

No. 1984

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. 1838 No. in Register Book 3148

S.S. BARON FAIRLIE

Makers of Engines McKIE & BAXTER

Works No. 1135

Makers of Main Boilers D. & W. HENDERSON & CO. LTD

Works No. 845

Makers of Donkey Boiler NONE

Works No. ✓



MACHINERY.



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Foundation

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Received at Head Office

28th April 1925

Surveyor's Report on the New Engines, Boilers, and Auxiliary
Machinery of the ^{Single Triple} ~~Twin Quadruple~~ Screw STEAMSHIP

— "BARON FAIRLIE" —

Official No. Port of Registry ARDROSSAN

Registered Owners THE HOGARTH SHIPPING & LTD

Engines Built by Mc KIE & BAXTER

at GOVAN, GLASGOW

Main Boilers Built by D. & W. HENDERSON & CO. LTD

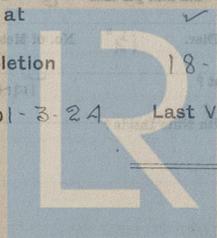
at FINNIESTON, GLASGOW.

Donkey " " NONE

at

Date of Completion 18-4-25

First Visit 31-3-24 Last Visit 18-4-25 Total Visits 97



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RECIPROCATING ENGINES.

Works No. 1135 No. of Sets ONE Description TRIPLE EXPANSION,

SURFACE CONDENSING. DIRECT ACTING

No. of Cylinders each Engine 3 No. of Cranks 3

Diams. of Cylinders 27" 46" 76" Stroke 48"

Cubic feet in each L.P. Cylinder 126 01

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

" " " each Receiver? ALL EXCEPT L.P. BOTTOM.

Type of H.P. Valves, PISTON

" 1st I.P. " COMMON SLIDE

" 2nd I.P. " ✓

" L.P. " DOUBLE-PORTED "TRICK"

" Valve Gear STEPHENSONS LINK MOTION

" Condenser BUILT Cooling Surface 3633 sq. ft.

Diameter of Piston Rods (plain part) 7½" Screwed part (bottom of thread) X

Material " INGOT STEEL

Diam. of Connecting Rods (smallest part) 7¾" Material INGOT STEEL

" Crosshead Gudgeons 7½" Length of Bearing 6½" Material D:

No. of Crosshead Bolts (each) 4 Diam. over Thrd. 3" Thrds. per inch 6 Material WROG IRON

" Crank Pin " " 2 " 4" " 4 " D:

" Main Bearings 6 Lengths 15"

" Bolts in each 2 Diam. over Thread 3½" Threads per inch 6 Material STEEL

" Holding Down Bolts, each Engine 112 Diam. 1½" No. of Metal Chocks 116

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

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

If not, how are they fitted? ✓

Connecting Rods, Forged by THE DENNYSTONE FORGE CO.

Piston " " W^M BEARDMORE & CO. LTD.

Crossheads, " " D:

Connecting Rods, Finished by M^C KIE & BAXTER

Piston " " D:

Crossheads, " " D:

Date of Harbour Trial 3-4-25

" Trial Trip 18-4-25

Trials run at FIRTH OF CLYDE

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

If so, what was the I.H.P.? 3010 (MEAN) Revols. per min. 71.3 (MEAN)

Pressure in 1st I.P. Receiver, 200 lbs., 2nd I.P., 75 lbs., L.P., 15 lbs., Vacuum, 27.5 ins.

Speed on Trial 12.08 KNOTS (MEAN)

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

data:—

Builders' estimated I.H.P. 2750 Revols. per min. 72

Estimated Speed 11 KNOTS



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TURBINE ENGINES.

Works No. Type of Turbines

No. of H.P. Turbines No. of I.P. No. of L.P. No. of Axleheads

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.

Conditions on Trial

" " 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

TURBO-ELEMENTS OF INSTALLATION.

No. of Turbine-Generating Sets Capacity of each

Type of Turbines employed

Description of Generator

% of Motion Driving Propeller Shafts

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

" " " "

Estimated Pressure per lineal inch

Diam. of 2nd Reduction Pinion

" " " "

Estimated Pressure per lineal inch

Revs. per min. of Generators at Full Power

" " " "

" " " "

" " " "

" " " "

Total Shaft Horse Power

Date of Harbour 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

Diar. of 1st Reduction Pinion

" 1st " Wheel

}

Width

Pitch of Teeth

Estimated Pressure per lineal inch

Diar. of 2nd Reduction Pinion

" 2nd " Wheel

}

Width

Pitch of Teeth

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 Revols. per min.

S.H.P.

Makers of Turbines

" Generators

" Motors

" Reduction Gear

Turbine Spindles forged by

" Wheels forged or cast by

Reduction Gear Shafts forged by

" Wheels forged or cast by

DESCRIPTION OF INSTALLATION.



SHAFTING.

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

No. of Lengths in each Angle of Cranks 120°

Diar. by Rule 14.45 (1945) Actual $14\frac{5}{8}$ " In Way of Webs $14\frac{3}{4}$ "

" of Crank Pins $14\frac{5}{8}$ " Length between Webs $16"$

Greatest Width of Crank Webs $2'-3"$ Thickness $9\frac{1}{2}"$

Least " " $1'-9\frac{1}{4}"$ " $9\frac{1}{4}"$

Diar. of Keys in Crank Webs $2\frac{3}{4}"$ Length $6"$

" Dowels in Crank Pins $1\frac{1}{8}"$ Length $4"$ Screwed or Plain **PLAIN**

No. of Bolts each Coupling 6 Diar. at Mid Length $22\frac{5}{8}"$ Diar. of Pitch Circle $22"$

Greatest Distance from Edge of Main Bearing to Crank Web $1\frac{1}{4}"$

Type of Thrust Blocks **HORSESHOE**

No. " Rings 8

Diar. of Thrust Shafts at bottom of Collars $14\frac{3}{4}"$ No. of Collars 8

" " Forward Coupling $14\frac{5}{8}"$ At Aft Coupling $14\frac{5}{8}"$

Diar. of Intermediate Shafting by Rule 13.61 Actual $14"$ No. of Lengths 7

No. of Bolts, each Coupling 6 Diar. at Mid Length $22\frac{5}{8}"$ Diar. of Pitch Circle $22"$

Diar. of Propeller Shafts by Rule 15.5 Actual $16\frac{1}{4}"$ At Couplings $14\frac{3}{4}"$

Are Propeller Shafts fitted with Continuous Brass Liners? **YES**

Diar. over Liners $18"$ to $18\frac{1}{8}"$ Length of After Bearings $5'-6"$

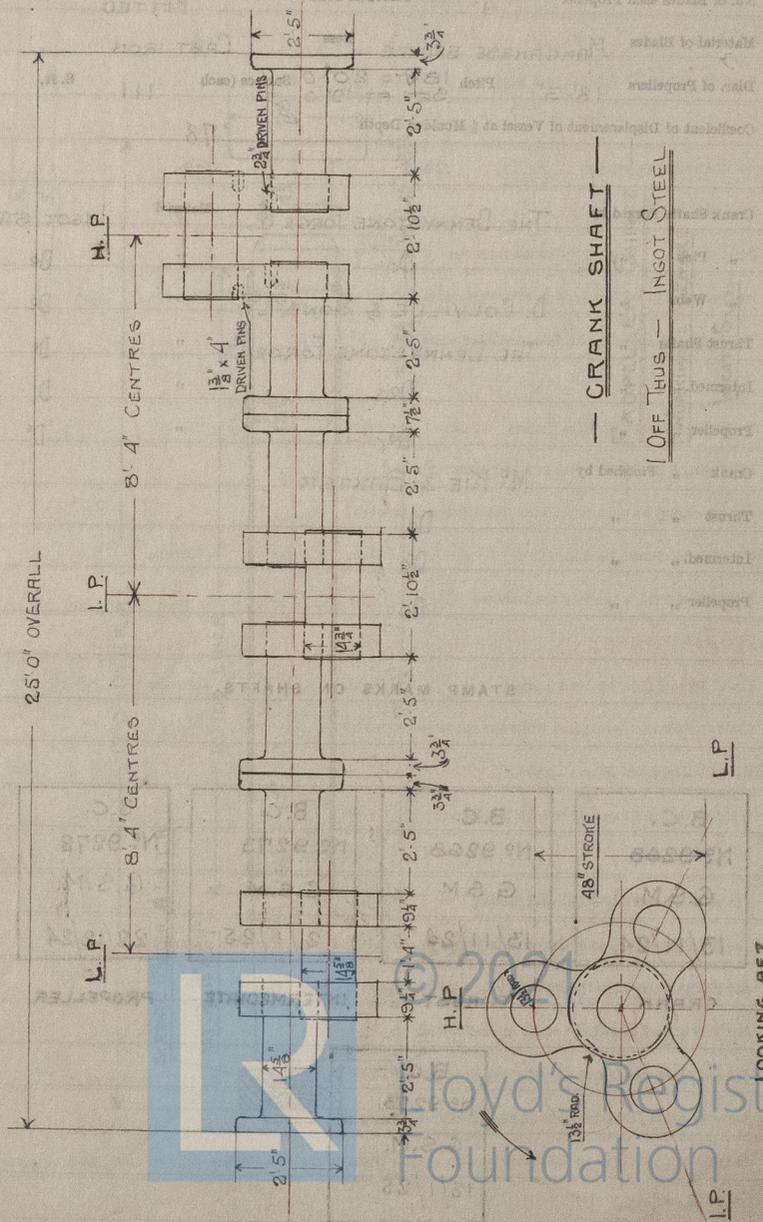
Of what Material are the After Bearings composed? **BRASS & LIGNUMVITAE**

Are Means provided for lubricating the After Bearings with Oil? **No.**

" " to prevent Sea Water entering the Stern Tubes? **No.**

If so, what Type is adopted? **✓**

SKETCH OF CRANK SHAFT.



No. of Blades each Propeller 4 Fitted or Solid? FITTED
 Material of Blades MANGANESE BRONZE Boss CAST IRON
 Diam. of Propellers 18'-3" Pitch 18'-0" to 20'-0" Surface (each 111 S. ft.
SET AT 19'-0"
 Coefficient of Displacement of Vessel at $\frac{1}{2}$ Moulded Depth .78

Crank Shafts Forged by THE DENNYSTONE FORGE CO. Material INGOT STEEL
 " Pins " Do " Do
 " Webs " D. COLVILLE & SONS, L^{rs} " Do
 Thrust Shafts " THE DENNYSTONE FORGE CO. " Do
 Intermed. " " Do " Do
 Propeller " " Do " Do
 Crank " Finished by Mc KIE & BAXTER
 Thrust " " Do
 Intermed. " " Do
 Propeller " " Do

STAMP MARKS ON SHAFTS.

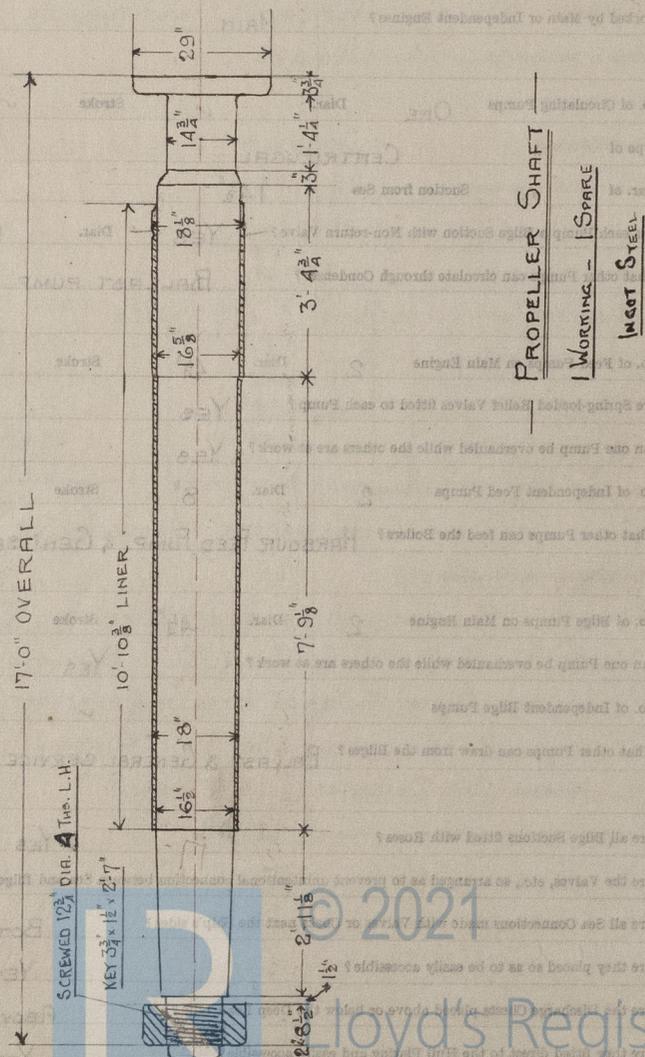
B.C. No 9268 G.S.M. 13/11/24	B.C. No 9268 G.S.M. 13/11/24	B.C. No 9273 G.S.M. 12/1/25	B.C. No 9272 G.S.M. 22/12/24
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CRANK THRUST INTERMEDIATE PROPELLER

B.C. No 9273 G.S.M. 12/1/25

SPARE PROPELLER

SKETCH OF PROPELLER SHAFT.



PUMPS, ETC.

No. of Air Pumps ONE Diar. 25" Stroke 28"

Worked by Main or Independent Engines? MAIN

No. of Circulating Pumps ONE Diar. ✓ Stroke ✓

Type of " CENTRIFUGAL

Diar. of " Suction from Sea 14½"

Has each Pump a Bilge Suction with Non-return Valve? YES Diar. 10"

What other Pumps can circulate through Condenser? BALLAST PUMP

No. of Feed Pumps on Main Engine 2 Diar. 4½" Stroke 28"

Are Spring-loaded Relief Valves fitted to each Pump? YES

Can one Pump be overhauled while the others are at work? YES

No. of Independent Feed Pumps 2 Diar. 8" Stroke 22"

What other Pumps can feed the Boilers? HARBOUR FEED PUMP. & GEN. SERVICE PUMP.

No. of Bilge Pumps on Main Engine 2 Diar. 4½" Stroke 28"

Can one Pump be overhauled while the others are at work? YES

No. of Independent Bilge Pumps ✓

What other Pumps can draw from the Bilges? BALLAST & GENERAL SERVICE PUMPS

Are all Bilge Suctions fitted with Roses? YES

Are the Valves, etc., so arranged as to prevent unintentional connection between Sea and Bilges?

Are all Sea Connections made with Valves or Cocks next the Ship's sides? BOTH

Are they placed so as to be easily accessible? YES

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

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

DRAWING BOILER

Water No. 842

No. of Boilers 2 Type CYLINDRICAL MULTITUBULAR

Boiler or Boilerplate

No. of Tubes in each

Type of Tubes

Date when last approved

Approved by the Board

Hull No. 250

Date of Building

Name of Ship

Name of Builder

Name of Engineer

Name of Surveyor

Name of Designer

Name of Contractor

Name of Ship

Name of Builder

Name of Engineer

Name of Surveyor

Name of Designer

Name of Contractor

Name of Ship

Name of Builder

Name of Engineer

Name of Surveyor

Name of Designer

Name of Contractor

Name of Ship



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BOILERS.

Works No. 845

No. of Boilers 3 Type CYLINDRICAL, MULTITUBULAR

Single or Double-ended SINGLE

No. of Furnaces in each 3

Type of Furnaces DEIGHTON

Date when Plan approved 25.6.23

Approved Working Pressure 200 Lbs.

Hydraulic Test Pressure 350 Lbs.

Date of Hydraulic Test 19/12/24 & 30/12/24

„ when Safety Valves set 3-4-25

Pressure at which Valves were set 205 Lbs.

Date of Accumulation Test 18-4-25

Maximum Pressure under Accumulation Test 208 Lbs.

System of Draught CLOSED ASHPITS. (HOWDEN'S F.D.)

Can Boilers be worked separately? YES

Makers of Plates RHEINISCHE STAHLWERKE, WERK III. DUISBURG.

WRAPPERS - (SPENCER) THE STEEL CO. OF SCOTLAND LTD

„ Stay Bars AUGUST THYSSEN-HÜTTE GEWERKSCHAFT, HAMBURG.

„ Rivets N.W. RIVET, BOLT & NUT CO. AIRDRIE

„ Furnaces THE DEIGHTON FLUE & TUBE CO.

Greatest Internal Diam. of Boilers 16'-1 19/16"

„ „ Length „ 12'-0"

Square Feet of Heating Surface each Boiler 2830

„ „ Grate „ „ 60

No. of Safety Valves each Boiler 2 Rule Diam. 3 1/4" Actual 3 1/4"

Are the Safety Valves fitted with Easing Gear? YES

No. of Pressure Gauges, each Boiler ONE No. of Water Gauges 2

„ Test Cocks „ NONE „ Salinometer Cocks ONE

HYDRAULIC TESTS OF BOILERS

PORT	CENTRE	STARBOARD
-B.C. TEST	B.C. TEST	B.C. TEST
No 4739	No 4737	No 4737
350 Lbs.	350 Lbs.	350 Lbs.
W.P. 200 Lbs.	W.P. 200 Lbs.	W.P. 200 Lbs.
G. S. M.	G. M. L.	G. M. L.
30/12/24	19/12/24	19/12/24



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

Are the Water Gauge Pillars fitted direct to the Boiler Shells or connected by Pipes? DIRECT. WITH PIPES.

Are these Pipes connected to Boilers by Cocks or Valves? COCKS

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

No. of Strakes of Shell Plating in each Boiler 1

Plates in each Strake 3

Thickness of Shell Plates Approved $1\frac{1}{16}$ "

" " in Boilers $1\frac{1}{16}$ "

Are the Rivets Iron or Steel? STEEL

Are the Longitudinal Seams Butt or Lap Joints? BUTT

Are the Butt Straps Single or Double? DOUBLE

Are the Double Butt Straps of equal width? YES

Thickness of outside Butt Straps $\frac{3}{32}$ "

" inside " $\frac{1}{32}$ "

Are Longitudinal Seams Hand or Machine Riveted? MACHINE

Are they Single, Double, or Treble Riveted? TREBLE

No. of Rivets in a Pitch 5

Diar. of Rivet Holes $1\frac{1}{2}$ " Pitch $10\frac{1}{8}$ "

No. of Rows of Rivets in Centre Circumferential Seams ✓

Are these Seams Hand or Machine Riveted? ✓

Diar. of Rivet Holes ✓ Pitch ✓

No. of Rows of Rivets in Front End Circumferential Seams 2

Are these Seams Hand or Machine riveted? HAND

Diar. of Rivet Holes $1\frac{1}{2}$ " Pitch $4\frac{1}{4}$ "

No. of Rows of Rivets in Back End Circumferential Seams 2

Are these Seams Hand or Machine Riveted? MACHINE

Diar. of Rivet Holes $1\frac{1}{2}$ " Pitch $4\frac{1}{4}$ "

Size of Manholes in Shell $16" \times 12"$

Dimensions of Compensating Rings $2'-11\frac{1}{4}" \times 2'-7\frac{1}{2}" \times 1\frac{7}{16}"$

Thickness of End Plates in Steam Spaces Approved

in Boilers

Pitch of Steam Spaces Straps

Diar. of Rivets per Inch

in Boilers

Material of

How are Straps Riveted?

Diar. and Thickness of Loose Washers on End Plates

Rivets

Double Straps

Thickness of Middle Back End Plates Approved

in Boilers

Thickness of Doublers in Wide Spaces between Fireboxes

Pitch of Straps

Diar. of Straps Approved

in Bottom

Material

Are Straps fitted with Nut outside?

Thickness of Back End Plates at Bottom Approved

in Boilers

Pitch of Straps in Wide Spaces between Fireboxes

Thickness of Doublers in

Thickness of Front End Plates at Bottom Approved

in Boilers

No. of Longitudinal Straps between Fireboxes

5



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Thickness of End Plates in Steam Space Approved	$\frac{7}{16}$ "
" " " " " in Boilers	$\frac{3}{16}$ "
Pitch of Steam Space Stays	$1'-10\frac{3}{4}" \times 1'-11\frac{1}{2}"$
Diar. " " " " Approved	$3\frac{3}{4}$ "
Threads per Inch	8
" " " " " in Boilers	$3\frac{3}{4}$ "
"	8
Material of " " "	STEEL
How are Stays Secured?	DOUBLE NUTS
Diar. and Thickness of Loose Washers on End Plates	$1\frac{1}{8}" \times 1\frac{1}{32}"$
" " " " Riveted " " "	✓
Width " " Doubling Strips "	✓
Thickness of Middle Back End Plates Approved	$\frac{29}{32}$ "
" " " " " in Boilers	$\frac{7}{8}$ "
Thickness of Doublings in Wide Spaces between Fireboxes	✓
Pitch of Stays at " " " "	$8\frac{3}{8}" \times 8\frac{1}{8}"$
Diar. of Stays Approved	$1\frac{1}{8}$ "
Threads per Inch	10
" " " " in Boilers	$1\frac{1}{8}$ "
"	10
Material "	STEEL
Are Stays fitted with Nuts outside?	YES
Thickness of Back End Plates at Bottom Approved	$\frac{29}{32}$ "
" " " " " in Boilers	$\frac{7}{8}$ "
Pitch of Stays at Wide Spaces between Fireboxes	$8\frac{3}{8}" \times 8\frac{1}{8}"$
Thickness of Doublings in " "	✓
Thickness of Front End Plates at Bottom Approved	$\frac{1}{32}$ "
" " " " " in Boilers	$\frac{1}{32}$ "
No. of Longitudinal Stays in Spaces between Furnaces	3

Thickness of End Plates in Steam Space Approved	$\frac{7}{16}$ "
" " " " " in Boilers	$\frac{3}{16}$ "
Pitch of Steam Space Stays	$1'-10\frac{3}{4}" \times 1'-11\frac{1}{2}"$
Diar. " " " " Approved	$3\frac{3}{4}$ "
Threads per Inch	8
" " " " " in Boilers	$3\frac{3}{4}$ "
"	8
Material of " " "	STEEL
How are Stays Secured?	DOUBLE NUTS
Diar. and Thickness of Loose Washers on End Plates	$1\frac{1}{8}" \times 1\frac{1}{32}"$
" " " " Riveted " " "	✓
Width " " Doubling Strips "	✓
Thickness of Middle Back End Plates Approved	$\frac{29}{32}$ "
" " " " " in Boilers	$\frac{7}{8}$ "
Thickness of Doublings in Wide Spaces between Fireboxes	✓
Pitch of Stays at " " " "	$8\frac{3}{8}" \times 8\frac{1}{8}"$
Diar. of Stays Approved	$1\frac{1}{8}$ "
Threads per Inch	10
" " " " in Boilers	$1\frac{1}{8}$ "
"	10
Material "	STEEL
Are Stays fitted with Nuts outside?	YES
Thickness of Back End Plates at Bottom Approved	$\frac{29}{32}$ "
" " " " " in Boilers	$\frac{7}{8}$ "
Pitch of Stays at Wide Spaces between Fireboxes	$8\frac{3}{8}" \times 8\frac{1}{8}"$
Thickness of Doublings in " "	✓
Thickness of Front End Plates at Bottom Approved	$\frac{1}{32}$ "
" " " " " in Boilers	$\frac{1}{32}$ "
No. of Longitudinal Stays in Spaces between Furnaces	3



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Diar. of Stays Approved	2 $\frac{1}{2}$ "	Threads per Inch	8
" " in Boilers	2 $\frac{1}{2}$ "		8
Material			STEEL
Thickness of Front Tube Plates Approved			$\frac{1}{32}$ "
" " " " in Boilers			$\frac{1}{32}$ "
Pitch of Stay Tubes at Spaces between Stacks of Tubes			7 $\frac{1}{2}$ "
Thickness of Doublings in " " "			v
" Stay Tubes at " " "			$\frac{3}{8}$ "
Are Stay Tubes fitted with Nuts at Front End?			No
Thickness of Back Tube Plates Approved			$\frac{23}{32}$ "
" " " " in Boilers			$\frac{3}{4}$ "
Pitch of Stay Tubes in Back Tube Plates			7 $\frac{1}{2}$ " x 11 $\frac{1}{4}$ "
" Plain "			3 $\frac{3}{4}$ "
Thickness of Stay Tubes			$\frac{5}{16}$ " & $\frac{3}{8}$ "
" Plain "			N ^o 8 W.G. (16s)
External Diar. of Tubes			2 $\frac{1}{2}$ "
Material			L.W. WROT. IRON.
Thickness of Furnace Plates Approved			$\frac{23}{32}$ "
" " " " in Boilers			$\frac{23}{32}$ "
Smallest outside Diar. of Furnaces			4'-6 $\frac{1}{2}$ "
Length between Tube Plates			8'-0"
Width of Combustion Chambers (Front to Back)			3'-2" (OUTSIDE PLATES)
Thickness of " " Tops Approved			$\frac{5}{8}$ "
" " " " in Boilers			$\frac{5}{8}$ "
Pitch of Screwed Stays in C.C. Tops			8 $\frac{1}{8}$ "

Diar. of Screwed Stays Approved	10	Threads per Inch	8
" " " " in Boilers	10		8
Material			STEEL
Thickness of Front Tube Plates Approved			$\frac{1}{32}$ "
" " " " in Boilers			$\frac{1}{32}$ "
Pitch of Stay Tubes at Spaces between Stacks of Tubes			7 $\frac{1}{2}$ "
Thickness of Doublings in " " "			v
" Stay Tubes at " " "			$\frac{3}{8}$ "
Are Stay Tubes fitted with Nuts at Front End?			No
Thickness of Back Tube Plates Approved			$\frac{23}{32}$ "
" " " " in Boilers			$\frac{3}{4}$ "
Pitch of Stay Tubes in Back Tube Plates			7 $\frac{1}{2}$ " x 11 $\frac{1}{4}$ "
" Plain "			3 $\frac{3}{4}$ "
Thickness of Stay Tubes			$\frac{5}{16}$ " & $\frac{3}{8}$ "
" Plain "			N ^o 8 W.G. (16s)
External Diar. of Tubes			2 $\frac{1}{2}$ "
Material			L.W. WROT. IRON.
Thickness of Furnace Plates Approved			$\frac{23}{32}$ "
" " " " in Boilers			$\frac{23}{32}$ "
Smallest outside Diar. of Furnaces			4'-6 $\frac{1}{2}$ "
Length between Tube Plates			8'-0"
Width of Combustion Chambers (Front to Back)			3'-2" (OUTSIDE PLATES)
Thickness of " " Tops Approved			$\frac{5}{8}$ "
" " " " in Boilers			$\frac{5}{8}$ "
Pitch of Screwed Stays in C.C. Tops			8 $\frac{1}{8}$ "



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Diam. of Screwed Stays Approved	$\frac{1}{2}$ "	Threads per Inch	10
" " " in Boilers	$\frac{1}{2}$ "		10
Material " "		STEEL	
Thickness of Combustion Chamber Sides Approved			$\frac{5}{8}$ "
" " " " in Boilers			$\frac{5}{8}$ "
Fitch of Screwed Stays in C.O. Sides			$8\frac{3}{8} \times 8\frac{1}{8}$
Diam. " " Approved	$\frac{1}{2}$ "	Threads per Inch	10
" " " in Boilers	$\frac{1}{2}$ "		10
Material " "		STEEL	
Thickness of Combustion Chamber Backs Approved			$\frac{5}{8}$ "
" " " " in Boilers			$\frac{5}{8}$ "
Pitch of Screwed Stays in C.O. Backs			$7\frac{3}{4}$ "
Diam. " " Approved	$2\frac{1}{8}$ " $1\frac{7}{8}$ " & $1\frac{5}{8}$ "	Threads per Inch	10
" " " in Boilers	Do.		10
Material " "		STEEL	
Are all Screwed Stays fitted with Nuts inside C.O.?		YES	
Thickness of Combustion Chamber Bottoms			$\frac{13}{16}$ "
No. of Girders over each Wing Chamber			5
" " " Centre "			3
Depth and Thickness of Girders			$10" \times \frac{3}{4}"$
Material of Girders		STEEL	
No. of Stays in each			3
No. of Tubes, each Boiler	326 PLAIN. 124 STAY. 450 TOTAL		
Size of Lower Manholes			$16" \times 12"$

VERTICAL DONKEY BOILERS

No. of Boilers	Type	
Greatest Int. Diam.	Height	
Height of Boiler Crown above Fly Gears		
Are Boiler Crowns Flat or Dished?		
Internal Radius of Dished Boilers	Thickness of Plates	
Description of Seams in Boiler Crowns		
Diam. of Flues Boilers	Width of Overlap	
Height of Firebox Crown above Fly Gears		
Are Firebox Crowns Flat or Dished?		
Internal Radius of Dished Crowns	Thickness of Plates	
No. of Crown Stays	Diam.	
External Diam. of Firebox at Top	Thickness of Plates	
No. of Water Tubes	Int. Diam.	
Material of Water Tubes		
Size of Manhole in Shell		
Dimensions of Compressing Ring		
Heating surface, each boiler	Gate 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 Pipes

Material

Radius, Welded or Seamed

Internal Diar.

Thickness

How are Joints secured?

Date of Hydraulic Test

Test Pressure

No. of Pipes

Material

Radius, Welded or Seamed

Internal Diar.

Thickness

How are Joints secured?

Date of Hydraulic Test

Test Pressure



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MAIN STEAM PIPES.

No. of Lengths	5		
Material	STEEL		
Brazed, Welded or Seamless	WELDED		
Internal Diar.	5"		
Thickness	$\frac{1}{4}$ "		
How are Flanges secured?	SCREWED & EXP?		
Date of Hydraulic Test	1-A-25		
Test Pressure	600 LBS.		
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			

STEAM EVAPORATORS

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			



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EVAPORATORS.

No. ONE Type VERTICAL Tons per Day 30
 Makers G. & J. WEIR, L^o. CATHCART. N^o 75389
 S.V. SET @ SHELL 50 LBS.
 Working Pressure 25 LBS. Test Pressure TUBES 400. Date of Test 31-10-24
 Date of Test of Safety Valves under Steam 18-4-25

FEED WATER HEATERS.

No. ONE Type DIRECT CONTACT N^o 75387
 Makers G. & J. WEIR, L^o. CATHCART.
 ESCAPE SET @
 Working Pressure 20 LBS. Test Pressure 40 LBS. Date of Test 31-10-24

FEED WATER FILTERS.

No. ONE Type "CASCADE", MULTIFLOW. Size N^o 5
 Makers THE CONTRAFLW ENGINEERING CO. L^o. LONDON. N^o 692.
 Working Pressure ✓ Test Pressure ✓ Date of Test ✓

LIST OF DONKEY PUMPS.

MAIN FEED PUMP 2 IN N^o G. & J. WEIR, L^o. N^o 10½" x 8" x 22"
 SUCTIONS:- BOILERS. CONDENSER. HEATER. FILTER. SEA.
 DISCHARGES:- BOILERS THRO MAIN & AUX FEED CHECKS, OVERBOARD.
 HARBOUR DITTO 1 IN N^o J. H. CARRUTHERS & CO. L^o. N^o 5" x 3½" x 8"
 SUCTIONS:- FLOAT TANK. CASCADE TANK. SEA.
 DISCHARGE:- BOILERS.
 BALLAST PUMP 1 IN N^o J. H. CARRUTHERS & CO. L^o. N^o 10" x 12" x 12"
 SUCTIONS:- SEA. TANK LINE. BILGE. SPECIAL BILGE
 DISCHARGES:- MAIN & AUX. CONDENSERS. TANK LINE. OVERBOARD.
 GEN^l SERVICE PUMP 1 IN N^o J. H. CARRUTHERS & CO. L^o. N^o 7½" x 5" x 10"
 SUCTIONS:- SEA. BILGES. TANK LINE. CONDENSER. FILTER.
 DRY TANK. BOILERS.
 DISCHARGES:- OVERBOARD. DECK. SANITARY TANK. BOILERS.
 CIRCULATING PUMP 1 IN N^o Mc Kie & BAXTER
 SUCTIONS:- SEA. E.R. BILGE
 DISCHARGE:- OVERBOARD. THRO CONDENSER.



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SPARE GEAR

No. of Top End Bolts.	2	No. of Bot. End Bolts.	2	No. of Cylinder Cover Studs.	6
" Coupling Bolts	1 SET	" Main Bearing Bolts	2	" Valve Chest "	6
" Junk Ring Bolts	12	" Feed Pump Valves	2 SETS	" Bilge Pump Valves	1 SET
" H.P. Piston Rings	1 SET	" I.P. Piston Rings	1 SET	" L.P. Piston Rings	
" " Springs	1 Do.	" " Springs	1 Do.	" " Springs	
" Safety Valve "	1 PAIR	" Fire Bars	1 SET FOR 1 BOILER	" Feed Check Valves	1 H.P. 1 L.P.
" Piston Rods		" Connecting Rods		" Valve Spindles	1 H.P. 1 L.P.
" Air Pump Rods	ONE	" Air Pump Buckets		" Air Pump Valves	1 SET
" Cir. "		" Cir. "		" Cir. "	
" Crank Shafts		" Crank Pin Bushes	1 PAIR	" Crosshead Bushes	1 PAIR
" Propeller Shafts	ONE	" Propellers		" Propeller Blades	1 (BRONZE)
" Boiler Tubes	24	" Condenser Tubes	36	" Condenser Ferrules	100

OTHER ARTICLES OF SPARE GEAR—

- 1 SET OF LINK BRASSES FOR TWO ENDS
- 1 ECCENTRIC STRAP COMPLETE
- 1 SET OF BEARING RINGS EACH FOR H.P. & I.P. PISTON RODS & SPRINGS.
- 1 CYLINDER ESCAPE VALVE SPRING
- 1 SET OF FURNACE FRONT BAFFLE PLATES FOR ONE BOILER,
- WITH DOOR BAFFLES & PATTERN, TOUG
- 1 BRASS IMPELLER & 1 BRONZE SPINDLE FOR CENTRIFUGAL PUMP.

REFRIGERATORS

No. of Machines	Capacity of each	Description
		(ONE SMALL MACHINE FOR SWISS USE)
No. of Steam Cylinders, each Machine	No. of Compressors	No. of Cylinders
Particulars of Springs in connection with Refrigerating Plant and whether tested by Refrigerating Machines		
No. of Refrigerators		



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ELECTRIC LIGHTING.

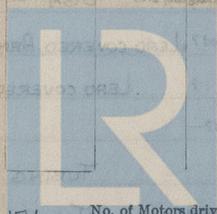
Installation Fitted by **TELFORD, GRIER & MACKAY**
 No. and Description of Dynamos **ONE, CASTLE TYPE, 4-POLE**
 Makers of Dynamos **J. H. HOLMES & CO. NEWCASTLE**
 Capacity " **118** Amperes, at **110** Volts, **330** Revs. per Min.
 Current Alternating or Continuous **CONTINUOUS.**
 Single or Double Wire System **DOUBLE**
 Position of Dynamos **BOTTOM PLATFORM, ST^o SIDE ENGINE ROOM**
 " Main Switch Board **ON BULKHEAD, ABAFT DYNAMO.**
 No. of Circuits to which Switches are provided on Main Switch Board **6**

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. FORWARD.	21	16	11	7/044	1100	100%	600 Meg
2. NAV ^o OFFICERS	52	30 WATT	15	D ^o	1500	D ^o	D ^o
3. ENG ^o OFFICERS	55	30 WATT	16	D ^o	1600	D ^o	D ^o
4. ENGINE ROOM	31	16	15	7/036	2143	D ^o	D ^o
5. NAVIGATION	12	VARIOUS	7	D ^o	1000	D ^o	D ^o
6. WIRELESS	-	-	15	7/044	1500	D ^o	D ^o

Total No. of Lights **171** No. of Motors driving Fans, &c. **1** No. of Heaters **1**

Current required for Motors and Heaters **1 1/2** K.W.



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

NONE

Position	No. of Switches
On Main Switch Board, to Cables of Main Circuits	22
On Aux. " " each Auxiliary Circuit	22

Are Out-outs fitted as follows?—

On Main Switch Board, to Cables of Main Circuits

YES

On Aux. " " each Auxiliary Circuit

YES

Wherever a Cable is reduced in size

To each Lamp Circuit

YES

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

YES

Are the Fuses of Standard Sizes?

YES

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

YES

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

YES

Smallest Single Wire used, No. 064 S.W.G., Largest, No. 064 S.W.G.

How are Conductors in Engine and Boiler Spaces protected? LEAD COVERED, ARMURED & BRAIDED.

" Saloons, State Rooms, &c., " ? LEAD COVERED.

What special protection is provided in the following cases?—

(1) Conductors exposed to Heat or Damp

TUBING.

(2) " " passing through Bunkers or Cargo Spaces

TUBING

(3) " " (a) Deck Beams or Bulkheads (a) W.T. GLANDS. (b) PACKED DECK TUBES.

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

is unimpaired? No JOINTS

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

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?

1.17

Ohms.

Is the Installation supplied with a Voltmeter?

YES

" " " an Ampere Meter?

YES

Date of Trial of complete Installation

18-4-25

Duration of Trial

6 Hrs

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

Yes.



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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?

Has the Installation Resilience over the whole system been tested?

What does the Resilience amount to?

Is the Installation supplied with a Ventilator?

Is an Amper's Light?

Date of Trial of complete Installation

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

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. "BARON FAIRLIE"

as ascertained by me from personal examination

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

Fees—

MAIN BOILERS.

	£	s.	d.
H.S.			
G.S.			

DONKEY BOILERS.

	£	s.	d.
H.S.			
G.S.			

ENGINES.

	£	s.	d.
L.P.C.			
Testing, &c.			
Expenses			
Total			

It is submitted that this Report be approved.

W. H. King
 Chief Surveyor.

Approved by the Committee for the Class of M.B.S.* on the *6th May 1925*

Fees advised

Fees paid



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 Secretary

W. H. King

11th July 1942

Replace H.P. Cylinder Hyd test 300 lb/d² (EF)
Part H.P. Column renewed at this time
also.

27.



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11th July 1942

Revised H.P. Cylinders Hydro test 200 lbs (50)

Part H.P. Column removed at this time

also:

2-7



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