

No.

THNo. 1896

BRITISH CORPORATION FOR THE SURVEY  
AND  
REGISTRY OF SHIPPING.

Report No.

1542

No. in Register Book

2754

S.S.

BARALT

Makers of Engines

FLEMING & FERGUSON

Works No.

456

Makers of Main Boilers

FLEMING & FERGUSON

Works No.

456

Makers of Donkey Boiler

Works No.

MACHINERY.



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013179-013185-0002

No.

THE BRITISH CORPORATION FOR THE SURVEY

AND

REGISTRY OF SHIPPING.

Report No. 1542 No. in Register Book 2754

Received at Head Office 10<sup>th</sup> Nov 1922

Surveyor's Report on the New Engines, Boilers, and Auxiliary Machinery of the <sup>SINGLE</sup> Screw <sup>STEAMER</sup>.

BARALT.

Official No. UNKNOWN Port of Registry CURACAO

Registered Owners West Indische Scheepvaart Maatschappij

Engines Built by FLEMING & FERGUSON

at PAISLEY.

Main Boilers Built by FLEMING & FERGUSON.

at PAISLEY.

Donkey

at

Date of Completion

25-11-21

First Visit

14/4/21

Last Visit

25-11-21

Total Visits

15

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## RECIPROCATING ENGINES.

Works No. 456

No. of Sets 1

Description

Triple Expansion

Deep Surface Condensing

No. of Cylinders each Engine

3

No. of Cranks

3

Diars. of Cylinders

15 - 25 - 40

Stroke

27

Cubic feet in each L.P. Cylinder

26

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

Yes

" " " each Receiver?

Yes

Type of H.P. Valves,

Piston Valve.

" 1st L.P. "

Double Ported Slide Valve

" 2nd L.P. "

" L.P. "

Double ported Slide Valve

" Valve Gear

Open.

" Condenser

Cylindrical No Flow.

Cooling Surface

850

sq. ft.

Diameter of Piston Rods (plain part)

4"

Screwed part (bottom of thread)

2 7/8

Material

Ingot Steel

Diar. of Connecting Rods (smallest part)

2 3/8"

Material

Ingot Steel

" Crosshead Gudgeons

4 1/2

Length of Bearing

6 1/2

Material

Hard Steel

No. of Crosshead Bolts (each)

2

Diar. over Thrd.

2 1/4

Thrds. per inch

4

Material

Steel

" Crank Pin

2

" 2 1/4

4

Material

Steel

" Main Bearings

6

Lengths

8"

" Bolts in each

2

Diar. over Thread

2

Threads per inch

4 1/2

Material

Steel

" Holding Down Bolts, each Engine

36

Diar.

1 1/8

No. of Metal Chocks

14.

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

Built Seat.

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

If not, how are they fitted?

Bolts Fitted Through Girders

Connecting Rods, Forged by

Fleming &amp; Ferguson Paisley

Piston

"

"

Crossheads,

Connecting Rods, Finished by

Piston

"

Crossheads,

Date of Harbour Trial

23-11-21

" Trial Trip

25-11-21

Trials run at

Forfar Coast.

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

Yes.

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

724.5

Revs. per min.

123.

Pressure in 1st L.P. Receiver,

170

lbs., 2nd L.P.,

59

lbs., L.P.,

20

lbs., Vacuum,

25

Speed on Trial

11.19

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

Engines made under R  
Shoover.

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## TURBINE ENGINES.

Works No.	Type of Turbines	No. of H.P. Turbines	No. of L.P.	No. of L.P.	No. of Astern

Are the Propeller Shafts driven direct by the Turbines or through Gearing?

Is Single or Double Reduction Gear employed?

Diar. 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

Revol. per min. of H.P. Turbines at Full Power	S.H.P.
100	100
150	150
200	200
250	250
300	300
350	350
400	400
450	450
500	500
550	550
600	600
650	650
700	700
750	750
800	800
850	850
900	900
950	950
1000	1000

" " 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 Revols. per min.	S.H.P.
----------------	--------	----------------------------	--------

Turbine Spindles forged by

.. Wheels forged or cast by

Reduction Gear Shafts forged by

Wheels forged or cast by

DESCRIPTION OF INSTALLATION.

1990

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## TURBO-ELECTRIC PROPELLING MACHINERY.

No. of Turbo-Generating Sets Capacity of each

Type of Turbines employed

Description of Generators

No. of Motors driving Propeller Shafting

Are the Propeller Shafts driven direct by the Motors or through Gearing?

Is Single or Double Reduction Gear employed?

Description of Motors

Diam. of 1st Reduction Pinion	}	Width	Pitch of Teeth
" 1st " Wheel			

Estimated Pressure per lineal inch

Diam. of 2nd Reduction Pinion	}	Width	Pitch of Teeth
" 2nd " Wheel			

Estimated Pressure per lineal inch

Revs. per min. of Generators at Full Power

" Motors "
" " 1st Reduction Shaft
" " 2nd "
" " Propellers at Full Power

Total Shaft Horse Power

Date of Harbour Trial

" Trial Trip

Trials run at

Speed on Trial Knots. Propeller Revs. per min. S.H.P.

Makers of Turbines

" Generators

" Motors

" Reduction Gear

Turbine Spindles forged by

" Wheels forged or cast by

Reduction Gear Shafts forged by

" Wheels forged or cast by

## DESCRIPTION OF INSTALLATION.

Handwritten notes and diagrams on page 7, including a sketch of a crankshaft and various measurements and descriptions of the installation.

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No. of Blades each Propeller

4

Fitted or Solid?

Solid

Material of Blades

Cast Iron

Boss

Cast Iron

Diam. of Propellers

10'-0"

Pitch

9'-9"

Surface (each)

.34

S. ft.

10.5

Coefficient of Displacement of Vessel at  $\frac{1}{2}$  Moulded Depth

Crank Shafts Forged by

Heming &amp; Ferguson

Material

Ingot Steel

Pins

Webs

Thrust Shafts

Intermed.,

Propeller

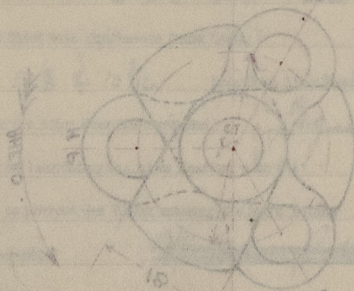
Crank Finished by

Thrust

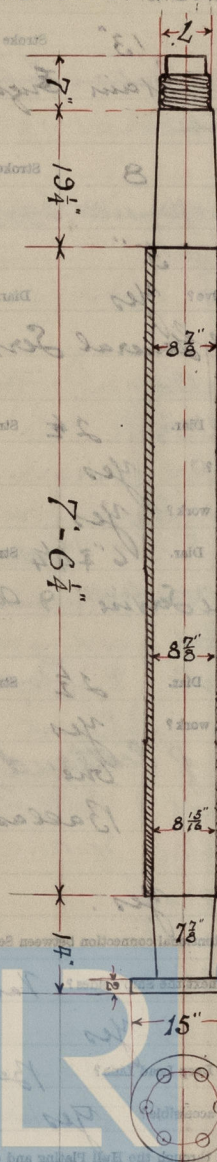
Intermed.,

Propeller

STAMP MARKS ON SHAFTS.



## SKETCH OF PROPELLER SHAFT.



## PUMPS, ETC. OF SHIPS

No. of Air Pumps *One* Diar. *13"* Stroke *14"*

Worked by Main or Independent Engines?

*Main Engines*

No. of Circulating Pumps *One* Diar. *8* Stroke *14"*

Type of "

Diar. of " Suction from Sea

*5"*

Has each Pump a Bilge Suction with Non-return Valve?

*Yes*

Diar. *2 1/4"*

What other Pumps can circulate through Condenser?

*General Service Pump.*

No. of Feed Pumps on Main Engine *2* Diar. *2 1/2* Stroke *14*

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. *6" 7 1/4"* Stroke *6"*

What other Pumps can feed the Boilers?

*General Service & Aux Feed Pumps.*

No. of Bilge Pumps on Main Engine *2* Diar. *2 1/2* Stroke *14*

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

*Yes*

No. of Independent Bilge Pumps

*One*

What other Pumps can draw from the Bilges?

*Ballast Pump.*

Are all Bilge Suctions fitted with Roses?

*Yes.*

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

*Yes*

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

*Valves & Cocks.*

Are they placed so as to be easily accessible?

*Yes*

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

*Below*

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

*Yes*

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

on the Outside?

*Yes.*

## BOILERS

Works No. *434*

No. of Boilers *2*

Boilers or Double Boilers?

No. of Tubes in each

Type of Tubes

Date when last repaired

Approved Working Pressure

Hydraulic Test Pressure

Date of Hydraulic Test

When Safety Valves set

Pressure at which Valves were set

Date of Examination Test

Maximum Pressure under Examination

System of Drafting

Can Boilers be worked separately?

Boilers of Plate

Stay Bolt

Hydro

Pressure

General Internal Dia. of Boilers

Length

Separate Test of Fluehead & Tubes

Date

Boiler Dia.

Are the Safety Valves fitted with Hand Gears

No. of Working Pressure

Test Cocks



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## BOILERS.

Works No. **456**

No. of Boilers **2** Type **Scotch Return Tube**

Single or Double-ended **Single**

No. of Furnaces in each **Two**

Type of Furnaces **Deighton Suspension Bull.**

Date when Plan approved **14-3-21**

Approved Working Pressure **180**

Hydraulic Test Pressure **360**

Date of Hydraulic Test **1920. (See Flaming & Ferguson)**

" when Safety Valves set **23-11-21**

Pressure at which Valves were set **180**

Date of Accumulation Test **25-11-21**

Maximum Pressure under Accumulation Test **5 lbs Rise**

System of Draught **Howdells**

Can Boilers be worked separately? **Yes**

Makers of Plates **Stewarts & Lloyds.**

" Stay Bars **The Steel Co of Scotland Newton.**

" Rivets **Rivet Bolt & Nut Company.**

" Furnaces **Deighton Section.**

Greatest Internal Diam. of Boilers **9'-4 $\frac{7}{8}$ "**

" " Length " **10'-9 $\frac{7}{8}$ "**

Square Feet of Heating Surface each Boiler **910**

" " Grate " " **27 $\frac{1}{2}$**

No. of Safety Valves each Boiler **2** Rule Diam. **2.1** Actual **2 $\frac{1}{4}$**

Are the Safety Valves fitted with Easing Gear? **No (Oil Burning)**

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

" Test Cocks " " " " **1**

**Miss Wallaseid Howden**

**System of Oil Burning**

**Convertible to Coal**

**Tested by Lloyd's**

**No 15225**

**LLOYD'S TEST**

**TEST PRESSURE 360 lbs/sq**

**WORKING " 180 "**

**(stamped) D.C.B.**

**DATE OF TEST 14/4/20**

**Boilers made under**

**Howden**



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Are the Water Gauges fitted direct to the Boiler Shells or mounted on Pillars? *Direct to B.C. Shell*

Are the Water Gauge Pillars fitted direct to the Boiler Shells or connected by Pipes? *Direct*

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

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

No. of Strakes of Shell Plating in each Boiler *2*

Plates in each Strake *2*

Thickness of Shell Plates Approved *45"*  
*32"*

" " in Boilers *45"*  
*32"*

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 *5"*  
*5"*  
*3"*  
*4"*

" " inside " *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 *13"* Pitch *5 3/4"*

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

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 *7/8"* Pitch *3"*

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

Are these Seams Hand or Machine Riveted? *Machine*

Diar. of Rivet Holes *4"* Pitch *3*

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

Dimensions of Compensating Rings *2'-11 1/4" x 2'-7 1/4"*



Thickness of End Plates in Steam Space Approved

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

" " " " in Boilers

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

Pitch of Steam Space Stays

 $17\frac{1}{4} \times 15\frac{3}{4}$ "

Diar. " " " Approved

 $2\frac{3}{4}$ "

Threads per Inch

6

" " " " in Boilers

 $2\frac{3}{4}$ "

6

Material of " " "

Steel

How are Stays Secured?

Double nuts &amp; Washers

Diar. and Thickness of Loose Washers on End Plates

 $6" \times \frac{1}{4}"$ 

" " Riveted

✓

Width " " Doubling Strips

✓

Thickness of Middle Back End Plates Approved

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

" " " " in Boilers

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

Thickness of Doublings in Wide Spaces between Fireboxes

None

Pitch of Stays at

 $10\frac{1}{4} \times 9\frac{1}{2}$ "

Diar. of Stays Approved

 $2\frac{7}{8}$ "

Threads per Inch

9

" " in Boilers

 $2\frac{1}{8}$ "

9

Material " "

Steel

Are Stays fitted with Nuts outside?

Yes

Thickness of Back End Plates at Bottom Approved

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

" " " " in Boilers

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

Pitch of Stays at Wide Spaces between Fireboxes

 $10\frac{1}{4} \times 9\frac{1}{2}$ "

Thickness of Doublings in

None

Thickness of Front End Plates at Bottom Approved

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

" " " " in Boilers

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

No. of Longitudinal Stays in Spaces between Furnaces

None

P.

Threads per Inch

Plan of Stays Approved

P.

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 Diam. of Tubes

Material

Thickness of Furnace Plates Approved

in Boilers

Thickness outside Plan of Furnaces

Length between Tube Plates

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Diar. of Stays Approved  $1\frac{3}{8}"$  Threads per Inch 9

" " in Boilers  $1\frac{3}{8}"$  9

Material " Steel

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

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

Pitch of Stay Tubes at Spaces between Stacks of Tubes  $10\frac{1}{4}" \times 3\frac{1}{2}"$

Thickness of Doublings in " " " None.

" Stay Tubes at " " "  $\frac{5}{16}"$  Swelled to For End

Are Stay Tubes fitted with Nuts at Front End? No.

Thickness of Back Tube Plates Approved  $3\frac{3}{4}"$

" " " in Boilers  $3\frac{3}{4}"$

Pitch of Stay Tubes in Back Tube Plates  $7 \times 7$  &  $10\frac{1}{4} \times 3\frac{1}{2}"$

" Plain "  $3\frac{1}{2} \times 3\frac{1}{2}"$

Thickness of Stay Tubes  $\frac{5}{16}"$

" Plain " 8 W.G.

External Diar. of Tubes  $2\frac{1}{2}"$

Material " L.W. Iron.

Thickness of Furnace Plates Approved  $\frac{15}{32}"$

" " " in Boilers  $\frac{15}{32}"$

Smallest outside Diar. of Furnaces  $3'-0\frac{3}{8}"$

Length between Tube Plates  $7'-5\frac{15}{16}"$

Width of Combustion Chambers (Front to Back)  $2'-8"$

Thickness of " " Tops Approved  $\frac{11}{16}"$

" " " in Boilers  $\frac{11}{16}"$

Pitch of Screwed Stays in C.O. Tops  $12\frac{3}{4} \times 9$

Diar. of Screwed Stays Approved  $2\frac{3}{8}"$  Threads per Inch 9

" " " in Boilers  $2\frac{3}{8}"$  9

Material " Steel

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

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

Pitch of Screwed Stays in C.O. Sides  $10\frac{1}{4} \times 3\frac{1}{2}"$

Thickness of Doublings in " " " None.

" Stay Tubes at " " "  $\frac{5}{16}"$  Swelled to For End

Are Stay Tubes fitted with Nuts at Front End? No.

Thickness of Back Tube Plates Approved  $3\frac{3}{4}"$

" " " in Boilers  $3\frac{3}{4}"$

Pitch of Stay Tubes in Back Tube Plates  $7 \times 7$  &  $10\frac{1}{4} \times 3\frac{1}{2}"$

" Plain "  $3\frac{1}{2} \times 3\frac{1}{2}"$

Thickness of Stay Tubes  $\frac{5}{16}"$

" Plain " 8 W.G.

External Diar. of Tubes  $2\frac{1}{2}"$

Material " L.W. Iron.

Thickness of Furnace Plates Approved  $\frac{15}{32}"$

" " " in Boilers  $\frac{15}{32}"$

Smallest outside Diar. of Furnaces  $3'-0\frac{3}{8}"$

Length between Tube Plates  $7'-5\frac{15}{16}"$

Width of Combustion Chambers (Front to Back)  $2'-8"$

Thickness of " " Tops Approved  $\frac{11}{16}"$

" " " in Boilers  $\frac{11}{16}"$

Pitch of Screwed Stays in C.O. Tops  $12\frac{3}{4} \times 9$

Diam. of Screwed Stays Approved  $2\frac{3}{8}$ " Threads per Inch 9  
 " " " in Boilers  $2\frac{3}{8}$ " 9  
 Material " " Steel

Thickness of Combustion Chamber Sides Approved  $\frac{11}{16}$ "  
 " " " in Boilers  $\frac{11}{16}$ "  
 Pitch of Screwed Stays in C.O. Sides  $9" \times 9\frac{1}{4}"$   
 Diam. " " Approved  $1\frac{3}{4}"$  Threads per Inch 9  
 " " " in Boilers  $1\frac{3}{4}"$  9  
 Material " " Steel

Thickness of Combustion Chamber Backs Approved  $\frac{11}{16}$ "  
 " " " in Boilers  $\frac{11}{16}$ "  
 Pitch of Screwed Stays in C.O. Backs  $9" \times 9\frac{1}{2}"$   
 Diam. " " Approved  $1\frac{3}{4}"$  Threads per Inch 9  
 " " " in Boilers  $1\frac{3}{4}"$  9  
 Material " " Steel

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

Thickness of Combustion Chamber Bottoms  $\frac{3}{4}"$

No. of Girders over each Wing Chamber 3

" " " Centre " None

Depth and Thickness of Girders  $9\frac{1}{2}" \times (\frac{5}{8}" \times 2)$

Material of Girders Steel

No. of Stays in each 2

No. of Tubes, each Boiler 146

Size of Lower Manholes  $16" \times 12"$

## VERTICAL DONKEY BOILERS

No. of Boilers  
 Type  
 Greatest Int. Diam.  
 Height of Boilers above Fire Grate  
 Are Boilers Crowned Flat or Dished?  
 Internal Radius of Dished Ends  
 Description of Beams in Boiler Crown  
 Diam. of Hivet Holes  
 Height of Firebox Crown above Fire Grate  
 Are Firebox Crown Flat or Dished?  
 Internal Radius of Dished Crown  
 Thickness of Plates  
 Material  
 Diam.  
 No. of Crown Stays  
 External Diam. of Firebox at Top  
 Thickness of Plates  
 No. of Water Tubes  
 Height of Water Tubes  
 Material of Water Tubes  
 Size of Manhole in Shell  
 Dimensions of Compensating Ring  
 Heating Surface, each Boiler  
 (Gross Surface)

## SUPERHEATERS



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## VERTICAL DONKEY BOILERS.

No. of Boilers	Type		
Greatest Int. Diar.	Height		
Height of Boiler Crown above Fire Grate			
Are Boiler Crowns Flat or Dished?			
Internal Radius of Dished Ends	Thickness of Plates		
Description of Seams in Boiler Crowns			
Diar. of Rivet Holes	Pitch	Width of Overlap	
Height of Firebox Crowns above Fire Grate			
Are Firebox Crowns Flat or Dished?			
External Radius of Dished Crowns	Thickness of Plates		
No. of Crown Stays	Diar.	Material	
External Diar. of Firebox at Top	Bottom	Thickness of Plates	
No. of Water Tubes	Ext. Diar.	Thickness	
Material of Water Tubes			
Size of Manhole in Shell			
Dimensions of Compensating Ring			
Heating Surface, each Boiler	Grate Surface		

## SUPERHEATERS.

Description of Superheaters	
Where situated?	
Which Boilers are connected to Superheaters?	
Can Superheaters be shut off while Boilers are working?	
No. of Safety Valves on each Superheater	Diar.
Are " " fitted with Easing Gear?	
Date of Hydraulic Test	Test Pressure
Date when Safety Valves set	Pressure on Valves

## MAIN STEAM PIPES.

No. of Pipes		
Material		
Branch, Welded or Seamless		
Internal Diar.		
Thickness		
How are Flanges secured?		
Date of Hydraulic Test		
Test Pressure		



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## MAIN STEAM PIPES.

No. of Lengths	2 PORT	2 STAR <sup>P</sup>
Material	STEEL	STEEL
Brazed, Welded or Seamless	L.W.S.	L.W.S.
Internal Diar.	3 1/2	3 1/2"
Thickness	5 W.G.	5 W.G.
How are Flanges secured?	SCREWED &	EXPANDED
Date of Hydraulic Test	30/9/21	30/9/21
Test Pressure	540 LBS.	540 LBS.

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

## SUPERHEATERS

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

## FEED WATER HEATERS

No.	
Material	
Working Pressure	
Date of Test	

## FEED WATER FILTERS

No.	
Material	
Working Pressure	
Date of Test	



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## EVAPORATORS.

No. 4124 Type *Steam Coil* Tons per Day *15*  
 Makers *Burnmeister & Wain* *Kopenhagen.*  
 Working Pressure *25 lbs.* Test Pressure *-* Date of Test *-*  
 Date of Test of Safety Valves under Steam *25/11/21*

## FEED WATER HEATERS.

No. 1 Type *Compartment Feed with air Extractor*  
 Makers *Andrew Kirkcaldy & Co*  
 Working Pressure *-* Test Pressure *-* Date of Test *-*

## FEED WATER FILTERS.

No. *-* Type *Gravitation* Size *4'-6" x 3"*  
 Makers *The Foster Construction Company*  
 Working Pressure *atmospheric* Test Pressure *-* Date of Test *-*

LIST OF DONKEY PUMPS. *Size*

*Ballast Pump Simplex Dawson & Davis 7' x 8' x 12'*  
*General Service Pump Duplex Carruthers 7' x 3' x 6'*  
*Aux Feed Pump Duplex Dawson & Davis 6' x 4' x 6'*  
*Oil Transfer Pump 21. WallSEND Howden.*  
*Howden Fan Engine.*  
*2 Oil Burning units*



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## SPARE GEAR.

No. of Top End Bolts.	2	No. of Bot. End Bolts.	2	No. of Cylinder Cover Studs	
" Coupling Bolts	1 Set	" Main Bearing Bolts	2	" Valve Chest "	
" Junk Ring Bolts		" Feed Pump Valves	1 Set	" Bilge Pump Valves	1 Set
" H.P. Piston Rings	1 Set	" I.P. Piston Rings	1 Set	" L.P. Piston Rings	1 Set
" " Springs	1 Set	" " Springs	1 Set	" " Springs	1 Set
" Safety Valve "	2	" Fire Bars	1 1/2 Set	" Feed Check Valves	1 Set
" Piston Rods		" Connecting Rods		" Valve Spindles	1
" Air Pump Rods	1	" Air Pump Buckets		" Air Pump Valves	1 Set
" Cir. "	1	" Cir. "		" Cir. "	1 Set
" Crank Shafts	-	" Crank Pin Bushes	1 Set	" Crosshead Bushes	1 Set
" Propeller Shafts	1	" Propellers		" Propeller Blades	
" Boiler Tubes	3	" Condenser Tubes	12	" Condenser Ferrules	24

OTHER ARTICLES OF SPARE GEAR:—

- 1 A.H. Eccentric Rod with Brasses & Bolts.
- 1 " " Strap with Bolts.
- 1 Valve Gear Quadrant Block.
- 1 Spring for each escape Valve fitted
- 1 Feed Pump Plunger.
- 2 Feed Check Valve Spindles
- 2 " " Shut off Spindles
- 1 Set Thermometer (Oil Fuel Installation)
- 4 Burner Bodies
- 4 " Caps.
- 12 " Nozzles.
- 12 " Diaphragms.
- 1 Air Heater Burner.
- 1 Set Fire Brick Qualls.
- 1 Complete Set Water Valves & Piston Rings for Air Feed Pump.

- 1 Complete Set of Water Valves & Piston Rings for Dry Pump.
- 1 " " " " " for Ballast Pump.
- 1 - 1/2 Set of Valves for Oil Fuel Transfer Pump.
- Dynamometer Spares.
- One Piston Valve.
- One " Rod.
- 2 Sets of Piston Rings
- 1 Pair each Crank Pin & Crosshead Brasses.



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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

Crank Shafts

Crank Pin Shafts

Crankshaft Nuts

Propeller Shafts

Propellers

Propeller Nuts

Rocker Tubes

Crankshaft Tubes

Crankshaft Nuts

OTHER ARTICLES OF SPARE GEAR

1 A.H. Gear-case Rock with Brasses &amp; Bolts

1 " " Strap with Bolts

1 Valve Gear Quadrant Blocks

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, &amp;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.
Machinery	73	75	10 min	2.500
Cabin	73	75	10 min	2.500
Hold	73	75	10 min	2.500
Saloon	73	75	10 min	2.500
Wardroom	73	75	10 min	2.500
Galley	73	75	10 min	2.500
Navigation	73	75	10 min	2.500
Hold	73	75	10 min	2.500

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



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## RESULTS OF TRIALS

Time of trial after hours	Time required to obtain this result	Temp. at and in this trial	Temp. at beginning of trial	Temp. at end of trial	COMMENTS
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## ELECTRIC LIGHTING.

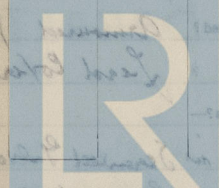
Installation Fitted by *The Coaster Construction Company Ltd.*  
 No. and Description of Dynamos *One Compound Methyl Alcohol*  
 Makers of Dynamos *Crompton & Company.*  
 Capacity *73* Amperes, at *110* Volts. *500* Revols. per Min.  
 Current Alternating or Continuous *Continuous*  
 Single or Double Wire System *Double.*  
 Position of Dynamos *Engine Room Star Side.*  
 " Main Switch Board " " " "  
 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.
<i>Saloon</i>	<i>30</i>	<i>30</i>	<i>9</i>	<i>7/20</i>			<i>2,500 P.S.</i>
<i>Wireless</i>				<i>7/18</i>			"
<i>Cabins</i>	<i>22</i>	<i>30</i>	<i>6.6</i>	<i>7/18</i>			"
<i>Navigation</i>	<i>5</i>	<i>32</i>	<i>5</i>	<i>7/8</i>			"
<i>Hold</i>	<i>31</i>	<i>30</i>	<i>20.5</i>	<i>7/18</i>			"
	<i>2</i>	<i>32</i>					"
<i>Engine Room</i>	<i>16</i>	<i>30</i>	<i>8.8</i>	<i>7/18</i>			"
	<i>3</i>	<i>200</i>					"

Total No. of Lights *116* No. of Motors driving Fans, &c. No. of Heaters

Current required for Motors and Heaters

*1 1/2 To 3 hrs. less.*  
*across 11. 1892*



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

Saloon on Stairs leading to Provision Store  
 4 Crew Space, 4 Plug in Wireless.  
 6 Messroom. Hold Engine Room Top 6.  
 Engine Room Store up.

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. 17 S.W.G., Largest, No. S.W.G.

How are Conductors in Engine and Boiler Spaces protected?

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

What special protection is provided in the following cases?—

- (1) Conductors exposed to Heat or Damp Run in Scrawled Galvanized Conduit
- (2) " " passing through Bunkers or Cargo Spaces Galvanized Lining
- (3) " " Deck Beams or Bulkheads Fitted with Lead Linings

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

is unimpaired? Yes

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

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? from 1.5 To 3 Megohms

Is the Installation supplied with a Voltmeter? Yes.

" " " an Ampere Meter? Yes.

Date of Trial of complete Installation 25/11/21

Duration of Trial 6 hours.

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

It is submitted that this Report be approved

has been approved by the Committee of the Institution of Electrical Engineers

Approved by the Committee of the Institution of Electrical Engineers



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## GENERAL CONSTRUCTION.

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

Approved Plans? *Yes*

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

Surveyor.

Are the Dynamometer Main and Branch Cables, as placed, placed in the Compartment

affected by them?

Have Tests been made to prove that this condition has been satisfactorily satisfied?

Has the Installation Resistance over the whole system been tested?

What does the Resistance amount to?

Is the Installation supplied with a Voltmeter?

Are Ampere Meters

Date of Trial of complete Installation

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

Are the Rules as follows?

On Main Switch Board, in Cases of Main Circuits

On Main

and Auxiliary Circuits

Whenever a Cable is reduced in size

Each Lamp Circuit

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 as to be always and easily accessible?

Smallest Single Wire used, No. 17

S.W.G.

S.W.G.

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

as ascertained by <sup>us</sup> <sub>me</sub> from personal examination

BARALT.

*Thos Laurie*

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

## Fees—

## MAIN BOILERS.

£ s. d.

H.S. Sq. ft. : :

G.S. " : :

## DONKEY BOILERS.

H.S. Sq. ft. : :

G.S. " : :

£ : :

## ENGINES,

L.P.C. Cub. ft. : :

£ : :

Testing, &c. ... : :

£ : :

Expenses ... : :

Total ... £ : :

It is submitted that this Report be approved.

*Chief Surveyor.*

Approved by the Committee for the Class of M.B.S.\* on the

1922

15<sup>th</sup> March

Fees advised

Fees paid



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Secretary.

## GENERAL CONSTRUCTION

Total

MAIN HOUSE

Sd. H.

H.R.

DOCKERY HOUSE

Sd. H.

H.R.

O.S.

BRICKS

Sd. H.

L.F.O.

Testing fee

Expenses

Total

It is submitted that this Report be approved.

This Report was prepared by the Committee for the Class of M.B.S. on the basis of the information furnished to them by the various members of the Class.

Approved by the Committee for the Class of M.B.S. on the basis of the information furnished to them by the various members of the Class.

BARALT

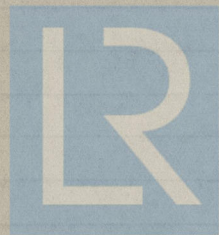
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