? —

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

Plates in each Strake **ONE**

Thickness of Shell Plates Approved **1"**

" " in Boilers **1"**

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

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

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

Are the Double Butt Straps of equal width? **YES.**

Thickness of outside Butt Straps **3/4"**

" inside " **7/8"**

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

Are they Single, Double, or Treble Riveted? **TREBLE.**

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

Diar. of Rivet Holes **1 3/32"** Pitch **7 1/2"**

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

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

Diar. of Rivet Holes **1 1/4"** Pitch **4.314"**

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

Are these Seams Hand or Machine riveted?

Diar. of Rivet Holes **1 1/4"** Pitch **4 1/16"**

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

Are these Seams Hand or Machine Riveted?

Diar. of Rivet Holes **1 1/4"** Pitch **4 1/16"**

Size of Manholes in Shell **16" x 12"**

Dimensions of Compensating Rings **2'-9" x 3'-2" x 1"**

**2 DAILY SUPPLY TANKS. 30/lbs 1-7-25.**

**1 GRAVITY " " " "**

**1 CLEAN OIL TANK. 15/lbs 4-7-25.**

**OIL PIPE LINE IN PIPE TUNNEL 30/lbs 23-3-26**

**" " " " ENG. ROOM. " 29-3-26.**

**OIL FUEL BY GRAVITY FROM TANK THROUGH ELECTRIC HEATER TO SEPARATOR AND PUMPED TO D.S TANKS**



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Thickness of End Plates in ~~Steam Space~~ Approved  $\frac{5}{16}$ "  
 " " " " " in Boilers  $\frac{5}{16}$ "  
 Pitch of Steam Space Stays —  
 Diar. " " " " Approved — Threads per Inch —  
 " " " " " in Boilers — " —  
 Material of " " " —  
 How are Stays Secured? —  
 Diar. and Thickness of Loose Washers on End Plates —  
 " " Riveted " " " —  
 Width " " Doubling Strips " —  
 Thickness of Middle Back End Plates Approved —  
 " " " " " in Boilers —  
 Thickness of Doublings in Wide Spaces between Fireboxes —  
 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 —  
 " " " " " in Boilers —  
 Pitch of Stays at Wide Spaces between Fireboxes —  
 Thickness of Doublings in " " —  
 Thickness of Front End Plates at Bottom Approved —  
 " " " " " in Boilers —  
 No. of Longitudinal Stays in Spaces between Furnaces —



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Diar. of Stays Approved — Threads per Inch —

„ „ in Boilers —

Material „ —

Thickness of Front Tube Plates Approved —

„ „ „ „ in Boilers —

Pitch of Stay Tubes at Spaces between Stacks of Tubes —

Thickness of Doublings in „ „ —

„ Stay Tubes at „ „ —

Are Stay Tubes fitted with Nuts at Front End? —

Thickness of Back Tube Plates Approved —

„ „ „ in Boilers —

Pitch of Stay Tubes in Back Tube Plates —

„ Plain „ —

Thickness of Stay Tubes —

„ Plain „ —

External Diar. of Tubes —

Material „ —

Thickness of Furnace Plates Approved —

„ „ „ in Boilers —

Smallest outside Diar. of Furnaces —

Length between Tube Plates —

Width of Combustion Chambers (Front to Back) —

Thickness of „ „ Tops Approved —

„ „ „ in Boilers —

Pitch of Screwed Stays in C.C. Tops —



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Diam. of Screwed Stays Approved — Threads per Inch —

" " " in Boilers —

Material " " —

Thickness of Combustion Chamber Sides Approved —

" " " " in Boilers —

Pitch of Screwed Stays in C.C. Sides

Diam. " " Approved — Threads per Inch —

" " " in Boilers —

Material " " —

Thickness of Combustion Chamber Backs Approved —

" " " " in Boilers —

Pitch of Screwed Stays in C.C. Backs

Diam. " " Approved — Threads per Inch —

" " " in Boilers —

Material " " —

Are all Screwed Stays fitted with Nuts inside C.C.? —

Thickness of Combustion Chamber Bottoms —

No. of Girders over each Wing Chamber —

" " Centre " —

Depth and Thickness of Girders —

Material of Girders —

No. of Stays in each —

No. of Tubes, each Boiler —

Size of Lower Manholes —

VERTICAL DONKEY BOILERS

No. of Boilers ONE  
Type CYLINDRICAL MULTITUBULAR No. 100  
Height of Boilers above the Grate 12'-0"  
Are Boilers Crowned Flat or Dished? DISHED  
Internal Radius of Dished Ends 3'-0"  
Description of Beams in Boiler Crown  
Diam. of Rivet Holes 5/8" Pitch 2"  
Height of Firebox Crown above the Grate 2'-2"  
Are Firebox Crown Flat or Dished? DISHED  
External Radius of Dished Crown 2'-2"  
No. of Crown Stays 10  
Material of Crown Stays STEEL  
Internal Diam. of Firebox at the HEATER POSITION 11 1/2" PLAIN  
No. of Water Tubes 115  
Material of Water Tubes STEEL  
Size of Manhole in Shell 24" x 24" x 1/2" x 1/2"  
Thickness of Compensating Ring 2"  
Heating surface each boiler 400 sq ft  
No. of Tubes 115

SUPERHEATERS

Description of Superheaters None  
Were they fitted?  
Which Boilers are connected to Superheaters?  
Can Superheaters be shut off while Boilers are working?  
No. of Safety Valves on each Superheater  
Date of Inspection  
Inspected on 7/15



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## VERTICAL DONKEY BOILERS.

No. of Boilers ONE Type CYLINDRICAL MULTITUBULAR N<sup>o</sup> 9759.  
 Greatest Int. Diar. 6'-0" Height 15'-9"  
 Height of Boiler Crown above Fire Grate 12'-0"  
 Are Boiler Crowns Flat or Dished? DISHED.  
 Internal Radius of Dished Ends 3'-0" Thickness of Plates  $\frac{13}{16}$ "  
 Description of Seams in Boiler Crowns SINGLE IN SECOND STRAKE.  
 Diar. of Rivet Holes  $\frac{25}{32}$ " Pitch 2" Width of Overlap  $2\frac{3}{8}$ "  
 Height of Firebox Crowns above Fire Grate 2'-6"  
 Are Firebox Crowns Flat or Dished? DISHED  
 External Radius of Dished Crowns 2'-6" Thickness of Plates  $\frac{1}{2}$ "  
 No. of Crown Stays NO. Diar. HEMI. Material  
 External Diar. of Firebox at Top HEMISPHER Bottom  
 No. of Water Tubes FIRE 112 PLAIN Ext. Diar. 2 $\frac{1}{2}$ " Thickness 11 LSG.  
24 STAY STEEL  $\frac{11}{32}$ "  
 Material of Water Tubes  
 Size of Manhole in Shell 16" x 12"  
 Dimensions of Compensating Ring 2'-4" x 2'-0"  
 Heating Surface, each Boiler 400  $\phi$  Grate Surface OIL FIRED.

## SUPERHEATERS.

Description of Superheaters NONE  
 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 —

DONKEY BOILER. MADE BY COCHRAN & CO (ANNAN) LTD  
 PRESSURE 100 lbs WP  
 SAFETY VALVES 2-2" SET ON 13<sup>TH</sup> APRIL 1926.

## B.C. TEST

N<sup>o</sup> 4923.  
 T.P. 200 lbs  
 WP 100 lbs  
 RLG  
8.9.25

## OIL BURNER UNIT.

HUTCHISON'S TURBINIA OIL BURNER N<sup>o</sup> 44.  
 MOTOR BY HEITH BLACKMAN. 110V. 10A. N<sup>o</sup> 2720.

## FEED WATER PUMP.

DAWSON & DOWNIE 4" x 2 $\frac{3}{4}$ " x 5" N<sup>o</sup> 6803.

## SUCTION BOILER FEED TANK SEA.

## DISCHARGE BOILER.

FEED INJECTOR. N<sup>o</sup> 94398 5<sup>M</sup>/M DIAR.



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STARTING & BLAST AIR MAIN STEAM PIPES. DONKEY STEAM HEATING COILS.

| No. of Lengths             | 4              | 5                   | 3                 | 2                    |
|----------------------------|----------------|---------------------|-------------------|----------------------|
| Material                   | STEEL          | STEEL               | COPPER            | 2 Sealing<br>T       |
| Brazed, Welded or Seamless | SEAMLESS       | SEAMLESS            | SEAMLESS          | 1 quantity<br>tanks. |
| Internal Diar.             | 3"             | 24 <sup>m</sup> /m. | 3"                |                      |
| Thickness                  | 4 <sup>n</sup> | 9 <sup>m</sup> /m.  | 12WG.             |                      |
| How are Flanges secured?   | SCREWED        | SCREWED.            | BRAZED.           |                      |
| Date of Hydraulic Test     | 10-3-26        | 2500lbs.            | 7-12-25           | 10-12-25             |
| Test Pressure              | 500lbs.        | 3-3-26.             | 250lbs.<br>J.M.P. | 250lbs.<br>J.M.P.    |

| No. of Lengths             | 4        | 2.                 | Nos 829<br>DB tanks |                  |
|----------------------------|----------|--------------------|---------------------|------------------|
| Material                   | STEEL    | STEEL              |                     |                  |
| Brazed, Welded or Seamless | SEAMLESS | SEAMLESS           |                     |                  |
| Internal Diar.             | 1 3/4"   | 24 <sup>m</sup> /m |                     |                  |
| Thickness                  | 7WG.     | 9 <sup>m</sup> /m  |                     |                  |
| How are Flanges secured?   | SCREWED  | SCREWED            |                     |                  |
| Date of Hydraulic Test     | 17-3-26. | 4-3-26             |                     | 16-3-26.         |
| Test Pressure              | 800lbs.  | 2500lbs            |                     | 200lbs<br>R.L.G. |

| No. of Lengths             | 2              | 7.                  |
|----------------------------|----------------|---------------------|
| Material                   | STEEL          | STEEL               |
| Brazed, Welded or Seamless | SCREWED        | SEAMLESS            |
| Internal Diar.             | 3"             | 24 <sup>m</sup> /m. |
| Thickness                  | 4 <sup>n</sup> | 9 <sup>m</sup> /m   |
| How are Flanges secured?   | SCREWED        | SCREWED             |
| Date of Hydraulic Test     | 17-3-26        | 10-3-26             |
| Test Pressure              | 800lbs etc.    | 2500lbs etc.        |



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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 |

## CONT LIST OF DONKEY PUMPS.

2. FORCED LUBRICATION PUMPS B&W.

" " " MOTOR. ALLEN 20HP. 55873/3/4. 500R.

TRANSFER OIL PUMP. B&W.

" " " MOTOR. WHALEN. 55874 20HP. 78A. 1000R.

SUCTION OIL OR BALLAST MAIN LINES (WITH BLANK FLANGE) RESIDUE TANK

DISCHARGE OIL FILLING, OIL MAIN F. OIL MAIN. AFT

STEERING ENGINE. BROWN BROS. H 590. PUMP N° 21932  
MOTORS. SUNDERLAND FORGE CO. N°S 30-31. 30HP. 525 REV.

SEPARATOR. DE LAVAL N° 1830216 825 REV. CHAD BORN.  
MOTOR VERITY 220V. 600R. 4-4A. N° 22660.

EMERGENCY ENGINE. 16 KW.

3 CYL. 4 CYCLE PARAFFIN N° 2568 NEW PELAPONE ENG. CO.  
DYNAMO. SUNDERLAND FORGE CO. 110V. 146K 800R. N° A 422.

WINDLASS J H WILSON. & CO. N° 374.

MOTOR LAWRENCE SCOTT 100HP. 400/280R. 370/260A  
220V. N° A 2251.



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## SPARE GEAR

| No. of Top End Bolts. | No. of Bot. End Bolts. | No. of Cylinder Cover Studs | 1 SET               |
|-----------------------|------------------------|-----------------------------|---------------------|
| " Coupling Bolts      | 1 SET                  | " Main Bearing Bolts        | 2 SET COMPLETE      |
| " 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        | 1 DB                   | " Fire Bars                 | " Feed Check Valves |
| " 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    | ONE                    | " Propellers                | " Propeller Blades  |
| " Boiler Tubes        | " Condenser Tubes      | " Condenser Ferrules        |                     |

## OTHER ARTICLES OF SPARE GEAR:—

Two cylinder liners. Two cylinder heads complete with studs & nuts.  
 One piston complete with rod. One piston.  
 Sixteen exhaust valves with cages, seats, spindles, springs, etc.  
 Sixteen exhaust valve seats. One air inlet valve complete.  
 Two starting valves complete. Eight fuel valves complete.  
 Eight loose spindles for fuel valves. Eight loose bottoms.  
 One collar each size with pins. Two sets spare parts fuel pumps.  
 Eight fuel pump plungers. One set springs complete for one engine.  
 One set leather collars & packings. Two spindles for overflow valves.  
 One set air compressor connecting rod. Brass complete.  
 " " " " main bearing " "  
 Two sets " " valve springs.  
 " " " " piston rings each size.  
 " cooling coils for main air compressors.  
 Six LP suction valves & springs " "

Six LP discharge valves & springs for air compressors.

Two I.P. suction

" discharge

" HP suction

" discharge

One set of inter. rings for HP compressor piston

Half set valves and seats for one bilge pump.

" " " " sanitary pumps

One set coupling bolts for crank shaft

" " " " packing rings for piston and stuffing box.

One set safety valve discs for starting air receivers

One set of pad pieces for thrust blocks.

" " " " liners

50 iron nuts & bolts.

12 brass



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| CIRCUIT.        | N <sup>o</sup> OF LIGHTS. | WATTAGE | DATE    | AMPS |
|-----------------|---------------------------|---------|---------|------|
| 17 AUX CIR PUMP |                           | 116.0   | 19/053. | 580  |
| 18 WORKSHOP     |                           | 78.0    | 19/053  | 390  |
| 19 OIL PURIF    |                           | 138.5   | 37/072  | 423  |
|                 |                           | 600.    | 6/1/02  | 600. |

ALL AT 220 VOLTS.

1 THE FOLLOWING AT 110 VOLTS.

| N <sup>o</sup> CIRCUIT. | N <sup>o</sup> OF LIGHTS. | C.P.                | CURRENT      | SIZE             | DENSITY | CON. | INS. |
|-------------------------|---------------------------|---------------------|--------------|------------------|---------|------|------|
| 1 FORD & FANS.          | 59.                       | 16                  | 21.42        | 19/064           | 357.0   | 100. | 2500 |
| 2 MIDSHIP "             | 53                        | 16.                 | 15.14.       | 19/052           | 378.5.  | "    | "    |
| 3. AFT "                | 42.                       | "                   | 8.38         | "                | 209.5   | "    | "    |
| 4. E.R.                 | 120.                      | "                   | 32.0.        | 19/064           | 53.3    | "    | "    |
| 5 "                     | 11                        | 400                 | 20.0         | 19/052.          | 50.0    | "    | "    |
| 6 CARGO.                | 78<br>18<br>4             | 16<br>100W<br>1000W | 22.6<br>63.6 | 7/064<br>19/053. | 1004.4  | "    | "    |
| 7 EMERG.                |                           |                     | 14.6         | 37/073.          | 636.0   | "    | "    |
| 110V. SHORE CONNECTION. |                           |                     | 200.         | 37/083           | 584.0.  | "    | "    |

EMERGENCY SWITCH BOARD.

|               |    |            |      |        |        |   |   |
|---------------|----|------------|------|--------|--------|---|---|
| 1 NAVIGATION. | 10 | 16<br>100W | 8.7  | 7/052  | 600.   | " | " |
| 2 GENERAL     | 33 | 16         | 8.16 | 19/052 | 204    | " | " |
| 3 BOATS. P    | 16 | 60W        | 8.8  | 7/052  | 606.89 | " | " |
| 4 " S.        | 16 | 60W        | 8.8  | "      | "      | " | " |
| 5 WIRELESS    | -  | -          | 20.0 | 7/064  | 888.8  | " | " |
| 6 EMER BILGE  | -  | -          | 46.0 | 19/053 | 960.   | " | " |
| W/T DOORS.    | -  | -          | INT. | 7/064  |        |   |   |

ELECTRIC LIGHTING.

Installation Fitted by SUNDERLAND FORGE & ENG. CO LTD

No. and Description of Dynamos 2. 18KW. 110V. COM. WOUND GENERATING SETS.  
4. 100KW. 220V. MULTIPOLAR WOUND INTER POLES.

Makers of Dynamos W H ALLEN.

Capacity GENERATORS 455 Amperes, at 220. Volts, 300 Revols. per Min.  
2 MOTOR GENERATOR 64 110 650  
Current Alternating or Continuous CONTINUOUS.

Single or Double Wire System DOUBLE.

Position of Dynamos PLATFORM PORT SIDE ENGINE ROOM

Main Switch Board " " "

No. of Circuits to which Switches are provided on Main Switch Board 10. INCLUDE 3 SPARES 110V  
23. " " 220V

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 RING MAIN SYSTEM  |                   |               | INTERM                  | 350                |                  |                            |                                 |
| 2 OFFICERS HEATING. |                   |               | 37/072                  | 1066.6             |                  |                            |                                 |
| 3 MIDSHIP WINCHES   |                   |               | 6/093                   | -                  |                  |                            |                                 |
| 4 EUROPEAN GALLEY.  |                   |               | 37/093                  | 919.2              |                  |                            |                                 |
| 5 MIDSHIP HEATING   |                   |               | "                       | 834.4              |                  |                            |                                 |
| 6 STEERING.         |                   |               | 37/083                  | 912.5              |                  |                            |                                 |
| 7 BALLAST PUMP.     |                   |               | 37/072                  | 880.0              |                  |                            |                                 |
| 8 FIRE & BILGE "    |                   |               | 19/072                  | 0740.0             |                  |                            |                                 |
| 9 " " "             |                   |               | "                       | "                  |                  |                            |                                 |
| 10 COOLING "        |                   |               | "                       | "                  |                  |                            |                                 |
| 11 " " "            |                   |               | "                       | "                  |                  |                            |                                 |
| 12 LUBRIC.          |                   |               | "                       | "                  |                  |                            |                                 |
| 13 " " "            |                   |               | "                       | "                  |                  |                            |                                 |
| 14 MOTOR-GENERATOR  |                   |               | 19/083                  | 590                |                  |                            |                                 |
| 15 " " "            |                   |               | "                       | 590                |                  |                            |                                 |
| 16 FW. PUMP.        |                   |               | "                       | 340.               |                  |                            |                                 |

Total No. of Lights 467. No. of Motors driving Fans, &c. 45. No. of Heaters 65.

Current required for Motors and Heaters 2205.8 EXCLUSIVE OF WINDLASS & WINCHES.



GENERAL CONSTRUCTION

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

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

Handwritten notes and signatures in the left column, including 'MOTOR GENERATOR' and 'H.P. MOTOR'.

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

Is the Workmanship throughout thoroughly satisfactory?

The above correctly describes the Machinery of the S.S. as ascertained by me from personal examination

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

Fees—

Table with columns for equipment type (MAIN BOILERS, DONKEY BOILERS, ENGINES), unit (Sq. ft., Cub. ft.), and currency (£, s., d.). Rows include H.S., G.S., L.P.C., Testing, &c., Expenses, and Total.

It is submitted that this Report be approved.

Handwritten signature of the Chief Surveyor.

Approved by the Committee for the Class of M.B.S.\* on the 5th May 1926

Fees advised  
Fees paid



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Lloyd's Register Foundation Secretary.

Total

MAIN BOILERS

H.R.

Sp. S.

DOCKERY BOILERS

H.R.

Sp. S.

ENGINEER

L.F.C.

Cap. S.

Testing &

Expenses

Total

It is submitted that this Report be approved.

For advised

For paid



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BRITISH CORPORATION REGISTERED  
GLASGOW



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