

No. 1937

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. *1445* No. in Register Book *3032*

S.S.

Lady Alexandra
Makers of Engines *Bow W. & Lachlan Paisley*

Works No. *354-5*

Makers of Main Boilers

Bow W. & Lachlan

Works No. *1017-18*

Makers of Donkey Boiler

Works No. —

MACHINERY.



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Foundation

No.

THE BRITISH CORPORATION FOR THE SURVEY
AND
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Report No. 1445 No. in Register Book 3032

Received at Head Office

20th May 1924

Machinery *ex Caerleon*
Surveyor's Report on the New Engines, Boilers, and Auxiliary

Machinery of the *Single-Triple* *Secret* *Steamer*

Lady Alexandra

Official No.

Port of Registry

Vancouver

Registered Owners

Union Steamship Company
of British Columbia Ltd

Engines Built by

Bow W. Lachlan

at

Paisley

Main Boilers Built by

Bow W. Lachlan

at

Paisley

Donkey " "

None

at

Date of Completion

6th May 1924

First Visit

21st Sept 1923

Last Visit

6th May 1924

Total Visits

30

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RECIPROCATING ENGINES.

Works No. 3564-5 No. of Sets 2 Description *Inverted**Triple Expansion*

No. of Cylinders each Engine *3* No. of Cranks *3*
 Diars. of Cylinders *13 1/4" - 21 1/4" - 34"* Stroke *21"*
 Cubic feet in each L.P. Cylinder *11-03*
 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. "

" 2nd I.P. "

" L.P. " *Andrews & Cameron*" Valve Gear *open type*" Condenser *Steel 3 flow.*Cooling Surface *1300* sq. ft. *Cash.*Diameter of Piston Rods (plain part) *3 1/2"* Screwed part (bottom of thread) *2 3/8"*Material " *Forged Steel*Diar. of Connecting Rods (smallest part) *3 1/4"* Material *Steel Forged.*" Crosshead Gudgeons *4 1/4"* Length of Bearing *8* Material *Steel*No. of Crosshead Bolts (each) *2* Diar. over Thrd. *2 1/4"* Thrds. per inch *4* Material *Forged Steel*" Crank Pin " *2* " *2 1/4"* " *4* " " "" Main Bearings *2* Lengths *17 3/4"*" Bolts in each *2 & 4* Diar. over Thread *1 3/4"* Threads per inch *4* Material *Steel*" Holding Down Bolts, each Engine *40* Diar. *3/8"* No. of Metal Chocks *40*Are the Engines bolted to the Tank Top or to a Built Seat? *To Built Seat*

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

If not, how are they fitted? *By means of fitted bolts fitted**thro Top plate of Built stool*

Connecting Rods, Forged by

Piston " "

Crossheads,

Connecting Rods, Finished by

Piston " "

Crossheads,

Date of Harbour Trial

" Trial Trip

Trials run at

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

If so, what was the I.H.P.? *1780*Pressure in 1st I.P. Receiver, *175* lbs., 2nd I.P., *76* lbs., L.P., *14* lbs., Vacuum, *23* ins.Speed on Trial *14.23*

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

data:—

Builders' estimated I.H.P.

Estimated Speed

The Engines & Boilers have been
taken ex S.S. "Caerleon"



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TURBINE ENGINES

Works No.	Type of Turbines		No. of L.P.	No. of L.P.	No. of Astern
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					
Diar. 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.
"	"	L.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.

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SHAFTING.

Are the Crank Shafts Built or Solid?

Solid

No. of Lengths in each

One

Angle of Cranks

120°

Diar. by Rule

6.56.

Actual

7 1/4 Pin

In Way of Webs

7"

" of Crank Pins

7 1/4

Length between Webs

8 3/4

Greatest Width of Crank Webs

8 3/4

Thickness

6 1/4

Least

"

"

5 1/2

"

4 5/8

Diar. of Keys in Crank Webs

Solid

Length

Solid

" Dowels in Crank Pins

-

Length

-

Screwed or Plain

-

No. of Bolts each Coupling

6

Diar. at Mid Length

1 3/4

Diar. of Pitch Circle

11 3/4

Greatest Distance from Edge of Main Bearing to Crank Web

1 1/2

Type of Thrust Blocks

Horse Shoe

No.

"

Rings

7

Diar. of Thrust Shafts at bottom of Collars

7"

No. of Collars

6

" "

Forward Coupling

7"

At Aft Coupling

7"

Diar. of Intermediate Shafting by Rule

6.23.

Actual

6 3/4

No. of Lengths

3

No. of Bolts, each Coupling

6

Diar. at Mid Length

1 3/4

Diar. of Pitch Circle

11 3/4

Diar. of Propeller Shafts by Rule

6.75.

Actual

7 1/4

At Couplings

7 1/4

Are Propeller Shafts fitted with Continuous Brass Liners?

No.

Diar. over Liners

8 3/8 & 8 1/2

Length of After Bearings

3'-0"

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.

No. of Shafts each Propeller
Material of Shafts
Diar. of Propellers
Coefficients of Displacement of 7' and 1' 1/2' and 1' 1/4' and 1' 1/8' and 1' 1/16' and 1' 1/32' and 1' 1/64' and 1' 1/128' and 1' 1/256' and 1' 1/512' and 1' 1/1024' and 1' 1/2048' and 1' 1/4096' and 1' 1/8192' and 1' 1/16384' and 1' 1/32768' and 1' 1/65536' and 1' 1/131072' and 1' 1/262144' and 1' 1/524288' and 1' 1/1048576' and 1' 1/2097152' and 1' 1/4194304' and 1' 1/8388608' and 1' 1/16777216' and 1' 1/33554432' and 1' 1/67108864' and 1' 1/134217728' and 1' 1/268435456' and 1' 1/536870912' and 1' 1/1073741824' and 1' 1/2147483648' and 1' 1/4294967296' and 1' 1/8589934592' and 1' 1/17179869184' and 1' 1/34359738368' and 1' 1/68719476736' and 1' 1/137438953472' and 1' 1/274877906944' and 1' 1/549755813888' and 1' 1/1099511627776' and 1' 1/2199023255552' and 1' 1/4398046511104' and 1' 1/8796093022208' and 1' 1/17592186044416' and 1' 1/35184372088832' and 1' 1/70368744177664' and 1' 1/140737488355328' and 1' 1/281474976710656' and 1' 1/562949953421312' and 1' 1/1125899906842624' and 1' 1/2251799813685248' and 1' 1/4503599627370496' and 1' 1/9007199254740992' and 1' 1/18014398509481984' and 1' 1/36028797018963968' and 1' 1/72057594037927936' and 1' 1/144115188075855872' and 1' 1/288230376151711744' and 1' 1/576460752303423488' and 1' 1/1152921504606846976' and 1' 1/2305843009213693952' and 1' 1/4611686018427387904' and 1' 1/9223372036854775808' and 1' 1/18446744073709551616' and 1' 1/36893488147419103232' and 1' 1/73786976294838206464' and 1' 1/147573952589676412928' and 1' 1/295147905179352825856' and 1' 1/590295810358705651712' and 1' 1/1180591620717411303424' and 1' 1/2361183241434822606848' and 1' 1/4722366482869645213696' and 1' 1/9444732965739290427392' and 1' 1/18889465931478580854784' and 1' 1/37778931862957161709568' and 1' 1/75557863725914323419136' and 1' 1/151115727451828646838272' and 1' 1/302231454903657293676544' and 1' 1/604462909807314587353088' and 1' 1/1208925819614629174706176' and 1' 1/2417851639229258349412352' and 1' 1/4835703278458516698824704' and 1' 1/9671406556917033397649408' and 1' 1/19342813113834066795298816' and 1' 1/38685626227668133590597632' and 1' 1/77371252455336267181195264' and 1' 1/154742504910672534362390528' and 1' 1/309485009821345068724781056' and 1' 1/618970019642690137449562112' and 1' 1/1237940039285380274899124224' and 1' 1/2475880078570760549798248448' and 1' 1/4951760157141521099596496896' and 1' 1/9903520314283042199192993792' and 1' 1/19807040628566084398385987584' and 1' 1/39614081257132168796771975168' and 1' 1/79228162514264337593543950336' and 1' 1/158456325028528675187087900672' and 1' 1/316912650057057350374175801344' and 1' 1/633825300114114700748351602688' and 1' 1/1267650600228229401496703205376' and 1' 1/2535301200456458802993406410752' and 1' 1/5070602400912917605986812821504' and 1' 1/10141204801825835211973625643008' and 1' 1/20282409603651670423947251286016' and 1' 1/40564819207303340847894502572032' and 1' 1/81129638414606681695789005144064' and 1' 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No. of Blades each Propeller *4* Fitted or Solid? *Solid*
 Material of Blades *Manganese Bronze* Boss *Manganese Bronze*
 Diam. of Propellers *7'-3"* Pitch *7'-3"* Surface (each) *20* S. ft.
 Coefficient of Displacement of Vessel at $\frac{1}{2}$ Moulded Depth *66*

Crank Shafts Forged by *Bow No. 1* ? Material *Forged Steel*
 " Pins " " " " " "
 " Webs " " " " " "
 Thrust Shafts " " " " " "
 Intermed. " " " " " "
 Propeller " *Not Available* " " " "
 Crank " Finished by *Bow No. 1* ?
 Thrust " " " " " "
 Intermed. " " " " " "
 Propeller " " " " " "

STAMP MARKS ON SHAFTS.

Tail Shaft: Port. *Leopds 4740 CM 17/7 18*
 " " Starboard " *4740 CM 17/7 18*
 Intermediate Shafting *Leopds 3564-5, 12-11-17 W.G.M. F.F.F.*
 Crank Shaft Port *Leopds W.G.M. 12-2-18 3564.*
 " " Starboard " " *12-2-18 3565.*

1 Crank. Shaft. 1 Thrust 3 Tunnel. and.
 1 Tail Shaft. MARKER B.C. No 5629 T.L. 27-11-23

SKETCH OF PROPELLER SHAFT.

Similar to Twin Screw Winch Shafts.

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PUMPS, ETC.

No. of Air Pumps **2** Diar. **$9\frac{1}{2} \times 17$ "** Stroke **12"**

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

No. of Circulating Pumps **2** Diar. **$5\frac{1}{2}$ "** Stroke **$4\frac{1}{2}$ "**

Type of " **Drysdale Open Type.**

Diar. of " Suction from Sea **$8\frac{1}{2}$ "**

Has each Pump a Bilge Suction with Non-return Valve? **Yes** Diar. **8"**

What other Pumps can circulate through Condenser? **None**

No. of Feed Pumps on Main Engine **None** Diar. **-** Stroke **-**

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

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

No. of Independent Feed Pumps **3** Diar. **$7\frac{3}{4} \times 5\frac{1}{2}$ "** Stroke **12"**

What other Pumps can feed the Boilers? **No other**

No. of Bilge Pumps on Main Engine **None** Diar. **-** Stroke **-**

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

No. of Independent Bilge Pumps **2**

What other Pumps can draw from the Bilges? **Downer 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? **Both**

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**

2 - Weir Air Pumps

1 Bilge & Sanitary Pump. Weir's

1 Bilge & Ballast

2 Centrifugal Pump Open type Drysdale

3 Weirs Feed Pumps

1 Gravitation Filter Carrick's

1 Feed Heater Kerr's

1 Evaporator

1 Fresh Water Pump

2 - Oil Fuel Pumps H. & W. Wallend



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BOILERS.

Works No. 1017 - 1018

No. of Boilers 2 Type Yarrow Water Tube

Single or Double ended Single

No. of Furnaces in each 3

Type of Furnaces Common, Wallsend Horizontal

Date when Plan approved System of Oil Fuel

Approved Working Pressure 200 lbs

Hydraulic Test Pressure 350 "

✓ Date of Hydraulic Test 9/4/24

✓ " when Safety Valves set 28-4-24

Pressure at which Valves were set 200 lbs.

✓ Date of Accumulation Test 28/4/24

Maximum Pressure under Accumulation Test 2 lbs. = 202 lbs.

System of Draught Howden's Forced.

Can Boilers be worked separately? yes.

Makers of Plates

" Stay Bars Not Available

" Rivets

" Furnaces

Greatest Internal Diam. of Boilers Steam Drums 4'-2" Dia. Water Drums 2'6"

" " Length " 10'-11"

Square Feet of Heating Surface each Boiler 3500.

" " Grate " "

No. of Safety Valves each Boiler 2 Rule Diam. ~~2 1/4~~ 3 1/4 = 2/3 of the area required for ordinary lift valves. Actual 3" HIGH LIFT.

Are the Safety Valves fitted with Easing Gear? yes.

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

" Test Cocks " " Salinometer Cocks 3/8 bore.

BOILER TEST MARK.

B. C. TEST.

No. 3240

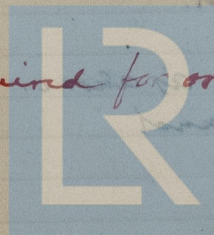
T.P. 350

W.P. 200

T.L. 3

9-4-24

These boilers are fitted for burning
Oil Fuel. by the Wallsend Horizontal
system.



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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?

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?

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

1/2"

inside

1/2"

Are Longitudinal Seams Hand or Machine Riveted?

Are they Single, Double, or Treble Riveted?

No. of Rivets in a Pitch

5

Diam. of Rivet Holes

Pitch

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

Steam Drum 2 Water 1.

Are these Seams Hand or Machine riveted?

Hand.

Diam. of Rivet Holes

Pitch

No. of Rows of Rivets in Back End Circumferential Seams

as above

Are these Seams Hand or Machine Riveted?

Hand.

Diam. of Rivet Holes

Pitch

Size of Manholes in Shell

18 x 14

Dimensions of Compensating Rings

Thickness of End Plates in Steam Space Approved

in Boilers

Pitch of Steam Space Straps

Diam. of Rivet Holes

in Boilers

Material of

How are Straps Secured?

Diam. and Thickness of Loose Wrenches on End Plates

Riveted

Double Straps

Thickness of Middle Back End Plates Approved

in Boilers

Thickness of Doublings in Wide Spaces between Flanges

Pitch of Straps

Diam. of Straps Approved

in Boilers

Material of

Are Straps fitted with Nuts outside?

Thickness of Back End Plates at Bottom Approved

in Boilers

Pitch of Straps as Wide Spaces between Flanges

Thickness of Doublings in

Thickness of Front End Plates at Bottom Approved

in Boilers

No. of Longitudinal Straps in Spaces between Flanges



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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

Thickness of End Plates

Diar. of Stays Approved

" " " " in Boilers

Material "

Thickness of Front End 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 End Plates Approved

" " " " in Boilers

Pitch of Stay Tubes in Back End Plates

" " " " "

Thickness of Stay Tubes

" " " " "

Material 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)

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Diar. of Stays Approved Threads per Inch

" " in Boilers

Material "

Thickness of Front Tube Plates Approved

" " " " in Boilers

Pitch of Stay Tubes at Spaces between Stacks of Tubes

Thickness of Doublings in " " "

" Stay Tubes at " " "

Are Stay Tubes fitted with Nuts at Front End?

Thickness of Back Tube Plates Approved

" " " in Boilers

Pitch of Stay Tubes in Back Tube Plates

" Plain "

Thickness of Stay Tubes

" Plain "

External Diar. of Tubes

Material "

Thickness of Furnace Plates Approved

" " " in Boilers

Smallest outside Diar. of Furnaces

Length between Tube Plates

Width of Combustion Chambers (Front to Back)

Thickness of " " Tops Approved

" " " in Boilers

Pitch of Screwed Stays in C.O. Tops

Diag. of Screwed Stays Approved Threads per Inch

" " " in Boilers

Material "

Thickness of Combustion Chamber Heads Approved

" " " in Boilers

Pitch of Screwed Stays in C.O. Heads

Diag. " " Approved Threads per Inch

" " " in Boilers

Material "

Thickness of Combustion Chamber Heads Approved

" " " in Boilers

Pitch of Screwed Stays in C.O. Heads

Diag. " " Approved Threads per Inch

" " " in Boilers

Material "

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

Thickness of Combustion Chamber Bottoms

No. of Girders over each Wing Chamber

" Centre "

Length and Thickness of Girders

Material of Girders

No. of Stays in each

No. of Tubes each Boiler

Size of Tubes



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Diar. of Screwed Stays Approved Threads per Inch

" " " in Boilers

Material " "

Thickness of Combustion Chamber Sides Approved

" " " " in Boilers

Pitch of Screwed Stays in C.O. Sides

Diar. " " Approved Threads per Inch

" " " in Boilers

Material " "

Thickness of Combustion Chamber Backs Approved

" " " " in Boilers

Pitch of Screwed Stays in C.O. Backs

Diar. " " Approved Threads per Inch

" " " in Boilers

Material " "

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

Thickness of Combustion Chamber Bottoms

No. of Girders over each Wing Chamber

" " " Centre "

Depth and Thickness of Girders

Material of Girders

No. of Stays in each

No. of Tubes, each Boiler

Size of Lower Manholes

VERTICAL DONKEY BOILERS.

No. of Boilers
Type
Height of Boiler Crown above Fire Grate
Are Boiler Crowns Flat or Dished?
Internal Radius of Dished Boilers
Description of Beams in Boiler Crown
Diar. of River Boilers
Height of Firebox Crown above Fire Grate
Are Firebox Crowns Flat or Dished?
External Radius of Dished Crowns
No. of Crown Stays
Diar.
Internal Diar. of Firebox at Top
No. of Water Tubes
Material of Water Tubes
Size of Manhole in Shell
Description of Combustion Grate
Heating surface each boiler
Grate surface

SUPERHEATERS

Description of Superheaters

Where situated?

Which boilers are connected to superheaters?
Can superheaters be used off while boilers are working?

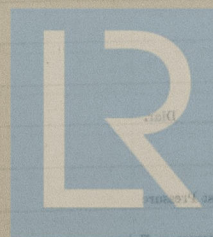
No. of Safety Valves on each superheater

Are " " fitted with Exhaust Valves?

Date of Hydraulic Test

Date when Boiler was tested

Pressure on Valves



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VERTICAL DONKEY BOILERS.

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

SUPERHEATERS.

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

MAIN STEAM PIPES

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

Total No. 8 STEEL L W PIPES



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MAIN STEAM PIPES.

No. of Lengths	86	2	2
Material	Steel	St. Copper	Steel
Brazed, Welded or Seamless	Lap Welded	Seamless	Lap Welded.
Internal Diam.	5"	4 1/2"	4 1/2"
Thickness	1/4"		1/4"
How are Flanges secured?	Screwed & Expanded		
Date of Hydraulic Test	16-4-24	8-4-24	18-4-24.
Test Pressure	600	400	600

TOTAL NO. 8 STEEL. L.W. PIPES.

No. of Lengths

Material

Brazed, Welded or Seamless

Internal Diam.

Thickness

How are Flanges secured?

Date of Hydraulic Test

Test Pressure

No. of Lengths

Material

Brazed, Welded or Seamless

Internal Diam.

Thickness

How are Flanges secured?

Date of Hydraulic Test

Test Pressure

STEAM EVAPORATORS.

No.	1		
Type	Horizontal		
Material	Steel		
Working Pressure	80		
Date of Test of Safety Valves under Steam	28-4-24		
Test Pressure	80		
Date of Test	28-4-24		

FEED WATER HEATERS.

No.	1		
Type	Horizontal		
Material	Steel		
Working Pressure	80		
Date of Test of Safety Valves under Steam	28-4-24		
Test Pressure	80		
Date of Test	28-4-24		

FEED WATER FILTERS.

No.	1		
Type	Horizontal		
Material	Steel		
Working Pressure	80		
Date of Test of Safety Valves under Steam	28-4-24		
Test Pressure	80		
Date of Test	28-4-24		



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FEED WATER HEATERS

FEED WATER FILTERS.

No. *one* Type *Caravatin* Size *10*
Makers *Caravatin*
Working Pressure *1000* Test Pressure *1000* Date of Test *10/10/10*

[illegible]

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REFRIGERATORS.

No. of Machines *2* Capacity of each *2* No. of Cylinders *2*
 Makers *W. J. & Co. Ltd.*
 Description *W. J. & Co. Ltd. 1800*
 No. of Steam Cylinders, each Machine *2* No. of Compressors *2* No. of Cranks *2*
 Particulars of Pumps in connection with Refrigerating Plant and whether worked by Refrigerating Machines or Independently
1. 1800 2. 1800 3. 1800 4. 1800 5. 1800 6. 1800 7. 1800 8. 1800 9. 1800 10. 1800 11. 1800 12. 1800
 Other Appliances of Machine
1. 1800 2. 1800 3. 1800 4. 1800 5. 1800 6. 1800 7. 1800 8. 1800 9. 1800 10. 1800 11. 1800 12. 1800
 System of Refrigeration *Food water Filter (Cages)*
 " Insulation *Exhaustor & Distilling Plant*
 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.
1. 1800	28	28	10	2.50
2. 1800	28	28	10	2.50
3. 1800	28	28	10	2.50
4. 1800	28	28	10	2.50
5. 1800	28	28	10	2.50
6. 1800	28	28	10	2.50
7. 1800	28	28	10	2.50
8. 1800	28	28	10	2.50
9. 1800	28	28	10	2.50
10. 1800	28	28	10	2.50
11. 1800	28	28	10	2.50
12. 1800	28	28	10	2.50

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



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ELECTRIC LIGHTING.

Installation Fitted by *Booster Construction Co Ltd*
 No. and Description of Dynamos *2 Compound Wound 4 Pole*
 Makers of Dynamos *Phoenix Dynamo & Motor Manufacturing Co.*
 Capacity " *116* Amperes at *105* Volts, — Revols. per Min. *500*
 Current Alternating or Continuous *Continuous*
 Single or Double Wire System *Double Wire*
 Position of Dynamos *Eng. Room aft Port & Starboard*
 " Main Switch Board *Eng. Bulkhead aft. above Main Deck*
 No. of Circuits to which Switches are provided on Main Switch Board *10*

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.
	32	25					2.500
Engin. Room Starboard	7	16	14	7/036.			megohms
	4	300					
Navigation	2	32	7.5	7/036.			600
	26	25					megohms
Promenade deck	4 Radiators	25	20	7/048			Grade
Upper deck Starboard	46	25	13	7/048			
" " Port	49	25	15	7/048			
Main Deck and upper	28	25	8.5	7/036			
Forward	30	25	9	7/036.			
Main deck aft	37	25	11	7/036.			
Radiators	9		45	19/036.			
Projector	1			19/036.			Projector Not Used
Fans	2			2/036.			
				7/18			

Total No. of Lights *254* No. of Motors driving Fans, &c. *2* No. of Heaters *13*

Current required for Motors and Heaters

500 Amps.

Positions of Auxilliary Switch Boards, with No. of Switches on each (1) Off-Engine Room Bulkhead

Positions of Auxiliary Switch Boards, with No. of Switches on each (1) Aft Engine Room Bulkhead
above main deck. Star Side (2) aft End wheel house 12
(3) aft End wheel house B (4) Star Side midship Entrance
upper deck. 10 (5) Port Side midship Entrance upper
deck 10 (6) Starrd Passage outside Engine Room 6
Starrd Passage Forward 7 (7) Port Passage
outside Galley 8
Lans have separate fuses & starters at
side of main switch board.

General Remarks	Dimensions of Cables	Number of Cables	Material of Cables	Material of Cables	Material of Cables	Material of Cables	Material of Cables
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. 18 S.W.G., Largest, No. 16 S.W.G.							
How are Conductors in Engine and Boiler Spaces protected							
" Saloons, State Rooms, &c., "							
What special protection is provided in the following cases?—							
(1) Conductors exposed to Heat or Damp							
(2) " " passing through Bunkers or Cargo Spaces							
(3) " " Deck Beams or Bulkheads							

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

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? distab evig Jon 11

Are the Dynamos, Motors, Main and Branch Cables, so placed that the Compasses are not injuriously affected by them? *Yes*

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

Has the Insulation Resistance over the whole system been tested?

What does the Resistance amount to?

Is the Installation supplied with a Voltmeter? 2 Voltmeters

" " " an Ampere Meter? 2 Ampere meters

Date of Trial of complete Installation *2nd May 24* Duration of Trial *6 hours*

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

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 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.

LADY ALEXANDRA.

as ascertained by ^{me} from personal examination

J. H. Laurie.

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

Fees—

MAIN BOILERS.

	£	s.	d.
H.S. 7000 Sq. ft.	:	:	:

G.S. 130 (COAL)	:	:	:
-----------------	---	---	---

DONKEY BOILERS.

H.S.	Sq. ft.	:	:
------	---------	---	---

G.S.	"	:	:
------	---	---	---

£	:	:
---	---	---

ENGINES.

L.P.O. 11.03.	Cub. ft.	:	:
---------------	----------	---	---

£	:	:
---	---	---

Testing, &c. ...	:	:
------------------	---	---

£	:	:
---	---	---

Expenses ...	:	:
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Total ... £	:	:
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It is submitted that this Report be approved,

W. H. King
Chief Surveyor.

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

28th May 1924

Fees advised

Fees paid



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Secretary.

NOTIFICATION

Fees—

MAIN HOMES.

H.S. 7000

Sp. R.

DOKERY HOMES.

H.S.

Sp. R.

H.S.

Sp. R.

H.S.

Sp. R.

H.S.

Sp. R.

H.S.

Sp. R.

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Sp. R.

H.S.

Sp. R.

H.S.

Sp. R.

It is submitted that this Report be approved.

The above has been read and approved by the Committee for the Class of M.B.S. on the 14th day of June 1900.

Approved by the Committee for the Class of M.B.S. on the 14th day of June 1900.

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