

No. 2164

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. 2041 No. in Register Book 3381

S.S. "CASCO"

Makers of Engines *Carew S.B. & Eng. Co., Ltd.*

Works No. 670

Makers of Main Boilers *Carew S.B. & Eng. Co., Ltd.*

Works No. 670

Makers of Donkey Boiler *None.*

Works No. ✓

MACHINERY



Lloyd's Register
Foundation

014110 - 014123 - 0060

No.

THE BRITISH CORPORATION FOR THE SURVEY

AND

REGISTRY OF SHIPPING.

Report No. No. in Register Book

Received at Head Office

5th August 1927

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

Official No. 160046 Port of Registry Hull.

Registered Owners Canada Starch Co., Ltd.

Engines Built by Charles Shipbuilding & Eng. Co.

at Hull.

Main Boilers Built by Charles S.B. & Eng. Co., Ltd.

at Hull.

Donkey " " None.

at

Date of Completion TRIALS CARRIED OUT. 1.6.27

First Visit 14.2.27 Last Visit 1.6.27 Total Visits 23.

RECIPROCATING ENGINES.

Works No. 670

No. of Sets 1

Description

Triple expansion Surface Condensing

No. of Cylinders each Engine

3

No. of Cranks

3

Diars. of Cylinders

17" x 28" x 46"

Stroke 33

Cubic feet in each L.P. Cylinder

31.8

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

yes

" " " each Receiver?

yes

Type of H.P. Valves,

Piston

" 1st I.P. "

Double ported Valve.

" 2nd I.P. "

" L.P. "

Double Ported Slide Valve.

" Valve Gear

Stephenson's

" Condenser

Surface

Cooling Surface 950 sq. ft.

Diameter of Piston Rods (plain part)

4 7/8"

Screwed part (bottom of thread)

3 9/16"

Material

" Forged Steel

Diar. of Connecting Rods (smallest part)

4 1/2"

Material

Forged Steel

" Crosshead Gudgeons 5 1/2" Length of Bearing

7 1/2"

Material

Mild Steel

No. of Crosshead Bolts (each)

2

Diar. over Thrd.

2 5/8"

Thrds. per inch

6

Material Mild Steel

" Crank Pin "

2

2 5/8"

6

" Main Bearings

9 1/4"

Lengths 9 1/2"

" Bolts in each

2

Diar. over Thread

2 1/4"

Threads per inch

6

Material Mild Steel

" Holding Down Bolts, each Engine

56

Diar.

1 1/4"

No. of Metal Chocks

51

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

Tank Top.

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

yes

If not, how are they fitted?

Connecting Rods, Forged by

Rotherham Forge.

Piston

"

"

Rotherham Forge.

Crossheads,

Charles S.B.C.

Connecting Rods, Finished by

Charles S.B.C.

Piston

"

"

Charles S.B.C.

Crossheads,

Charles S.B.C.

Date of Harbour Trial

24.5.27.

" Trial Trip

1.6.27.

Trials run at

Sunk Island on Humber.

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

yes.

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

943

Revs. per min.

90.5.

Pressure in 1st I.P. Receiver,

63 lbs., 2nd I.P.,

lbs., L.P.,

102 lbs., Vacuum 26 ins.

Speed on Trial

9.4 knots.

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

data:—

Builders' estimated L.H.P.

Revs. per min.

Estimated Speed

H.P. Cylinder water tested to 270 lbs 18/3/27.



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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 Astern _____

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 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.

No. of Turbo-Generating Sets _____ Capacity of each _____

Type of Turbines employed _____

Description of Generators _____

No. of Motors driving Propeller Shafts _____

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

Is Single or Double Reduction Gear employed? _____

Description of Motors _____

Diam. of 1st Reduction Pinion _____ } Width _____
 " 1st " Wheel _____

Estimated Pressure per lineal inch _____

Diam. of 2nd Reduction Pinion _____ } Width _____
 " 2nd " Wheel _____

Estimated Pressure per lineal inch _____

Revs. per min. of Generators at Full Power _____

" " Motors _____

" " 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 _____



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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 Gear

Turbine Spindles forged by

" Wheels forged or cast by

Reduction Gear Shafts forged by

" Wheels forged or cast by

DESCRIPTION OF INSTALLATION.

No. of Engines

Diam. of Pinion

As Coupled

Actual

Length of After Bearing

No. of Bearings

Diam. of Pinion

As Coupled

Actual

Length of After Bearing

No. of Bearings

Diam. of Pinion

As Coupled

Actual

Length of After Bearing

No. of Bearings

Diam. of Pinion

As Coupled

Actual

Length of After Bearing

No. of Bearings

Diam. of Pinion

As Coupled

Actual

Length of After Bearing

No. of Bearings

Diam. of Pinion

As Coupled

Actual

Length of After Bearing

No. of Bearings

Diam. of Pinion

As Coupled

Actual

Length of After Bearing

No. of Bearings

Diam. of Pinion

As Coupled

Actual

Length of After Bearing

No. of Bearings

Diam. of Pinion

As Coupled

Actual

Length of After Bearing

No. of Bearings

Diam. of Pinion

As Coupled

Actual

Length of After Bearing

No. of Bearings

Diam. of Pinion

As Coupled

Actual

Length of After Bearing

No. of Bearings

Diam. of Pinion

As Coupled

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Length of After Bearing

No. of Bearings

Diam. of Pinion

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Length of After Bearing

No. of Bearings

Diam. of Pinion

As Coupled

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Length of After Bearing

No. of Bearings

Diam. of Pinion

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Length of After Bearing

No. of Bearings

Diam. of Pinion

As Coupled

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Length of After Bearing

No. of Bearings

Diam. of Pinion

As Coupled

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Length of After Bearing

No. of Bearings

Diam. of Pinion

As Coupled

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Length of After Bearing

No. of Bearings

Diam. of Pinion

As Coupled

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Length of After Bearing

No. of Bearings

Diam. of Pinion

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Diam. of Pinion

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Actual

Length of After Bearing

No. of Bearings

Diam. of Pinion

As Coupled

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Length of After Bearing

No. of Bearings

Diam. of Pinion

As Coupled

Actual

Length of After Bearing

No. of Bearings

Diam. of Pinion

As Coupled

Actual

Length of After Bearing

No. of Bearings

Diam. of Pinion

As Coupled

Actual

SHAFTING.

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

No. of Lengths in each *2* Angle of Cranks *120°*

Diar. by Rule Actual *9 1/4"* In Way of Webs *9 1/2"*

" of Crank Pins *9 1/4"* Length between Webs *10"*

Greatest Width of Crank Webs *18"* Thickness *6"*

Least " " *✓* " *✓*

Diar. of Keys in Crank Webs *✓* Length *✓*

" Dowels in Crank Pins *1 3/8"* Length *4 1/2"* Screwed or Plain *Plain*

No. of Bolts each Coupling *6* Diar. at Mid Length *2 1/8"* Diar. of Pitch Circle *14 1/2"*

Greatest Distance from Edge of Main Bearing to Crank Web *8"*

Type of Thrust Blocks *Horse Shoe.*

No. " Rings *4*

Diar. of Thrust Shafts at bottom of Collars *9 1/4"* No. of Collars *4*

" " Forward Coupling *9 1/4"* At Aft Coupling *9 1/4"*

Diar. of Intermediate Shafting by Rule *None.* Actual *✓* No. of Lengths *✓*

No. of Bolts, each Coupling *✓* Diar. at Mid Length *✓* Diar. of Pitch Circle *✓*

Diar. of Propeller Shafts by Rule Actual *10 3/4"* At Couplings *9 1/4"*

Are Propeller Shafts fitted with Continuous Brass Liners? *Yes.*

Diar. over Liners *11 15/16"* Length of After Bearings *3'-7"*

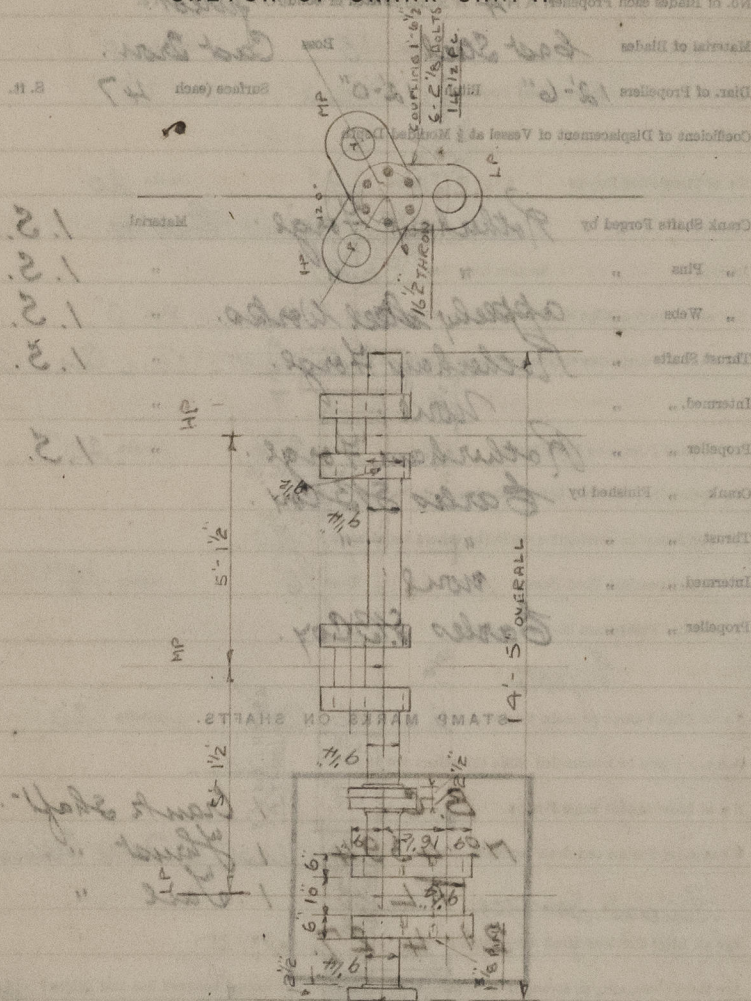
Of what Material are the After Bearings composed? *Lignum Vitae*

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.



⑤ Thickness of liner increased see Glasgow letter dated

8.4.27.

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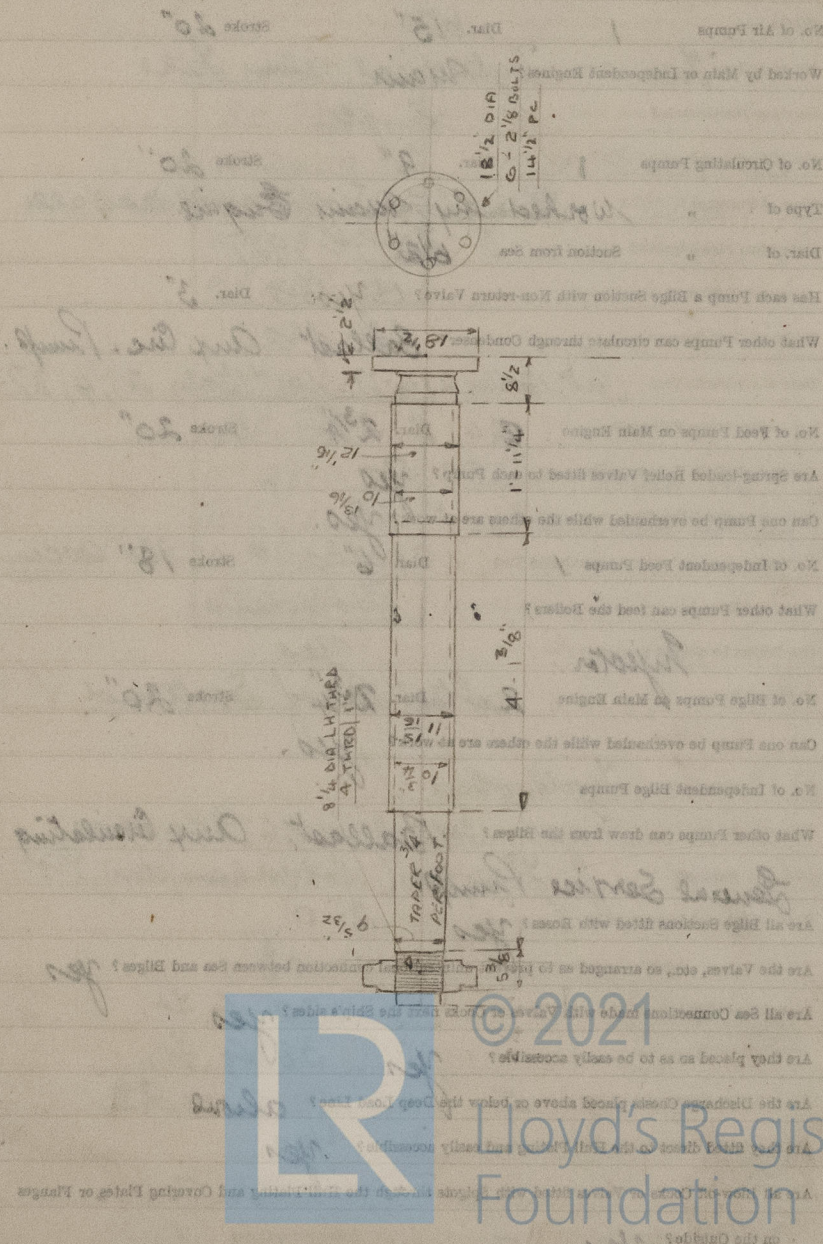
No. of Blades each Propeller *4* Fitted or Solid? *fitted*
 Material of Blades *cast Steel* Boss *Cast Iron*
 Diam. of Propellers *12'-6"* Pitch *12'-0"* Surface (each *47* S. ft.
 Coefficient of Displacement of Vessel at $\frac{1}{2}$ Moulded Depth

Crank Shafts Forged by *Rotherham Forge* Material *1. S.*
 " Pins " " " *1. S.*
 " Webs " *appleby Steel Works.* " *1. S.*
 Thrust Shafts " *Rotherham Forge.* " *1. S.*
 Intermed. " " *none.* " "
 Propeller " " *Rotherham Forge.* " *1. S.*
 Crank " Finished by *Charles S.B. Coy.*
 Thrust " " " " "
 Intermed. " " *none.*
 Propeller " " *Charles S.B. Coy.*

STAMP MARKS ON SHAFTS.

B. C.	1 Crank shaft.
No 4394	1 "Haulst "
T. L.	1 Tail "
21.4.27.	

SKETCH OF PROPELLER SHAFT.



Worked by Main or Independent Engines? *Main*

Type of " *Worked by Main Engine*

Diar. of	"	Suction from Sea	6 1/2"
----------	---	------------------	--------

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

No. of Feed Pumps on Main Engine 2 Diar. $2\frac{3}{4}$ " Stroke 20"

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 1 Diam. 6" Stroke 18"

What other Pumps can feed the Boilers?

No. of Bilge Pumps on Main Engine 2 Diam. $2\frac{3}{4}$ " Stroke 20"

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, Aux Circulating*

8 General Service 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? *Yes*

Are they placed so as to be easily accessible? Yes

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

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

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

on the Outside? *Yes*

BOILERS.

Works No. **670**

No. of Boilers **Two**. Type **Cylindrical Return Tube**

Single or Double-ended **Single**

No. of Furnaces in each **2**

Type of Furnaces **Deightons Section Withdrawable.**

Date when Plan approved **Feb. 1st 1927**

Approved Working Pressure **180 lbs.**

Hydraulic Test Pressure **320 lbs**

Date of Hydraulic Test **Port. Boiler 25-4-27. Starboard Boiler 29/4/27.**

„ when Safety Valves set **24.5.27**

Pressure at which Valves were set **180 lbs.**

Date of Accumulation Test **24.5.27.**

Maximum Pressure under Accumulation Test **191 lbs = 11 lbs accum**

System of Draught **Howdens**

Can Boilers be worked separately? **Yes**

Makers of Plates **Steel Co. of Scotland** ✓

„ Stay Bars **Hydrolinham** ✓

„ Rivets **Rivet Bolt & Nut Co. Glasgow.**

„ Furnaces **J. Thomson (Wolverhampton) Ltd.**

Greatest Internal Diam. of Boilers **12'-0"**

„ „ Length „ **10'-10 $\frac{3}{8}$ "**

Square Feet of Heating Surface each Boiler **1470 sq ft.**

„ „ Grate „ „ **38 sq ft.**

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

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

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

„ Test Cocks „ **-** „ Salinometer Cocks **1**

B.C. TEST.

792809

TEST 320 lbs.

W.P. 180 lbs.

25.4.27. T.L.

B.C. TEST.

792810

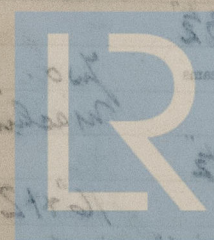
TEST 320 lbs.

W.P. 180 lbs.

29.4.27 T.L.

Test Marks on
Port Boiler.

Test Marks on
Starboard Boiler



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

On pillars
Direct

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?

No.

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

No. of Rows of Rivets in Centre Circumferential Seams

Are these Seams Hand or Machine Riveted?

Diar. of Rivet Holes

No. of Rows of Rivets in Front End Circumferential Seams

Are these Seams Hand or Machine riveted?

Diar. of Rivet Holes

No. of Rows of Rivets in Back End Circumferential Seams

Are these Seams Hand or Machine Riveted?

Diar. of Rivet Holes

Size of Manholes in Shell

Dimensions of Compensating Rings

yes.
One
Two
1 1/2"
7/8"

Steel
Butt
Double
yes.
1 3/16"
7/8"

Machine
Treble
5

—

—

—

Two
Hand

Two
Machine

16" x 12"

2'6" x 2'4" x 1" thick

Thickness of End Plates in Steam Space Approved

" " in Boilers

Pitch of Steam Space Straps

Diar. of Straps Approved

" " in Boilers

Material of "

How are Straps Secured?

Diar. and Thickness of Loose Washers on End Plates

" " Riveted

" " Doubling Straps

Thickness of Middle Back End Plates Approved

" " in Boilers

Thickness of Doublings in Wide Spaces between Fireboxes

Pitch of Straps as

Diar. of Straps Approved

" " in Boilers

Material of "

Are Straps fitted with Nut and Washer?

Thickness of Back End Plates at Bottom Approved

" " in Boilers

Pitch of Straps as Wide Spaces between Fireboxes

Thickness of Doublings in

Thickness of Front End Plates at Bottom Approved

" " in Boilers

No. of Doublings 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

 $\frac{1}{32}$ " $\frac{1}{32}$ " $17 \times 15 \frac{3}{4}$ $2 \frac{3}{4}$

Threads per Inch

6

 $2 \frac{3}{4}$

6

Steel 28 To 32 Tons Tensile

Double Nuts

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Part 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

" " " " "

Thickness of Stay Tubes

" " " " "

External Diam. of Tubes

Material "

Thickness of Furnace Plates Approved

" " " " " in Boilers

Smallest outside Diam. of Furnaces

Length between Tube Plates

Width of Combustion Chambers (front to back)

" " " " " in Boilers

Pitch of Stays in G.C. Tube



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Diarr. of Stays Approved $2\frac{1}{2}'' - 2\frac{3}{4}''$ Threads per Inch 6.
 " " in Boilers $2\frac{1}{2}'' + 2\frac{3}{4}''$ 6.
 Material " Steel 28 To 32 Tons Tensile

Thickness of Front Tube Plates Approved $3\frac{1}{16}''$
 " " " in Boilers $3\frac{1}{16}''$

Pitch of Stay Tubes at Spaces between Stacks of Tubes $13'' + 7\frac{1}{2}''$

Thickness of Doublings in " " "
 " Stay Tubes at " " " $3\frac{3}{8}''$

Are Stay Tubes fitted with Nuts at Front End? Yes.

Thickness of Back Tube Plates Approved $7\frac{7}{8}''$
 " " " in Boilers $7\frac{7}{8}''$

Pitch of Stay Tubes in Back Tube Plates $11\frac{5}{8}'' + 7\frac{1}{2}''$
 " Plain " $3\frac{3}{8}'' + 3\frac{3}{4}''$

Thickness of Stay Tubes $5\frac{1}{16}''$ 9 3 4 R.

" Plain " 9. G.

External Diarr. of Tubes $2\frac{1}{2}''$

Material " Iron.

Thickness of Furnace Plates Approved $17\frac{1}{32}''$

" " " in Boilers $17\frac{1}{32}''$

Smallest outside Diarr. of Furnaces $3 - 5\frac{9}{16}''$

Length between Tube Plates $7 - 3''$

Width of Combustion Chambers (Front to Back) $2 - 8\frac{1}{32}''$

Thickness of " " Tops Approved $1\frac{1}{16}''$

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

Pitch of Screwed Stays in C.C. Tops $9\frac{7}{8}'' + 8\frac{1}{2}''$

Diarr. of Screwed Stays Approved $2\frac{1}{2}'' - 2\frac{3}{4}''$ Threads per Inch 6.
 " " " in Boilers $2\frac{1}{2}'' + 2\frac{3}{4}''$ 6.
 Material " Steel 28 To 32 Tons Tensile

Thickness of Combustion Chamber Plates Approved $3\frac{1}{16}''$
 " " " in Boilers $3\frac{1}{16}''$

Pitch of Screwed Stays in C.C. Plates $13'' + 7\frac{1}{2}''$

Diarr. of " " " Approved $3\frac{3}{8}''$
 " " " in Boilers $3\frac{3}{8}''$

Material " Steel 28 To 32 Tons Tensile

Thickness of Combustion Chamber Backs Approved $7\frac{7}{8}''$
 " " " in Boilers $7\frac{7}{8}''$

Pitch of Screwed Stays in C.C. Backs $11\frac{5}{8}'' + 7\frac{1}{2}''$
 " " " Approved $3\frac{3}{8}'' + 3\frac{3}{4}''$

Thickness of Stay Tubes $5\frac{1}{16}''$ 9 3 4 R.

" Plain " 9. G.

External Diarr. of Tubes $2\frac{1}{2}''$

Material " Iron.

Thickness of Furnace Plates Approved $17\frac{1}{32}''$

" " " in Boilers $17\frac{1}{32}''$

Smallest outside Diarr. of Furnaces $3 - 5\frac{9}{16}''$

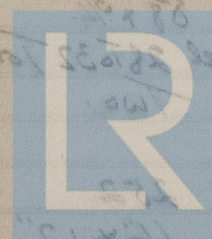
Length between Tube Plates $7 - 3''$

Width of Combustion Chambers (Front to Back) $2 - 8\frac{1}{32}''$

Thickness of " " Tops Approved $1\frac{1}{16}''$

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

Pitch of Screwed Stays in C.C. Tops $9\frac{7}{8}'' + 8\frac{1}{2}''$



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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 Lengths
 Material
 Joints, Welded or Bolted
 Internal Diar.
 Thickness
 How are Joints secured?
 Date of Hydraulic Test
 Test Pressure

No. of Lengths
 Material
 Joints, Welded or Bolted
 Internal Diar.
 Thickness
 How are Joints secured?
 Date of Hydraulic Test
 Test Pressure



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EVAPORATORS.

No.	Type	Tons per Day
Makers		
Working Pressure	Test Pressure	Date of Test
Date of Test of Safety Valves under Steam		

FEED WATER HEATERS.

No.	Type	Makers	Working Pressure	Test Pressure	Date of Test
1	Exhaust Steam, Surface heater	Henry Watson, Newcastle	180 lbs.	Shell 360 lbs. Tubes 432 lbs.	3-5-27

FEED WATER FILTERS.

No.	Type	Makers	Working Pressure	Test Pressure	Date of Test
1	Suction	Messrs. Henry Watson, Newcastle			Size 2 1/2" bore.

LIST OF DONKEY PUMPS.

BALLAST PUMP. 9" x 11" x 10" Starke 200 Tons/hour.
Made by Thom, Lamont & Co., W.P. 180 lbs per sq. in.
Suction from Sea, Bilge line, Bilge direct, Ballast Tanks, fore & aft Peak Tanks & Engine room Well.
Discharge to Main Condenser, Overboard, & Tanks

GENERAL SERVICE PUMP.
8 1/2" x 6" x 18" Simplex Pump. 6000 Galls/hour.
Made by Messrs G. & J. Wear W.P. 180 lbs per sq. in.
Suctions, Sea bilge line Hotwell Ballast Tanks.
Engine room Tanks, fore peak Eng Room Well.
Discharge deck water service, overboard
Boilers, and ash ejector

AUX. CIRCULATING PUMP

Vertical Duplex 6 1/4" x 6 1/2" x 6" W.P. 180 LBS. per sq. in.
Made by Angus & Smith Hull.
Suction Duplex 6 1/4" x 6 1/2" x 6" Working Pressure 180 lbs per sq. in.
Made by Messrs Angus & Smith.
Suctions Sea Bilge line, Ballast Tank, Eng room Tanks
fore peak Eng room well.
Discharges Condenser, Deck water service, overboard.
Refig. Condenser.

Fresh Water Pump Vertical Duplex Pump 3 1/4" x 3" x 4" W.P. 180 lbs.
Made by Messrs Thom, Lamont & Co.
Suctions Sea & aft Peak.
Discharges Culinary Tanks.

OTHER ARTICLES OF SPARE GEAR:—

34 Lin bar.

8, Propeller blade studs & nuts

Trings & Springs for H.P. Picton Vale (Top & Bottom)

8 Wing Bars.

Cheek plates for 2 furnaces

3 Doz Water gauge glasses & Washers.

3 doz water gauge glass markers

No. of Machine	Capacity of each	1	No. of Steam Engines and Machine	No. of Compressors	No. of Tanks
1	200 cu. gal.	1	1	1	1
2	200 cu. gal.	1	1	1	1
3	200 cu. gal.	1	1	1	1
4	200 cu. gal.	1	1	1	1
5	200 cu. gal.	1	1	1	1
6	200 cu. gal.	1	1	1	1
7	200 cu. gal.	1	1	1	1
8	200 cu. gal.	1	1	1	1
9	200 cu. gal.	1	1	1	1
10	200 cu. gal.	1	1	1	1
11	200 cu. gal.	1	1	1	1
12	200 cu. gal.	1	1	1	1
13	200 cu. gal.	1	1	1	1
14	200 cu. gal.	1	1	1	1
15	200 cu. gal.	1	1	1	1
16	200 cu. gal.	1	1	1	1
17	200 cu. gal.	1	1	1	1
18	200 cu. gal.	1	1	1	1
19	200 cu. gal.	1	1	1	1
20	200 cu. gal.	1	1	1	1
21	200 cu. gal.	1	1	1	1
22	200 cu. gal.	1	1	1	1
23	200 cu. gal.	1	1	1	1
24	200 cu. gal.	1	1	1	1
25	200 cu. gal.	1	1	1	1
26	200 cu. gal.	1	1	1	1
27	200 cu. gal.	1	1	1	1
28	200 cu. gal.	1	1	1	1
29	200 cu. gal.	1	1	1	1
30	200 cu. gal.	1	1	1	1
31	200 cu. gal.	1	1	1	1
32	200 cu. gal.	1	1	1	1
33	200 cu. gal.	1	1	1	1
34	200 cu. gal.	1	1	1	1
35	200 cu. gal.	1	1	1	1
36	200 cu. gal.	1	1	1	1
37	200 cu. gal.	1	1	1	1
38	200 cu. gal.	1	1	1	1
39	200 cu. gal.	1	1	1	1
40	200 cu. gal.	1	1	1	1
41	200 cu. gal.	1	1	1	1
42	200 cu. gal.	1	1	1	1
43	200 cu. gal.	1	1	1	1
44	200 cu. gal.	1	1	1	1
45	200 cu. gal.	1	1	1	1
46	200 cu. gal.	1	1	1	1
47	200 cu. gal.	1	1	1	1
48	200 cu. gal.	1	1	1	1
49	200 cu. gal.	1	1	1	1
50	200 cu. gal.	1	1	1	1
51	200 cu. gal.	1	1	1	1
52	200 cu. gal.	1	1	1	1
53	200 cu. gal.	1	1	1	1
54	200 cu. gal.	1	1	1	1
55	200 cu. gal.	1	1	1	1
56	200 cu. gal.	1	1	1	1
57	200 cu. gal.	1	1	1	1
58	200 cu. gal.	1	1	1	1
59	200 cu. gal.	1	1	1	1
60	200 cu. gal.	1	1	1	1
61	200 cu. gal.	1	1	1	1
62	200 cu. gal.	1	1	1	1
63	200 cu. gal.	1	1	1	1
64	200 cu. gal.	1	1	1	1
65	200 cu. gal.	1	1	1	1
66	200 cu. gal.	1	1	1	1
67	200 cu. gal.	1	1	1	1
68	200 cu. gal.	1	1	1	1
69	200 cu. gal.	1	1	1	1
70	200 cu. gal.	1	1	1	1
71	200 cu. gal.	1	1	1	1
72	200 cu. gal.	1	1	1	1
73	200 cu. gal.	1	1	1	1
74	200 cu. gal.	1	1	1	1

REFRIGERATORS.

No. of Machines	1	Capacity of each	200 Cu. ft.
Makers	Trick Co. Waynesboro, Ga. America		
Description	4" x 4" Vertical Steam Engine and 3" x 3" Single Cylinder Compressor		

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

 C, O_2

.. 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.
Name of Dynamo	Edwards & Chapman			
Capacity	65	100	400	
Current Alternating or Continuous	Continuous			
Range or Double Wire System	Double			
Position of Dynamo	On 2nd floor of Engine Room			
Main Switch Board	Next to Dynamo			
No. of Circuits to which switches are provided on Main Switch Board	4			
Performance of Steam Circuit:				
Boiler	Boiler of Engine	Boiler Pressure	Boiler Temperature	Boiler Efficiency
ENGINE ROOM	19	50	5	4.036 120 deg 100% 600
	1	209	1	
	4	120	2	
APR. Accounts	21	50	5	4.036 120 deg 100% 600
	60	50		

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

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

NONE.

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. NONE 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 Bulkhead

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? No Joints

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

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? 1.1 megohms.

Ohms.

Is the Installation supplied with a Voltmeter? Yes.

" " " an Ampere Meter? Yes.

Date of Trial of complete Installation 1.6.27. Duration of Trial 6 hours.

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

J. H. Laurie.



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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. *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.*

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

as ascertained by me from personal examination

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

Fees—

MAIN BOILERS.

	£	s.	d.
H.S. Sq. ft. <i>22</i>		<i>1</i>	<i>0</i>
G.S. "			

DONKEY BOILERS.

H.S. Sq. ft.			
G.S. "			
£			

ENGINES.

L.P.C. Cub. ft. <i>25</i>		<i>17</i>	<i>0</i>
£			

Testing, &c.

Expenses ... *EL* ... *7* : *10* : *0*

Total ... £ *55* : *8* : *0*

It is submitted that this Report be approved,

John King
Chief Surveyor.

Approved by the Committee for the Class of M.B.S.* on the *10th August 1924.*

G. Anderson
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Fees advised

Fees paid



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Secretary.

GENERAL CONSTRUCTION

Have the following been submitted to the Committee for the Class of M.B.S. on the 1st day of May 1900?

H.S. ... 22 : 1 : 00

Have the following been submitted to the Committee for the Class of M.B.S. on the 1st day of May 1900?

DOCKERY BROTHERS.

H.S. ... 22 : 1 : 00

G.S. ... 22 : 1 : 00

EXPENSES

L.S. ... 22 : 17 : 00

Testing fee ... 22 : 17 : 00

Expenses ... 22 : 17 : 00

Total ... 22 : 17 : 00

It is submitted that this Report be approved.

Approved by the Committee for the Class of M.B.S. on the 1st day of May 1900.

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