

No. 2277

S. 6. 633.

THE BRITISH CORPORATION FOR THE SURVEY

AND

REGISTRY OF SHIPPING.

10/248

N.N. C.D. ANSELL

Report No. *2265* No. in Register Book *3649*

RALPH S. MISNER

S.S.

"Fairlake"

Makers of Engines

Barclay Curle & Co.

Works No.

633

Makers of Main Boilers

do.

Works No.

633

Makers of Donkey Boiler

Works No.

MACHINERY.



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AND
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S.S. "Fairlake"

Makers of Engines Barclay, Curle & Co., Ltd.

Works No. 633

Makers of Main Boilers Same

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Makers of Donkey Boiler —

Works No. —

MACHINERY.



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No.

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. No. in Register Book

Received at Head Office. *11th May 1929.*

Surveyor's Report on the Petrol Engines, Boilers, and Auxiliary
Machinery of the ~~Single Screw~~ **Steamer**

"Fairlake"

Official No.

Port of Registry

Welland, Ont.

Registered Owners

*Fairport Steamship Company,
Limited, Welland, Ontario.*

Engines Built by

Barclay, Curle & Co., Ltd.

at

Scotstoun, Glasgow.

Main Boilers Built by

Same firm,

at

Kelvinhaugh St., Glasgow.

Donkey

at

Date of Completion

9/5/29

First Visit

8/1/29

Last Visit

9/5/29

Total Visits

21

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RECIPROCATING ENGINES.

Works No. **633** No. of Sets **One** Description **Triple expansion vertical surface-condensing steam**

No. of Cylinders each Engine **3** No. of Cranks **3**
 Diars. of Cylinders **15", 25" and 40"** Stroke **33"**
 Cubic feet in ~~one~~ L.P. Cylinder **24**

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

" " each Receiver? **Yes, except H.P.**

Type of H.P. Valves,

~~and~~ I.P. "

~~and~~ L.P.,

L.P. "

" Valve Gear

" Condenser

Diameter of Piston Rods (plain part)

Screwed part (bottom of thread)

Material

Diam. of Connecting Rods (smallest part)

Material

" Crosshead Gudgeons

Length of Bearing

Material

No. of Crosshead Bolts (each)

Diam. over Thrd.

Thrds. per inch

Material

" Crank Pin "

"

"

"

"

" Main Bearings

6

Lengths

" Bolts in each

2

Diam. over Thread

Threads per inch

Material

" Holding Down Bolts, each Engine

61

Diam.

No. of Metal Chocks

61

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

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

If not, how are they fitted?

Tank top

Yes.

Connecting Rods, Forged by

Rotherham Forge & R.M. Co. Ltd.

Piston

"

"

"

"

"

"

Crossheads,

"

Barclay, Curle & Co. Ltd.

Connecting Rods, Finished by

Piston

"

"

"

"

"

"

Crossheads,

"

Date of Harbour Trial

6/5/29

" Trial Trip

9/5/29

Trials run at

Shelburne & Firth of Clyde.

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

Yes, light ship.

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

850

Revs. per min.

96

Pressure in ~~L.P.~~ Receiver,

180

lbs. ~~and~~ I.P.,

72

lbs., L.P.,

10½

lbs., Vacuum, **27** ins.

Speed on Trial

9.207 Knots.

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

data:—

Builders' estimated I.H.P.

Revs. per min.

Estimated Speed

**"For all other particulars,
 see Report on
 S.S. "Sarniadoc".**



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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 Stern	
Are the Propeller Shafts driven direct by the Turbines or through Gearing?				
Is Single or Double Reduction Gear employed?				
Diam. of 1st Reduction Pinion		} Width	Pitch of Teeth	
" 1st "	Wheel			
Estimated Pressure per lineal inch				
Diam. of 2nd Reduction Pinion		} Width	Pitch of Teeth	
" 2nd "	Wheel			
Estimated Pressure per lineal inch				
Revs. per min. of H.P. Turbines at Full Power		S.H.P.		
"	I.P.	"	"	"
"	L.P.	"	"	"
"	1st Reduction Shaft			
"	2nd "			
"	Propeller Shaft			
Total Shaft Horse Power				
Date of Harbour Trial				
" Trial Trip				
Trials run at				
Speed on Trial	Knots. Propeller Revs. per min.		S.H.P.	
Turbine Spindles forged by				
"	Wheels forged or cast by			
Reduction Gear Shafts forged by				
"	Wheels forged or cast by			

TURBO-ELECTRIC INSTALLATION. DESCRIPTION OF INSTALLATION.

No. of Turbo-Generating Sets	Capacity of each	Type of Turbine employed	Description of Generator
Are the Propeller Shafts driven direct by the Motors 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 Motors at Full Power		S.H.P.	
"	I.P.	"	"
"	L.P.	"	"
"	1st Reduction Shaft		
"	2nd "		
"	Propeller Shaft		
Total Shaft Horse Power			
Date of Harbour Trial			
" Trial Trip			
Trials run at			
Speed on Trial	Knots. Propeller Revs. per min.		S.H.P.
Turbine Spindles forged by			
"	Wheels forged or cast by		
Reduction Gear Shafts forged by			
"	Wheels forged or cast by		



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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

Estimated Pressure per lineal inch

Diam. of 2nd Reduction Pinion

" 2nd " Wheel

Estimated Pressure per lineal inch

Revs. per min. of Generators at Full Power

" " Motors "

" " 1st Reduction Shaft

" " 2nd "

" " Propellers at Full Power

Total Shaft Horse Power

Date of Harbour Trial

" Trial Trip

Trials run at

Speed on Trial

Knots. Propeller Revs. per min.

S.H.P.

Makers of Turbines

" Generators

" Motors

" Reduction Gear

Turbine Spindles forged by

" Wheels forged or cast by

Reduction Gear Shafts forged by

" Wheels forged or cast by

DESCRIPTION OF INSTALLATION.

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SHAFTING.

Are the Crank Shafts Built or Solid?

Built

No. of Lengths in each

One

Angle of Cranks

120°

Diar. by Rule

Actual

8 3/8"

In Way of Webs

8 3/8"

" of Crank Pins

8 3/8"

Length between Webs

8 1/4"

Greatest Width of Crank Webs

1' 4 1/4"

Thickness

5 1/4"

Least

" "

1' 0"

"

"

Diar. of Keys in Crank Webs

1 3/4"

Length

3 3/4"

" Dowels in Crank Pins

Length

Screwed or Plain

No. of Bolts each Coupling

6

Diar. at Mid Length

2"

Diar. of Pitch Circle

1' 0 7/8"

Greatest Distance from Edge of Main Bearing to Crank Web

3 1/16"

Type of Thrust Blocks

Horse-shoe

No. " Rings

4

Diar. of Thrust Shafts at bottom of Collars

8 3/8"

No. of Collars

4

" " Forward Coupling

"

At Aft Coupling

8 3/8"

Diar. of Intermediate Shafting by Rule

Actual

No. of Lengths

No. of Bolts, each Coupling

Diar. at Mid Length

Diar. of Pitch Circle

Diar. of Propeller Shafts by Rule

Actual

9"

At Couplings

9 1/8"

Are Propeller Shafts fitted with Continuous Brass Liners?

Yes.

Diar. over Liners

10 3/16"

Length of After Bearings

3' 0"

Of what Material are the After Bearings composed?

Lig. vit. strips.

Are Means provided for lubricating the After Bearings with Oil?

No.

" " to prevent Sea Water entering the Stern Tubes?

"

What Type is adopted?

SKETCH OF CRANK SHAFT.

See Report on
S.S. "Sarniadoc."



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No. of Blades each Propeller 4 Fitted or Solid? Fitted.
 Material of Blades C.I. Boss C.I.
 Diam. of Propellers 12'-3" Pitch 10'-9" Surface (each) 48 S. ft. λ
 Coefficient of Displacement of Vessel at $\frac{1}{2}$ Moulded Depth

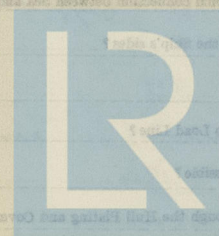
Crank Shafts Forged by	<u>Dennytown Forge</u>	Material	<u>I.S.</u>
" Pins "	" "	"	"
" Webs "	<u>Beardmore & Co.</u>	"	"
Thrust Shafts "	<u>Dennytown Forge.</u>	"	"
Intermed. "	"	"	"
Propeller "	"	"	"
Crank " Finished by	<u>Barclay, Curle & Co.</u>		
Thrust "	"	"	"
Intermed. "	"	"	"
Propeller "	"	"	"

STAMP MARKS ON SHAFTS.

B.C.
 11033
 J.W.H.
 2/4/29

SKETCH OF PROPELLER SHAFT.

See Report on
S.S. "Saraiadoc."



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PUMPS, ETC. OF SHIP

No. of Air Pumps *One* Diar. *1-2"* Stroke *1-5"*

Worked by Main or Independent Engines? *Main.*

No. of Circulating Pumps *One* Diar. *9 1/2" and 12"* Stroke *1-6"*

Type of " *Vert. singlex: (Dawson & Downie)*

Diar. of " Suction from Sea *7"*

Has ~~each~~ Pump a Bilge Suction with Non-return Valve? *Yes.* Diar. *4"*

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

No. of Feed Pumps on Main Engine *2* Diar. *2 1/4"* Stroke *1-5"*

Are Spring-loaded Relief Valves fitted to each Pump? *Yes.*

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

No. of Independent Feed Pumps Diar. Stroke

What other Pumps can feed the Boilers? *Injector & C. S.*

No. of Bilge Pumps on Main Engine *2* Diar. *2 1/2"* Stroke *1-5"*

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.*

Are all Bilge Suctions fitted with Roses? *Yes, except mud boxes &*

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? *"*

Are they placed so as to be easily accessible? *"*

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.*

BOILERS

Works No.

No. of Boilers

Single or Double-ended

No. of Furnaces in each

Type of Furnaces

Date when first approved

Approved Working Pressure

Hydraulic Test Pressure

Date of Hydraulic Test

" when Safety Valves set

Pressure at which Valves were set

Date of Re-amination Test

Maximum Pressure under Re-amination Test

System of Drafting

Can Boilers be worked separately?

Makers of Plates

"

"

"

"

"

"

"

"

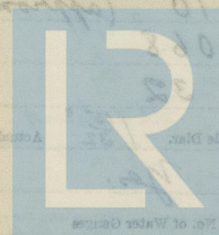
"

"

"

"

straight tail pipes in upper spaces.



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BOILERS

Works No. **633**

No. of Boilers **2** Type **Cyl. multitubular**
Single.

Single or Double-ended

No. of Furnaces in each **2**

Type of Furnaces **Deighton.**

Date when Plan approved **26/11/28**

Approved Working Pressure **180 lb/sq"**

Hydraulic Test Pressure **320 "**

Date of Hydraulic Test **4/4/29**

" when Safety Valves set **6/5/29**

Pressure at which Valves were set **185 lb/sq"**

Date of Accumulation Test **6/5/29**

Maximum Pressure under Accumulation Test **185 lb/sq"**

System of Draught **F.D., c.a., (Howden's)**

Can Boilers be worked separately? **yes.**

Makers of Plates **Jas. Dunlop & Co. Ltd.**
part sublet to J. L. Colville & Sons Ltd.

" Stay Bars **David Colville & Sons.**
Scottish Dr. Sheet Ld.

" Rivets **Rivet, Bolt & Nut Co.**

" Furnaces **John Marshall & Co.**

Greatest Internal Diam. of Boilers **10'-1 3/8"**

" " Length " **10'-10" (approx.)**

Square Feet of Heating Surface each Boiler **1068**

" " Grate " " **32**

No. of Safety Valves each Boiler **2** Rule Diam. **1 15/32"** Actual **1 3/4" H.L.**

Are the Safety Valves fitted with Easing Gear? **yes.**

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

" Test Cocks " **3** " " Salinometer Cocks **1**

B.C. TEST

5146

320 lb.

W.P. 180 "

J.W.H.

4/4/29.



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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?

Pipes

Are these Pipes connected to Boilers by Cocks or Valves?

Cocks.

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

Valves on ends.

No. of Strakes of Shell Plating in each Boiler

One

" Plates in each Strake

"

Thickness of Shell Plates Approved

$\frac{13}{16}$ "

" " in Boilers

"

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

$\frac{5}{8}$ "

" inside "

$\frac{3}{4}$ "

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

$\frac{7}{8}$ "

Pitch

$6\frac{1}{8}$ "

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"

Pitch

3.49"

No. of Rows of Rivets in Back End Circumferential Seams

2

Are these Seams Hand or Machine Riveted?

Machine.

Diar. of Rivet Holes

1"

Pitch

3.49"

Size of Manholes in Shell

16" x 12"

Dimensions of Compensating Rings

3'-2 $\frac{1}{2}$ " x 2'-8 $\frac{1}{2}$ "

Thickness of End Plates in Steam Space Approved

" " " " " " " "

Thickness of Steam Space Straps

Approved " " " " " " " "

" " " " " " " "

Material of " " " " " " " "

How are Straps Secured?

Diar. and Thickness of Loose Washers on End Plates

" " " " " " " "

" " " " " " " "

See Report on

S.S. Sanisador

Thickness of Middle Back End Plates Approved

" " " " " " " "

Thickness of Doublings in Wide Spaces between Pipes

" " " " " " " "

Thickness of Seams Approved

" " " " " " " "

Material of " " " " " " " "

Are Straps fitted with Keys outside?

Thickness of Back End Plates at Bottom Approved

" " " " " " " "

Thickness of Straps at Wide Spaces between Pipes

Thickness of Doublings in " " " " " " " "



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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

Pillars
Pipes
Cocks.

Value on ends.

One

Steel.

Butt

Bonds

2 1/2

3 1/2

4 1/2

Machine

Double

5

6 1/2

2

Hand

3-49"

2

Machine

3-49"

16" x 12"

5-21" x 2-84"

Threads per Inch

Dist. of Stays Approved

" " " " in Boilers

" " " " Material

Thickness of Front Tube Plates Approved

" " " " in Boilers

Pitch of Stay Tubes at Space between Stacks of Tubes

" " " " Thickness of Doublings in

" " " " Stay Tubes at

" " " " Stay Tubes fitted with Nuts at Front End

See Report on
S.S. "Sarniadoc"

Thickness of Back Tube Plates Approved

" " " " in Boilers

Pitch of Stay Tubes in Back Tube Plates

" " " " Stay Tubes

Thickness of Stay Tubes

" " " " Stay Tubes

Recessed Part of Tubes

" " " " Material

Thickness of Front Tube Plates Approved

" " " " in Boilers

Smallest outside Dist. of Furnaces

Length between Tube Plates

Width of Combustion Chamber (Front to Back)

Thickness of Front Tube Plates Approved

" " " " in Boilers

Pitch of Stay Tubes at Space between Stacks of Tubes

" " " " Thickness of Doublings in

" " " " Stay Tubes at



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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 O.C. Tops

Diar. of Screwed Stays Approved

" " " in Boilers

Material "

Thickness of Combustion Chamber Sides Approved

" " " in Boilers

Pitch of Screwed Stays in O.C. Sides

Diar. " " Approved

" " " in Boilers

Material "

Thickness of Combustion Chamber Backs Approved

" " " in Boilers

Pitch of Screwed Stays in O.C. Backs

Diar. " " Approved

" " " in Boilers

Material "

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

Thickness of Combustion Chamber Bottoms

No. of Rivets over each Wing Channel

" " " " " "

Depth and Thickness of Rivets

Material of Rivets

No. of Stays in each

No. of Stays in each

Size of Lower Members

See Report on
S.S. "Szamiodoc."
 S.S. "Szamiodoc."



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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.O. 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.O.?

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

Type

Pressure in lbs. per sq. in.

Height

Height of Boiler Crown above the Grate

Are Upper Crown Flats or Tied?

Internal Radius of Dished Ends

Thickness of Plates

Description of seams in boiler crown

Diam. of Rivet Holes

Height of Ribbed Crown above the Grate

Are Ribbed Crown Flats or Tied?

Thickness of Plates

Internal Radius of Dished Crown

No. of Crown Stays

External Diam. of Ribbed at Top

Bottom

Thickness of Plates

No. of Water Tubes

Diameter of Water Tubes

Dist. of Manholes in Shell

Description of Compensation Piece

Heating surface, each boiler

SUPERHEATERS.

Description of Superheater

When situated?

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See Report on
S.S. "Saraiadoc."

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

Diarr. 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 Diarr. Material

External Diarr. of Firebox at Top Bottom Thickness of Plates

No. of Water Tubes Ext. Diarr. 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

Diarr.

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

Diarr. of Pipes

Thickness of Plates

How are Pipes connected?

Date of Hydraulic Test

Test Pressure

No. of Pipes

Material

Diarr. of Pipes

Thickness of Plates

How are Pipes connected?

Date of Hydraulic Test

Test Pressure



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MAIN STEAM PIPES.

No. of Lengths	2		
Material	Steel		
Brazed, Welded or Seamless	Welded		
Internal Diam.	3½"		
Thickness	¼"		
How are Flanges secured?	Sc'd & cap'd.		
Date of Hydraulic Test	30/4/29		
Test Pressure	540 lb/□"		
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			

LIST OF PUMPS

Balkish	Vert. duplex, 9" x 11" by 10"		
G.S.	" 5" x 3½" x 6"		
Sanitary Horiz.	" 4½" x 2½" x 4"		
F.W.	"		
	FEED WATER HEATERS		
	all by Balkish		
	Working Pressure 22 lb/□"		
	Date of Test 20/4/29		
	FEED WATER FILTERS		
	all by Balkish		
	Working Pressure 180 lb/□"		
	Date of Test 20/4/29		



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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.	One	Type	Exhaust.
Makers	Hocking & Co. Ltd.		
Working Pressure	25 lb/□	Test Pressure	Coils 450 lb/□ Shell 50 "
Date of Test			

FEED WATER FILTERS.

No.	One	Type	High pressure.	Size
Makers	Henry Watson Ltd.			
Working Pressure	180 lb/□	Test Pressure	450 lb/□	Date of Test

LIST OF DONKEY PUMPS.

Ballast Vert. duplex, 9" + 11" by 10".

G. S. " " 5" + 3½" " 6"

Sanitary Horiz. " 4½" + 2¾" " 4"

F. W. " " " " "

all by Dawson & Downie Ltd.



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No. of Top End Bolts.	No. of Bot. End Bolts.	No. of Cylinder Cover Studs
" Coupling Bolts	" Main Bearing Bolts	" Valve Chest "
" Junk Ring Bolts	" Feed Pump Valves	" Bilge Pump Valves
" H.P. Piston Rings	" I.P. Piston Rings	" L.P. Piston Rings
" " Springs	" " Springs	" " Springs
" Safety Valve "	" Fire Bars	" Feed Check Valves
" 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	" Propellers	" Propeller Blades
" Boiler Tubes	" Condenser Tubes	" Condenser Ferrules

OTHER ARTICLES OF SPARE GEAR:—

See Report on
S. S. "Sarniador."

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REFRIGERATORS.

No. of Machines Capacity of each
 Makers
 Description
 No. of Steam Cylinders, each Machine No. of Compressors No. of Cranks
 Particulars of Pumps in connection with Refrigerating Plant and whether worked by Refrigerating Machines or Independently

System of Refrigeration

,, Insulation

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

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

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

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

Date of Test under Working Conditions

RESULTS OF TRIALS.

COMPARTMENT.	Temp. at beginning of Trial.	Temp. at end of Trial.	Time required to obtain this Result.	Rise of Temp. after hours.
Machine's Space	91	78	10	1.2
Condenser	91	78	10	1.2
Evaporator	91	78	10	1.2
Refrigerator	91	78	10	1.2
Brine	91	78	10	1.2
Water	91	78	10	1.2
Oil	91	78	10	1.2
Ammonia	91	78	10	1.2
Freon	91	78	10	1.2
Other	91	78	10	1.2

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



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ELECTRIC LIGHTING

No. of Lamps	Time required to change this lamp	Time to put in new lamp	Time to put in new lamp	CONTAINER
Description				
No. of Lamps				
Particulars of Lamps				
as indicated				

see Report on S.S. "Sarniadoc"

ELECTRIC LIGHTING.

Installation Fitted by

Makers.

No. and Description of Dynamos

One 10 KW. Comp. wound.

Makers of Dynamos

Sunderland F. & E. Co. Ltd.

Capacity

91 Amperes, at 110 Volts, 380 Revols. per Min.

Current Alternating or Continuous

Continuous.

Single or Double Wire System

Double.

Position of Dynamos

Steering eng. platform.

" Main Switch Board

*"**"**"*

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

4.

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.

Total No. of Lights

99

No. of Motors driving Fans, &c.

No. of Heaters

Current required for Motors and Heaters

Peak Rating of Heaters

(2)



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

See Report on S.S. "Sarniadoc."

Are Out-outs fitted as follows?—

On Main Switch Board, to Cables of Main Circuits

On Aux. " " each Auxiliary Circuit

Wherever a Cable is reduced in size

To each Lamp Circuit

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

Are the Fuses of Standard Sizes?

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

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

Smallest Single Wire used, No.

S.W.G., Largest, No.

S.W.G.

How are Conductors in Engine and Boiler Spaces protected?

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

What special protection is provided in the following cases?—

(1) Conductors exposed to Heat or Damp

(2) " " passing through Bunkers or Cargo Spaces

(3) " " Deck Beams or Bulkheads

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? *"*Has the Insulation Resistance over the whole system been tested? *"*What does the Resistance amount to? *Ohms.*Is the Installation supplied with a Voltmeter? *Yes.*" " " an Ampere Meter *"*Date of Trial of complete Installation *9/5/29* Duration of Trial *6 hours.*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.

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Surveyor.

Fees—

MAIN BOILERS.

	Sq. ft.	£	s.	d.
H.S.				
G.S.				

G.S.				
------	--	--	--	--

DONKEY BOILERS.

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

G.S.				
------	--	--	--	--

ENGINES.

	Cub. ft.	£	s.	d.
L.P.O.				

Testing, &c. ...				
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Expenses ...				
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Total ...	£			
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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 26th June 1929

Fees advised

Fees paid

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Secretary.

"Fairlake"

The above correctly describes the Machinery of the S.S.

as ascertained by me from personal examination

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

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8/1/29 G.M.L.

31 "

18/2/29

26 "

1/3/29

4 "

6 "

8 "

G.M.S.

11 "

14 "

18 "

21 "

25 "

27 "

2/4/29

4 "

9 "

19 "

30 "

6/5/29

9 "



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