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No. 2101

THE BRITISH CORPORATION FOR THE SURVEY  
AND  
REGISTRY OF SHIPPING.

Report No. 1854 No. in Register Book 3165

MEAFORD \*

S.S.

ROBERT J. BUCK

Makers of Engines

HEWES PHILLIPS & CO.

Works No. 89 EFC 1213

Makers of Main Boilers

CANADIAN VICKERS LTD.

Works No.

222-223.

Makers of Donkey Boiler

Works No.

MACHINERY.

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No.

THE BRITISH CORPORATION FOR THE SURVEY

AND

REGISTRY OF SHIPPING.

Report No. *1854* No. in Register Book *3165*

Received at Head Office

*19th June 1925*

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

"*ROBERT J. BUCK*"

Official No. *151043* Port of Registry *Montreal. Que.*

Registered Owners *Geo Hall Coal & Shipping Corp*

*190 St James St. Montreal. Que.*

Engines Built by *Newer Phillips*

at *Newark N.J. U.S.A.*

Main Boilers Built by *Canadian Vickers Ltd.*

at *Montreal. Que.*

Donkey " "

Date of Completion *May 20th 1925.*

First Visit

Last Visit *May 20, 1925* Total Visits

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## RECIPROCATING ENGINES.

Works No. *89*  
*EFC No 1213*

No. of Sets *1* Description *3 Crank Triple S.C.*

No. of Cylinders each Engine *three* No. of Cranks *three*  
 Diars of Cylinders *15½" - 26" - 44"* Stroke *26"*

Cubic feet in each L.P. Cylinder *22.9*

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

" " each Receiver? *yes*

Type of H.P. Valves, *Piston. Inside steam*

" 1st L.P. " *Piston*

" 2nd L.P. "

" L.P. " *Double ported slide*

" Valve Gear *Stephenson Link motion*

" Condenser *Surface*

Cooling Surface *1036* sq. ft.

Diameter of Piston Rods (plain part) *3¾"*

Screw part (bottom of thread) *2⅞"*

Material " *IS*

Diar. of Connecting Rods (smallest part) *3¾"*

Material *I.S.*

" Crosshead Gudgeons *4½"*

Length of Bearing *5⅝"*

Material *I.S.*

No. of Crosshead Bolts (each) *4*

Diar. over Thrd. *2"*

Thrds. per inch *4½*

Material *IS*

" Crank Pin " *2*

" *2½"*

" *4½* " *IS*

" Main Bearings *6*

Lengths *9½"*

" Bolts in each *2*

Diar. over Thread *2½"*

Threads per inch *4½*

Material *IS*

" Holding Down Bolts, each Engine *75*

Diar. *1⅝"*

No. of Metal Chocks *75*

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

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

If not, how are they fitted? *Double nuts & washers*

Connecting Rods, Forged by

*Singer Forge Co. Buffalo - N.Y.*

Piston " "

Crossheads, " "

*Jacobsen Steel Co. Philadelphia*

Connecting Rods, Finished by

*Hewes & Phillips Iron Works.*

Piston " "

Crossheads, " "

Date of Harbour Trial

*14.5.25*

" Trial Trip

*20.5.25*

Trials run at

*Collingwood, Ont.*

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

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

*850*

Revs. per min. *110*

Pressure in 1st L.P. Receiver, *58* lbs., 2nd L.P.,

lbs., L.P., *8* lbs., Vacuum, *26* ins.

Speed on Trial

*10.28 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.

*700*

Revs. per min.

Estimated Speed



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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 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

## 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 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 " "

" " Propeller 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.

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

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 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 Revol. 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.

Type of Thrust Block

No. of Thrust Shafts at bottom of Collars

Diam. of Thrust Shafts at bottom of Collars

No. of Thrust Shafts at bottom of Collars

Diam. of Thrust Shafts at bottom of Collars

No. of Thrust Shafts at bottom of Collars

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Diam. of Thrust Shafts at bottom of Collars

No. of Thrust Shafts at bottom of Collars

Diam. of Thrust Shafts at bottom of Collars







4

### Fitted or Solid?

7 Dec

### Material of Blades

C. J.

Boggs

cd.

Diar. of Propellers

11-Q

Pitch

10-0

Surface (each

39

S. ft.

Coefficient of Displacement of Vessel at 4 Moulded Depth

### Crank Shafts Forged by

Snyder Forge Co v Tacoma Steel Co. I.S.

J.S.

„ Pins

Sizer Forge Co. Buffalo N.Y. U.S.

J.S.

" Web

National Foundry Co. Erie Pa. U.S.

Pa. R.S.

### Thrust Shafts

Jacobs Steel Co. " I.S.

25.

Intermed.,

Propeller „

Canada Foundries & Forging, Welland. I S.

and. 25.

Crank      "      Finished by

Hewes & Phillips Ltd

Thrust .

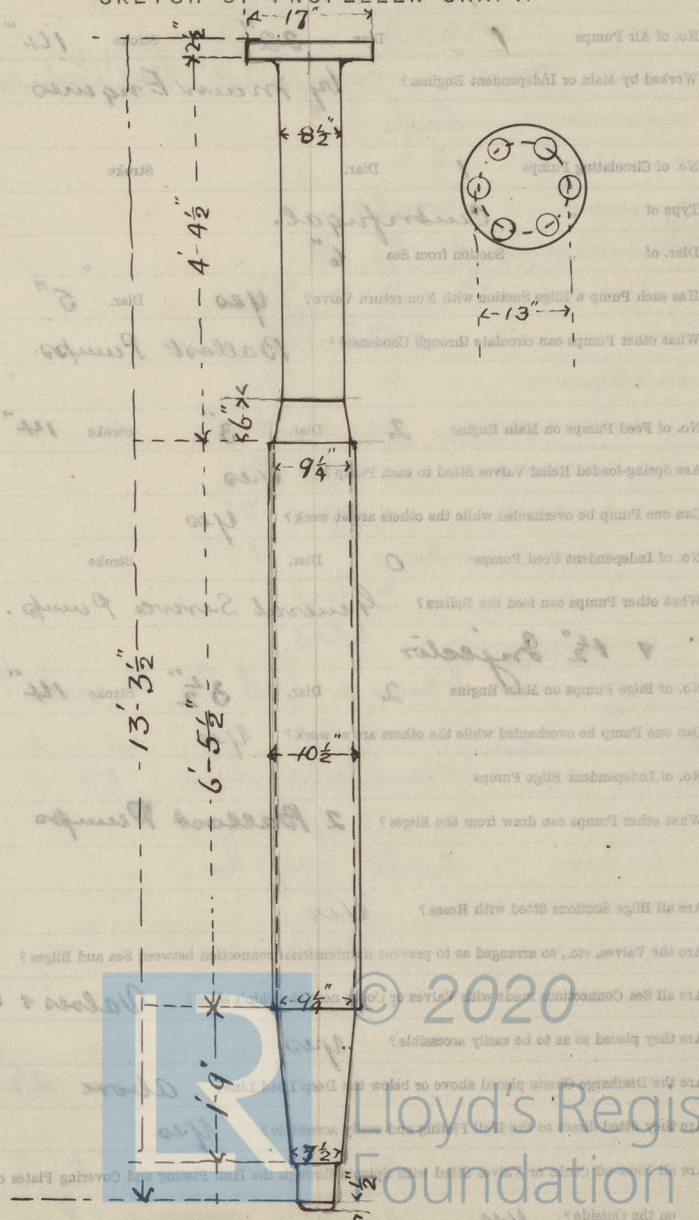
11 12 13 14

Intermed. ,

Propeller 2.

Collingwood. S.B.-Co.

STAMP MARKS ON SHAFTS.





## PUMPS, ETC.

No. of Air Pumps 1 Diar. 22" Stroke 14"

Worked by Main or Independent Engines? *by Main Engines*

No. of Circulating Pumps 1 Diar. Stroke

Type of " *Centrifugal.*

Diar. of " Suction from Sea 6"

Has each Pump a Bilge Suction with Non-return Valve? *yes* Diar. 5"

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

No. of Feed Pumps on Main Engine 2 Diar. 3" 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 0 Diar. Stroke

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

*+ 1 1/2" Injector*

No. of Bilge Pumps on Main Engine 2 Diar. 3 1/2" Stroke 14"

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? *2 Ballast Pumps*

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? *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

*Handwritten notes and diagrams on page 13, including a sketch of a boiler section and various measurements and descriptions.*



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## BOILERS.

Works No. 222-3  
 No. of Boilers 2 Type *Cylindrical Multitubular*  
 Single or Double-ended *Single*  
 No. of Furnaces in each 3  
 Type of Furnaces *Harrison*  
 Date when Plan approved *X* 195 lbs.  
 Approved Working Pressure *2-2-25*  
 Hydraulic Test Pressure 342½ lbs.  
 Date of Hydraulic Test 9-4-25  
 „ when Safety Valves set 19-5-25  
 Pressure at which Valves were set 195 lbs.  
 Date of Accumulation Test 19-5-25  
 Maximum Pressure under Accumulation Test 198  
 System of Draught *Natural*  
 Can Boilers be worked separately? *Yes*  
 Makers of Plates *The Carnegie Steel Co, Monell Pa.*  
 „ Stay Bars *The Nova Scotia Steel & Coal Co.*  
 „ Rivets  
 „ Furnaces *Keels Forge Co.*  
 Greatest Internal Diam. of Boilers 12'-6"  
 „ „ Length „ 10'-10"  
 Square Feet of Heating Surface each Boiler 1573  
 „ „ Grate „ „ 45  
 No. of Safety Valves each Boiler 2 Rule Diam. Actual 2½"  
 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



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

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

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

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

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

Diam. of Rivet Holes *1 3/16* Pitch *7 1/16*

No. of Rows of Rivets in Centre Circumferential Seams

Are these Seams Hand or Machine Riveted?

Diam. of Rivet Holes Pitch

No. of Rows of Rivets in Front End Circumferential Seams

Are these Seams Hand or Machine riveted?

Diam. of Rivet Holes *1 3/16* Pitch *3 3/4*

No. of Rows of Rivets in Back End Circumferential Seams

Are these Seams Hand or Machine Riveted?

Diam. of Rivet Holes *1 3/16* Pitch *3 3/4*

Size of Manholes in Shell

Dimensions of Compensating Rings

*one  
two  
1 1/8"  
1 1/8"*

*Steel*

*Butt*

*Double*

*yes*

*875"*

*1"*

*machine*

*Treble*

*5*

*7 1/16*

*-*

*-*

*-*

*2*

*Back machine*

*Front Hand*

*2*

*Hand*

*3 3/4"*

*16" x 12"*

*34" x 31"*



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Thickness of End Plates in Steam Space Approved

 $\frac{15}{16}$ "

On Pelicans

" " " " " in Boilers

 $\frac{15}{16}$ "

By Pelican

Pitch of Steam Space Stays

 $14\frac{1}{2}" \times 13\frac{3}{4}"$ 

Diar. " " " " Approved

 $2\frac{1}{4}"$ 

Threads per Inch

" " " " " in Boilers

 $2\frac{1}{4}"$ 

Material of " " "

Steel  
Double nuts

How are Stays Secured?

Diar. and Thickness of Loose Washers on End Plates

" " " " Riveted " " "

Width " " Doubling Strips "

Thickness of Middle Back End Plates Approved

 $\frac{5}{8}"$   
 $\frac{5}{8}"$ 

" " " " " in Boilers

Thickness of Doublings in Wide Spaces between Fireboxes

Pitch of Stays at

Diar. of Stays Approved

Threads per Inch

" " " " in Boilers

Material "

Steel

Are Stays fitted with Nuts outside?

Thickness of Back End Plates at Bottom Approved

 $\frac{5}{8}"$   
 $\frac{5}{8}"$ 

" " " " " in Boilers

Pitch of Stays at Wide Spaces between Fireboxes

Thickness of Doublings in

Thickness of Front End Plates at Bottom Approved

 $3\frac{1}{4}"$   
 $3\frac{3}{4}"$ 

" " " " " in Boilers

No. of Longitudinal Stays in Spaces between Furnaces

Threads per Inch

Pitch 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

" " " " Stay

Thickness of Stay Tubes

" " " " Stay

External Diat. of Tubes

Material

Thickness of Furnace Plates Approved

" " " " in Boilers

Smallest outside diam. 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.C. Tops

2 1/4"  
2 1/4"  
Steel

3/4"  
3/4"

8" x 8 3/4"

9 3/2"  
1/2"

3/4"  
3/4"

4 1/2" x 4 3/8"  
9" x 8 3/4"

9 3/2"  
15"

3 1/4"  
Steel

.51  
.51

37"  
7-4 1/2"

3 1/4" over

5/8" 5/8"

7 1/4" x 6 7/8"



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Diar. of Screwed Stays Approved

Threads per Inch

10

" " " in Boilers

Material " "

 $1\frac{3}{8}"$   
 $1\frac{3}{8}"$   
 Steel

Thickness of Combustion Chamber Sides Approved

 $5\frac{1}{8}"$   
 $5\frac{1}{8}"$ 

" " " " in Boilers

Pitch of Screwed Stays in C.O. Sides

 $6\frac{7}{8}" \times 5\frac{7}{8}"$ 

Diar. " " Approved

Threads per Inch

10

" " " in Boilers

Material " "

 $1\frac{1}{4}"$   
 $1\frac{1}{4}"$   
 Steel

Thickness of Combustion Chamber Backs Approved

 $5\frac{1}{8}"$   
 $5\frac{1}{8}"$ 

" " " " in Boilers

Pitch of Screwed Stays in C.O. Backs

 $6\frac{3}{8}" \times 6\frac{1}{16}"$ 

Diar. " " Approved

Threads per Inch

10

" " " in Boilers

Material " "

 $1\frac{1}{4}"$   
 $1\frac{1}{4}"$   
 Steel

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

 $no$   
 $5\frac{1}{8}"$ 

Marginal only

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

 $8\frac{1}{2}" \times 1\frac{1}{2}"$   
 Steel  
 3

200

 $15" \times 11"$ 

## VERTICAL DONKEY BOILERS

No. of Boilers  
Type  
Diameter of Boiler  
Height  
Height of Boiler Crown above the Base  
Are Boiler Crown Flat or Dishd?  
Internal Radius of Dishd Boilers  
Description of Beams in Boiler Crown  
Diam. of Rivet Hole  
Height of Rivet Crown above the Base  
Are Rivet Crown Flat or Dishd?  
External Radius of Dishd Crown  
No. of Crown Stays  
Diam.  
Material  
Thickness of Plates  
Internal Diam. of Rivet as Top  
Bottom  
No. of Water Tubes  
Diam. of Water Tubes  
Material of Water Tubes  
Diam. of Manhole or Door  
Dimensions of Lowering and Raising  
Working Pressure, each Boiler  
Grate 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 Lengths

Material

External, Welded or Seamed

Internal Diar.

Thickness

How are Flanges secured?

Date of Hydraulic Test

Test Pressure

No. of Lengths

Material

External, 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**  
 Braze, Welded or Seamless **Welded**  
 Internal Diam. **4"**  
 Thickness **.341"**  
 How are Flanges secured? **Riveted**  
 Date of Hydraulic Test **12.5.25**  
 Test Pressure **600 lbs.**

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

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

## LIST OF EVAPORATORS.

2 Boilers Vertical Diameter 4' 6" Height 10' 6"  
 Indianapolis 2' 6" x 2' 6" x 2' 6"  
 1 Generator 2' 6" x 2' 6" x 2' 6"  
 1 Buffalo Pump 2' 6" x 2' 6" x 2' 6"  
 1 Fresh water Pump Diameter 2' 6" x 2' 6" x 2' 6"  
 1 Horizontal 2' 6" x 2' 6" x 2' 6"  
 1 Ca machine  
 1 Feed Water Heaters  
 1 Horizontal 2' 6" x 2' 6" x 2' 6"  
 1 Vertical 2' 6" x 2' 6" x 2' 6"  
 1 Ca machine 2' 6" x 2' 6" x 2' 6"

## FEED WATER FILTERS.

1 2' 6" x 2' 6" x 2' 6"  
 1 2' 6" x 2' 6" x 2' 6"  
 1 2' 6" x 2' 6" x 2' 6"  
 1 2' 6" x 2' 6" x 2' 6"



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## FEED WATER HEATERS.

## FEED WATER FILTERS.

- 2 Ballast Vertical Duplex by Bean Bros  
Indianapolis. Size 8" x 8" x 12"
- 1 General service Pump Duplex Horizontal  
by Buffalo Pump Co. Size 10" x 6" x 12"
- 1 Fresh water Pump Duplex Worthington  
Horizontal Size 3" x 2" x 3"
- 1 Ice machine Pump Duplex Worthington  
Horizontal. Size 3" x 2" x 3"
- 1 Vacuum Pump Simplex Horizontal by  
Darling Bros. Montreal Size 5" x 7" x 10"

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## SPARE GEARS

|                       |    |                        |     |                             |    |
|-----------------------|----|------------------------|-----|-----------------------------|----|
| No. of Top End Bolts. | 2  | No. of Bot. End Bolts. | 2   | No. of Cylinder Cover Studs | 12 |
| " Coupling Bolts      | 6  | " Main Bearing Bolts   | 2   | " Valve Chest               | "  |
| " Junk Ring Bolts     | 6  | " Feed Pump Valves     | 2   | " Bilge Pump Valves         | 2  |
| " H.P. Piston Rings   | 2  | " I.P. Piston Rings    | 2   | " L.P. Piston Rings         | —  |
| " Springs             | "  | " Springs              | "   | " Springs                   | "  |
| " Safety Valve        | "  | " Fire Bars            | 120 | " Feed Check Valves         | 2  |
| " 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           | 2   | " Propeller Blades          | 2  |
| " Boiler Tubes        | 40 | " Condenser Tubes      | 6   | " Condenser Ferrules        | "  |

OTHER ARTICLES OF SPARE GEAR:—

## REFRIGERATORS



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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

1 Small Ice machine for Crews supply  
Makers. Triumph Ice Machine Co  
Cincinnati

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. |
|--------------|------------------------------|------------------------|--------------------------------------|----------------------------|
| Navigation   | 6                            | 50 W                   | 4                                    | 1/10                       |
| Offic. Room  | 2                            | 50 W                   | 4                                    | 1/10                       |
| Boiler Room  | 3                            | 50 W                   | 4                                    | 1/10                       |
| Upper Eng R  | 8                            | 100 W                  | 4                                    | 1/10                       |
| Lower "      | 13                           | 50 W                   | 4                                    | 1/10                       |
| Offic. Cabin | 22                           | 50 W                   | 10                                   | 1/10                       |
| Forward "    | 31                           | 50 W                   | 9                                    | 1/10                       |
| Back Lyle    | 4                            | 75 W                   | 4                                    | 1/10                       |

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



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## ELECTRIC LIGHTING.

Installation Fitted by *Collingwood S B Co.*  
 No. and Description of Dynamos *One. Westinghouse Steam driven*  
 Makers of Dynamos *Westinghouse Electric Co.*  
 Capacity " *10 KW* Amperes, at *110* Volts, *100* Revols. per Min. *560*  
 Current Alternating or Continuous *Continuous*  
 Single or Double Wire System *Double*  
 Position of Dynamos *Engine Room Tops. After end.*  
 " Main Switch Board " " " " "  
 No. of Circuits to which Switches are provided on Main Switch Board *Eight*

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>Navigation</i>  | <i>6</i>          | <i>50 W</i>   | <i>4</i>                | <i>#10</i>         |   |                            |                                 |
| <i>After Peak</i>  | <i>2</i>          | <i>75 W</i>   | <i>3</i>                | <i>#14</i>         |   |                            |                                 |
| <i>Boiler Room</i> | <i>8</i>          | <i>50 W</i>   | <i>4</i>                | <i>#14</i>         |   |                            |                                 |
| <i>Upper Eng R</i> | <i>8</i>          | <i>100 W</i>  | <i>6</i>                | <i>#14</i>         |   |                            |                                 |
| <i>Lower "</i>     | <i>13</i>         | <i>50 W</i>   | <i>6</i>                | <i>#14</i>         |   |                            |                                 |
| <i>After Cabin</i> | <i>32</i>         | <i>50 W</i>   | <i>10</i>               | <i>#8</i>          | <i>feeding Panel branch with 4 circuits #10 conductor</i> |                            |                                 |
| <i>Forward "</i>   | <i>31</i>         | <i>50 W</i>   | <i>9</i>                | <i>#8</i>          | <i>feeding Panel branch with 6 circuits #10 conductor</i> |                            |                                 |
| <i>Deck Light</i>  | <i>4</i>          | <i>75 W</i>   | <i>4</i>                | <i>#10</i>         |   |                            |                                 |

Total No. of Lights *104* No. of Motors driving Fans, &c.

Current required for Motors and Heaters

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

Engine Room entrance 6 Switches  
Forward Cabin Hall on main deck 6 Switches  
Tall table for navigation lights in wheel house

Are Out-outs fitted as follows?—

On Main Switch Board, to Cables of Main Circuits

yes

On Aux. " " each Auxiliary Circuit

yes

Wherever a Cable is reduced in size

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 Out-outs constructed of Non-inflammable Material?

yes

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

yes

Smallest Single Wire used, No. #14 S.W.G., Largest, No. 00 S.W.G.

How are Conductors in Engine and Boiler Spaces protected?

Conduit

" Saloons, State Rooms, &c., "

by Mouldings & Conduits

What special protection is provided in the following cases?—

(1) Conductors exposed to Heat or Damp

Conduits

(2) " passing through Bunkers or Cargo Spaces

Conduits

(3) " " Deck Beams or Bulkheads

Conduits

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

Are all Hull Connections for Single-Wire Systems made with Screws of large Surface? No single wire

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?

Ohms.

Is the Installation supplied with a Voltmeter?

yes

" " " an Ampere Meter?

yes

Date of Trial of complete Installation 20-5-25

Duration of Trial

8 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?

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

Surveyor.

*Main Engines built to the requirements and under the inspection of the American Bureau of Shipping, & installed in ship under B.C. Supervision.  
Main Boiler built in accordance with the requirements of the British Corporation*

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. "ROBERT. J. BUCK"

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

*H. W. Morris.*

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,

*Joe Barr* for Chief Surveyor.

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

*1<sup>st</sup> July 1915*

Fees advised

Fees paid



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Secretary.



## GENERAL CONSTRUCTION

Have the Machinery and Boilers been examined in accordance with the Regulations of the Board of Trade?

Approved by the

By the

U.S.

Boiler Boilers

Main Engines built to the requirements of the  
under the Inspection of the American Bureau  
of Shipping & installed on ship under U.S. Supervision  
Main Boiler built in accordance with the  
requirements of the British Corporation

Testing etc.

Expenses

Total

It is submitted that this Report be approved

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

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