

No. 2086

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. 2124 No. in Register Book 3449

NN. ALGOL

EX

S.S. "BARON YARBOROUGH"

Makers of Engines S. Rowan & Co Ltd

Works No. 861

Makers of Main Boilers S. Rowan & Co Ltd

Works No. 861

Makers of Donkey Boiler

Works No.

MACHINERY.



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No.

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. 52 No. in Register Book 48

Received at Head Office 24th March 1928

Surveyor's Report on the New Engines, Boilers, and Auxiliary
Machinery of the Single Triple Screw Steamship

"BARON YARBOROUGH"

Official No.

Port of Registry

Androssan

Registered Owners

Kelvin Shipping Co Ltd

(Messrs Stogarth & Co Ltd Managers)

Engines Built by

J. Rowan & Co Ltd

at

Glasgow

Main Boilers Built by

J. Rowan & Co Ltd

at

Glasgow

Donkey

at

Date of Completion

10/3/28

First Visit

17/1/28

Last Visit

10/3/28

Total Visits

35

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RECIPROCATING ENGINES.

Works No. *861* No. of Sets *1* Description *Triple Expansion surface condensing 3 crank steam engine*

No. of Cylinders each Engine *3* No. of Cranks *3*
 Diars. of Cylinders *21 1/2", 31" and 62"* Stroke *39"*
 Cubic feet in each L.P. Cylinder *68.13*

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

" " " each Receiver? *1 P. & L.P.*

Type of H.P. Valves, *Piston*
 " 1st I.P. " *Andrews & Cameron*
 " 2nd I.P. " *—*
 " L.P. " *Double-ported D slide valve.*
 " Valve Gear *Stephensons Link motion*
 " Condenser *Surface* Cooling Surface *1850*, sq. ft.

Diameter of Piston Rods (plain part) *5 1/2"* Screwed part (bottom of thread)

Material " *mild steel*

Diar. of Connecting Rods (smallest part) *5 1/4"* Material *M. Steel*

" Crosshead Gudgeons *6"* Length of Bearing *286"* Material " "

No. of Crosshead Bolts (each) *4* Diar. over Thrd. *2 1/2"* Thrds. per inch *6* Material *H.S.*

" Crank Pin " *2* " *3 1/4"* " *6* " "

" Main Bearings *6* Lengths *11 7/8"*

" Bolts in each *2* Diar. over Thread *2 1/2"* Threads per inch *6* Material *H.S.*

" Holding Down Bolts, each Engine *86* Diar. *1 3/8"* No. of Metal Chocks *86*

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, except*

If not, how are they fitted?

Connecting Rods, Forged by *Henschel & Sohn*

Piston " " *S. Rowan & Co Ltd*

Crossheads, " " " " " "

Connecting Rods, Finished by *S. Rowan & Co Ltd*

Piston " " " " " "

Crossheads, " " " " " "

Date of Harbour Trial *2/3/28.*

" Trial Trip *10/3/28.*

Trials run at *Skelmorlie*

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

If so, what was the I.H.P.? *1640* Revols. per min. *72.375*

Pressure in 1st I.P. Receiver, *70* lbs., 2nd I.P., — lbs., L.P., *12 1/2* lbs., Vacuum, *27* ins.

Speed on Trial *10.946.*

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

data:—

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

Estimated Speed

2 in steel tank & 3 in port. which are caulked only

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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

" 1st " Wheel

Width

Pitch of Teeth

Estimated Pressure per lineal inch

Diam. 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 Revs. per min.

S.H.P.

Makers of Turbines

Generators

Motors

Reduction Gears

Turbine Spindles forged by

Wheels forged or cast by

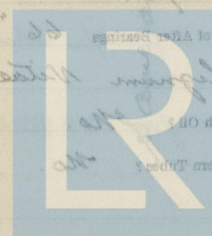
Reduction Gear Shafts forged by

Wheels forged or cast by

DESCRIPTION OF INSTALLATION.

Type of Thrust Blocks
 No. of Rings
 Diam. of Thrust Shafts at bottom of Collars
 Forward Coupling
 At Aft Coupling
 No. of Bolts each Coupling
 Diam. at Mid Length
 Pitch Circle
 No. of Lengths
 Actual
 Diam. of Propeller Shafts by Rule
 At Couplings
 Are Propeller Shafts fitted with Continuous Frame Liners?
 Diam. over Liners
 At what Material are the After Bearings composed?
 Are Bearings provided for lubricating the After Bearings with Oil?
 Do Bearings run in water containing the Stern Tubes?
 If so what type of bearings?

* 1st trial this class of power was made bearing



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SHAFTING.

Are the Crank Shafts Built or Solid?

Built

No. of Lengths in each

3.

Angle of Cranks

120°

Diar. by Rule

11.8"

Actual

11.875"

In Way of Webs

12.125"

" of Crank Pins

11.875"

Length between Webs

12"

Greatest Width of Crank Webs

23"

Thickness

7.375" 7 1/16"

Least

18"

"

7 1/16"

Diar. of *dowels.* Keys in Crank Webs

2"

Length

5"

" Dowels in Crank Pins

—

Length

Screwed or Plain

—

No. of Bolts each Coupling

6

Diar. at Mid Length

2 7/8"

Diar. of Pitch Circle

17 3/4"

Greatest Distance from Edge of Main Bearing to Crank Web

1/4"

Type of Thrust Blocks

Horse-shoe multi-collar fitted with bearing at each end

No. " Rings

4

Diar. of Thrust Shafts at bottom of Collars

12.125"

No. of Collars

4

" " Forward Coupling

11.875"

At Aft Coupling

11.875"

Diar. of Intermediate Shafting by Rule

11.237" Actual

11.25"

No. of Lengths

5

No. of Bolts, each Coupling

6

Diar. at Mid Length

2 7/8"

Diar. of Pitch Circle

17 3/4"

Diar. of Propeller Shafts by Rule

12.57" Actual

13.5"

At Couplings

11.875"

Are Propeller Shafts fitted with Continuous Brass Liners?

Yes

Diar. over Liners

14 7/8" & 15"

Length of After Bearings

66"

50.28"

Of what Material are the After Bearings composed?

Lignum Vitae

Are Means provided for lubricating the After Bearings with Oil?

No.

" " to prevent Sea Water entering the Stern Tubes?

No.

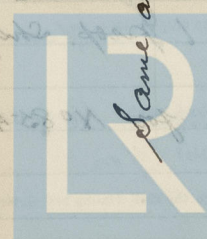
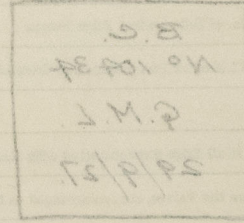
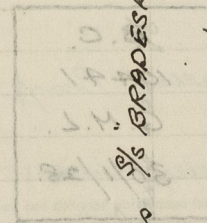
If so, what Type is adopted?

SKETCH OF CRANK SHAFT.

Same as 1/8 BARDESK (No 857) & 1/8 BARON SALOON (No 853)

except NO crank pin dowels

Shrinkage 2/1000 per inch



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* 1st vessel this class of Rowans with double bearing

No. of Blades each Propeller *4* Fitted or Solid? *Solid*
 Material of Blades *Bronze* Boss *Bronze*
 Diam. of Propellers *16'-0"* Pitch *16'-0"* Surface (each) *83* S. ft.
 Coefficient of Displacement of Vessel at $\frac{1}{2}$ Moulded Depth

Crank Shafts Forged by	<i>Henschel & Sohn</i>	Material	<i>I. S.</i>
" Pins "	" "	"	"
" Webs "	<i>Rheinische Westfälische</i>	"	"
* Thrust Shafts "	<i>Gutehoffnungshütte</i>	"	"
Intermed. " "	<i>Henschel & Sohn</i>	"	"
Propeller " "	" "	"	"
Crank " Finished by	<i>S. Rowan & Co Ltd</i>		
Thrust " "	" "	"	"
Intermed. " "	" "	"	"
Propeller " "	" "	"	"

STAMP MARKS ON SHAFTS.

B.C.
 No 10434
 G.M.L.
 29/9/27.

B.C.
 10441
 G.M.L.
 30/11/28

1 crank shaft.
 1 thrust, 5-Interm.

1 prop. shaft.

Original thrust shaft used for No 854 $\frac{1}{2}$ " BARN

SKETCH OF PROPELLER SHAFT.

Sketch of Propeller Shaft showing details of construction and components. The diagram includes labels for various parts such as the crank shaft, propeller, and various bearings and supports. The text is written in a cursive script and includes a large vertical label "SALTON" (No 854) and a horizontal label "COCHRANE". The sketch is a technical drawing of a propeller shaft, showing its internal components and the way they are connected. The drawing is done in a simple, sketchy style, with lines indicating the shape and position of the various parts. The text is written in a cursive script, which is typical of the era. The overall impression is that of a technical drawing from a shipbuilding or engineering manual.

PUMPS, ETC.

No. of Air Pumps *One* Diar. *18"* Stroke *21"*
 Worked by Main or Independent Engines? *main, from L.P. crosshead*

links.

No. of Circulating Pumps *One* Diar. *9"* Stroke *—*

Type of " *Centrifugal (Grysdale)*

Diar. of " *Suction from Sea 9"*

Has each Pump a Bilge Suction with Non-return Valve? *Yes.* Diar. *6"*

What other Pumps can circulate through Condenser? *Ballast Pump.*

No. of Feed Pumps on Main Engine *2* Diar. *3 1/4"* Stroke *21"*

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 *One* Diar. *—* Stroke *Weir's*

What other Pumps can feed the Boilers? *General Service.*

No. of Bilge Pumps on Main Engine *2* Diar. *3 1/2"* Stroke *21"*

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 Pump.*

Are all Bilge Suctions fitted with Roses? *Yes, except where straight*

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.*

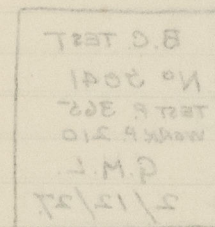
Are the Discharge Chests placed above or below the Deep Load Line? *Below (Siphon)*

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.*

BOILERS



Leads with mud-box (4 in E.R.)



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BOILERS.

Works No. 861

No. of Boilers 2 Type *Cylindrical Multitubular*Single or Double-ended *Single-ended.*

No. of Furnaces in each 3

Type of Furnaces *Seighton*

Date when Plan approved 15

Approved Working Pressure *210 lbs/10"*Hydraulic Test Pressure *365 lbs/10"*Date of Hydraulic Test *2/12/27.*" when Safety Valves set *2/3/28*Pressure at which Valves were set *217 lbs/10"*Date of Accumulation Test *2/3/28*Maximum Pressure under Accumulation Test *218 lbs/10"*System of Draught *Natural*Can Boilers be worked separately? *Yes.*Makers of Plates *Mannesmannröhren - Werke A.G.*" Stay Bars *Vereinigte Stahlwerke Ruhrort.*" Rivets *Rivet Bolt & Nut Co Ltd*" Furnaces *John Marshall & Co Ltd*Greatest Internal Diam. of Boilers *15'-10 1/2"*" " Length " *11'-6"*Square Feet of Heating Surface each Boiler *2563*" " Grate " " *58.45*No. of Safety Valves each Boiler 2 Rule Diam. 3" Actual *3 3/4"*Are the Safety Valves fitted with Easing Gear? *Yes.*

No. of Pressure Ganges, each Boiler 1 No. of Water Ganges 2

" Test Cocks 3 " Salinometer Cocks 1

B.C. TEST

No 5041

TEST P. 365

WORK P. 210

G.M.L.

2/12/27.

- 2 BOILERS -

Are the Water Ganges fitted direct to the Boiler Shells or mounted on Flanges?

Are the Water Ganges 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 Stakes of Shell Flaring in each Boiler

Plates in each Strake

Thickness of Shell Plates Approved

" " in Boilers

Are the Rivets Iron or Steel?

Are the Longitudinal Seams Butt or Lap Joints?

Are the Butt Straps Single or Double?

Are the Double Butt Straps of equal width?

Thickness of outside Butt Straps

" " inside

Are Longitudinal Seams Hand or Machine Riveted?

Are they Single, Double, or Triple Riveted?

No. of Rivets in a Flitch

Pitch of Rivet Holes

No. of Rows of Rivets in Centre Circumferential Seams

Are these Seams Hand or Machine Riveted?

Pitch of Rivet Holes

No. of Rows of Rivets in Front and Circumferential Seams

Are these Seams Hand or Machine riveted?

Pitch of Rivet Holes

No. of Rows of Rivets in Back and Circumferential Seams

Are these Seams Hand or Machine Riveted?

Pitch of Rivet Holes

No. of Rivets in Shell

Dimensions of Compensating Rings



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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

Plates in each Strake

Thickness of Shell Plates Approved

in Boilers

Are the Rivets Iron or Steel?

Are the Longitudinal Seams Butt or Lap Joints?

Are the Butt Straps Single or Double?

Are the Double Butt Straps of equal width?

Thickness of outside Butt Straps

inside

Are Longitudinal Seams Hand or Machine Riveted?

Are they Single, Double, or Treble Riveted?

No. of Rivets in a Pitch

Diar. of Rivet Holes

Pitch

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

Are these Seams Hand or Machine riveted?

Diar. of Rivet Holes

Pitch

No. of Rows of Rivets in Back End Circumferential Seams

Are these Seams Hand or Machine Riveted?

Diar. of Rivet Holes

Pitch

Size of Manholes in Shell

Dimensions of Compensating Rings

Same as 9/4 "BARON OG/LVY" (No 841)

B.C. TEST

No 3041

TEST A 365

TEST A 210

Q.M.L.

2/12/27

2 BOILERS -

Thickness of End Plates in Steam Space Approved

in Boilers

Pitch of Steam Space Straps

Diar. of " " Approved

in Boilers

Material of " "

How are Straps Secured?

Diar. and Thickness of Loose Washers on End Plates

Riveted

Double Straps

Thickness of Middle Back End Plates Approved

in Boilers

Thickness of Doublings in Wide Spaces between Fireboxes

Pitch of Straps at

Diar. of Straps Approved

in Boilers

Are Straps fitted with nuts outside?

Thickness of Back End Plates at Bottom Approved

in Boilers

Pitch of Straps at Wide Spaces between Fireboxes

Thickness of Doublings at

Thickness of Front End Plates at Bottom Approved

in Boilers

No. of Longitudinal Straps in Wide Spaces between Fireboxes



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Thickness of End Plates in Steam Space Approved

" " " " " in Boilers

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

Same as $\frac{2}{3}$ "BARON OGILVY" (No 841)

Threads per Inch

Dist. of Stays Approved

" " " " " 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 " " "

Material Dist. of Tubes

Material " " " "

Thickness of Furnace Plates Approved

" " " " " in Boilers

Smallest outside Dist. of Furnaces

Length between Tube Plates

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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.O. Tops

Same as 1/8" BARON 09444 (No 841)

Threads per inch

Diar. of Screwed Stays Approved

" " " in Boilers

Material " "

Thickness of Combustion Chamber Ends Approved

" " " in Boilers

Pitch of Screwed Stays in C.O. Stays

Threads per inch

Diar. " " Approved

" " " in Boilers

Material " "

Thickness of Combustion Chamber Backs Approved

" " " in Boilers

Pitch of Screwed Stays in C.O. Backs

Threads per inch

Diar. " " Approved

" " " in Boilers

Material " "

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

Thickness of Combustion Chamber Bottoms

% of Girders over each Wing Chamber

" " " Centre

Depth and Thickness of Girders

Material of Girders

% of Stays in each

% of Tubes in each

Size of Lower Members



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Diar. 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

Diar. " " Approved Threads per Inch

" " " in Boilers

Material " "

Thickness of Combustion Chamber Backs Approved

" " " " in Boilers

Pitch of Screwed Stays in C.O. Backs

Diar. " " 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

Same as 9/8 " BARON OGILVY" (No 84)

VERTICAL DONKEY BOILERS

No. of Boilers Type

Greatest Int. Diam.

Height

Height of Boiler Crown above Fire Gate

Are Boiler Crowns Flat or Dished?

Internal Radius of Dished Ends Thickness of Plates

Description of Beams in Boiler Crowns

Diam. of Rivet Holes Pitch

Height of Firebox Crown above Fire Gate

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 Bottom

No. of Water Tubes External Diam.

Material of Water Tubes

Size of Manholes in Shell

Dimensions of Compensation 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

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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

Joined, Welded or Seamed

Internal Diar.

Thickness

How are Flanges secured?

Date of Hydraulic Test

Test Pressure

No. of Pipes

Material

Joined, Welded or Seamed

Internal Diar.

Thickness

How are Flanges secured?

Date of Hydraulic Test

Test Pressure

No. of Pipes

Material

Joined, Welded or Seamed

Internal Diar.

Thickness

How are Flanges secured?

Date of Hydraulic Test

Test Pressure



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MAIN STEAM PIPES.

No. of Lengths	2		
Material	Steel		
Brazed, Welded or Seamless	L. W.		
Internal Diam.	4 1/2"		
Thickness	1/4"		
How are Flanges secured?	Screwed		
Date of Hydraulic Test	22/2/28.		
Test Pressure	630		
Are Firebox Crown Fast or Unfast?	None fitted		
External Surface of Firebox Crown			
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			

SUPERHEATERS

SPMUTEVAPORATORS. TSTL

No.	1		
Type	Copper		
Working Pressure	10 lb/sq. in.		
Date of Test of Safety Valves under Steam	10/3/28		
No.	2		
Type	Copper		
Working Pressure	10 lb/sq. in.		
Date of Test of Safety Valves under Steam	10/3/28		
No.	3		
Type	Copper		
Working Pressure	10 lb/sq. in.		
Date of Test of Safety Valves under Steam	10/3/28		
No.	4		
Type	Copper		
Working Pressure	10 lb/sq. in.		
Date of Test of Safety Valves under Steam	10/3/28		
No.	5		
Type	Copper		
Working Pressure	10 lb/sq. in.		
Date of Test of Safety Valves under Steam	10/3/28		
No.	6		
Type	Copper		
Working Pressure	10 lb/sq. in.		
Date of Test of Safety Valves under Steam	10/3/28		
No.	7		
Type	Copper		
Working Pressure	10 lb/sq. in.		
Date of Test of Safety Valves under Steam	10/3/28		
No.	8		
Type	Copper		
Working Pressure	10 lb/sq. in.		
Date of Test of Safety Valves under Steam	10/3/28		
No.	9		
Type	Copper		
Working Pressure	10 lb/sq. in.		
Date of Test of Safety Valves under Steam	10/3/28		
No.	10		
Type	Copper		
Working Pressure	10 lb/sq. in.		
Date of Test of Safety Valves under Steam	10/3/28		

FEED WATER FILTERS

No.	1		
Type	Steel		
Working Pressure	210 lb/sq. in.		
Date of Test	28/11/27		
No.	2		
Type	Steel		
Working Pressure	210 lb/sq. in.		
Date of Test	28/11/27		
No.	3		
Type	Steel		
Working Pressure	210 lb/sq. in.		
Date of Test	28/11/27		
No.	4		
Type	Steel		
Working Pressure	210 lb/sq. in.		
Date of Test	28/11/27		
No.	5		
Type	Steel		
Working Pressure	210 lb/sq. in.		
Date of Test	28/11/27		
No.	6		
Type	Steel		
Working Pressure	210 lb/sq. in.		
Date of Test	28/11/27		
No.	7		
Type	Steel		
Working Pressure	210 lb/sq. in.		
Date of Test	28/11/27		
No.	8		
Type	Steel		
Working Pressure	210 lb/sq. in.		
Date of Test	28/11/27		
No.	9		
Type	Steel		
Working Pressure	210 lb/sq. in.		
Date of Test	28/11/27		
No.	10		
Type	Steel		
Working Pressure	210 lb/sq. in.		
Date of Test	28/11/27		



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OTHER ARTICLES OF SPARE GEAR:—

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REFRIGERATORS.

No. of Machines *2* Capacity of each *2* No. of *Single* Combs *6-1/2*
 Makers *6 crank* *6 crank* *2* *6-1/2*
 Description *12 Stroke* *2* *2* *2*
 No. of Steam Cylinders, each Machine *2* No. of Compressors *2* No. of Cranks *2*
 Particulars of Pumps in connection with Refrigerating Plant and whether worked by Refrigerating Machines
 or Independently *1 set*

Other Articles of Spare Gear
more filled
6 plate bolts nuts etc
6 1/2 inch diam bolts

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.
Machine at Trial	<i>11 1/2</i>	<i>11 1/2</i>	<i>15</i>	<i>15</i>
Capacity	<i>73</i>	<i>73</i>	<i>15</i>	<i>15</i>
Current Absorbing or Continuing	<i>Continued</i>	<i>Continued</i>	<i>Continued</i>	<i>Continued</i>
Single or Double Wire System	<i>Double</i>	<i>Double</i>	<i>Double</i>	<i>Double</i>
Position of Piston	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>
Main Switch Board	<i>on</i>	<i>on</i>	<i>on</i>	<i>on</i>
No. of Cylinders in which Piston is secured on Main Switch Board	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>
Particulars of Spare Gear	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>
Chart	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>
<i>by means</i>	<i>73</i>	<i>73</i>	<i>15</i>	<i>15</i>
<i>Forward</i>	<i>20</i>	<i>30</i>	<i>15</i>	<i>15</i>
<i>Air Pipes</i>	<i>28</i>	<i>30</i>	<i>15</i>	<i>15</i>
<i>officers</i>	<i>1</i>	<i>100</i>	<i>15</i>	<i>15</i>
<i>Wardens</i>	<i>15</i>	<i>30</i>	<i>15</i>	<i>15</i>
<i>Navigation</i>	<i>15</i>	<i>30</i>	<i>15</i>	<i>15</i>
<i>Saloon</i>	<i>15</i>	<i>30</i>	<i>15</i>	<i>15</i>

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



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ELECTRIC LIGHTING.

Installation Fitted by *Selford Brier & Mackay Ltd*
No. and Description of Dynamos *One compound wound protected type*
Makers of Dynamos *Wm. St. Allen & Sons & Co Ltd Bedford*
Capacity *43* Amperes, at *110* Volts, *330* Revols. per Min.
Current Alternating or Continuous *Continuous*
Single or Double Wire System *Double*
Position of Dynamos *Mid platform star'd side aft.*
,, Main Switch Board *on after bulkhead beside 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.
Dynamo			73	19/064	1217	100%	600 m.
Forward	20	30 w	6	7/029	1332	100%	600 m.
Engineers' }	28	30 w	17	7/036	2430	100%	600 m.
Officers }	1	100 w					
Wireless			14	7/036	2000	100%	600 m.
Navigation	14	various	8	7/029	2778	100%	600 m.
Saloon	34	30 w	9	7/029	2000	100%	600 m.
Eng. room }	26	30 w.	10	7/029	2222	100%	600 m.
	3	100 w					

Total No. of Lights 129 No. of Motors driving Fans, &c. — No. of Heaters —

Current required for Motors and Heaters

Positions of Auxiliary Switch Boards, with No. of Switches on each *None*

Installation fitted by
No. and Description of Dynamos
Motors of Dynamos
Capacity
Current Alternating or Continuous
Single or Double Wire System
Location of Dynamos
Main Switch Board
No. of Circuits to which Switches are provided on Main Switch Board

Particulars of these Circuits:—

Circuit	Number of Lights	Current of Amperes	Size of Conductor	Contents of Boxes	Conductivity of Conductor	Insulation
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Are Out-outs fitted as follows?—

On Main Switch Board, to Cables of Main Circuits *Yes*

On Aux. " " each Auxiliary Circuit —

Wherever a Cable is reduced in size *Yes*

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 Cut-outs constructed of Non-inflammable Material? *Yes*

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

Smallest Single Wire used, No. $\frac{1}{18}$ S.W.G., Largest, No. $\frac{1}{18}$ S.W.G.

How are Conductors in Engine and Boiler Spaces protected? *Arm^d + Lead covered.*

" Saloons, State Rooms, &c., " ? *Lead covered.*

What special protection is provided in the following cases?—

(1) Conductors exposed to Heat or Damp *Arm^d*

(2) " " passing through Bunkers or Cargo Spaces *Arm^d + in tubing + wire*

(3) " " Deck Beams or Bulkheads *Reamed holes in beam +*

Are all Joints in Cables properly soldered and thoroughly Insulated so that the efficiency of the Cables is unimpaired? *None*

Have the Machinery and Meters been constructed in accordance with the approved plans? *Yes*

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

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

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? *1.75 megohms.*

Ohms.

Is the Installation supplied with a Voltmeter? *Yes*

" " " an Ampere Meter? *Yes*

Date of Trial of complete Installation *10/3/28* Duration of Trial *6 hours*

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

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

Approved by the Committee for the purpose of the examination?

The above certificate is issued by the Registrar of Lloyd's Register of Shipping, in accordance with the provisions of the Act of 1894, and is valid for the purpose of the examination.

For advice and information, please refer to the Registrar of Lloyd's Register of Shipping.

request
 packed glands in W.T. bulkheads.

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: *Yes.*

Have the Dynamometer, Main and Branch Cables, so placed that the Compressors are only

affected by them? *Yes.*

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

Has the Installation Resistance over the whole system been tested? *Yes.*

What does the Resistance amount to? *175 ohms.*

Is the Installation supplied with a Voltmeter? *Yes.*

Date of Trial of complete Installation *10/8/28*

Have all the requirements of Section 12 been satisfactorily carried out? *Yes.*

Are the following fitted as follows? *Yes.*

On Main Switch Board, to Cables of Main Circuits *Yes.*

On Aux. Switch Board, to Cables of Main Circuits *Yes.*

On Aux. Switch Board, to Cables of Main Circuits *Yes.*

Wherever a Cable is required in air *Yes.*

To each Lamp Circuit *Yes.*

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

trustworthy? *Yes.*

Is the Workmanship throughout thoroughly satisfactory? *Yes.*

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

Smallest Single Wire used, No. *1/8* S.W.G., Largest, No. *1/8* S.W.G.

The above correctly describes the Machinery of the S.S. *"BARDON YARBOROUGH"*

as ascertained by *us* from personal examination *Lead covered.*

What special protection is provided in the following cases?—

(1) Conductors exposed to Heat or Damage *Amid.*

(2) Conductors exposed to Mechanical Damage *Geo. M. Luke.*

(3) Conductors exposed to Corrosive Gases or Liquids *Lead covered.*

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

Fees—

MAIN BOILERS.

	£	s.	d.
H.S.	29	19	0
G.S.			

G.S.			
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DONKEY BOILERS.

H.S.			
------	--	--	--

G.S.			
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ENGINES.

	£	s.	d.
L.P.O.	44	1	0

Testing, &c. ...			
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Expenses ...	74	0	0
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Expenses ...	8	0	0
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Expenses ...	13	0	0
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Total ...	82	13	0
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It is submitted that this Report be approved,

Walter King
Chief Surveyor.

Approved by the Committee for the Class of M.B.S.* on the *12* April 1928

Fees advised

Fees paid



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Less paid

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