

No. 2015

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. 1248 No. in Register Book 2475

S.S. "LADY CYNTHIA"

Makers of Engines ROSS & DUNCAN LTD

Works No. 1049-50

Makers of Main Boilers GALLOWAYS LTD

Works No. -

Makers of Donkey Boiler -

Works No. -

MACHINERY.



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014961-24973-0115

No.

THE BRITISH CORPORATION FOR THE SURVEY

AND

REGISTRY OF SHIPPING.

Report No. 1248 No. in Register Book 2475

Received at Head Office 31st July 1925

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

Official No.

Port of Registry VANCOUVER

Registered Owners

THE UNION STEAMSHIP CO LTD OF
BRITISH COLUMBIA

Engines Built by

ROSS & DUNCAN LTD

at

GLASGOW 12/1919

Main Boilers Built by

GALLOWAYS LTD

at

MANCHESTER 12/1919

Donkey

at

Date of Completion

3-7-25

First Visit

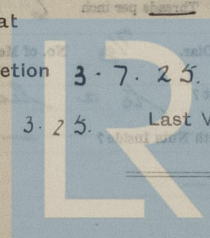
3-25

Last Visit

2-7-25

Total Visits

22



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RECIPROCATING ENGINES.

Works No. 1049-50 No. of Sets Description

Lipex Expansion Surface Condensing

No. of Cylinders each Engine

No. of Cranks

Diams of Cylinders

Stroke

Cubic feet in each L.P. Cylinder

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

" " " each Receiver?

Type of H.P. Valves,

" 1st L.P. "

" 2nd L.P. "

" L.P. "

" Valve Gear

" Condenser

Diameter of Piston Rods (plain part)

Screwed part (bottom of thread)

Material

Diar. of Connecting Rods (smallest part)

Material

" Crosshead Gudgeons

Length of Bearing

Material

No. of Crosshead Bolts (each)

Diar. over Thrd.

2" Thrds. per inch

Material

" Crank Pin "

" "

" "

" "

" "

" Main Bearings

Lengths

12"-11"-10"¹³/₁₆

" Bolts in each

Diar. over Thread

1³/₄ Threads per inch

Material

" Holding Down Bolts, each Engine

Diar.

7/8

No. of Metal Chocks

67

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

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

If not, how are they fitted?

Connecting Rods, Forged by

DENNY & CO DUMBARTON

Piston

Do.

Crossheads,

SOLID WITH PISTON RODS.

Connecting Rods, Finished by

ROSS & DUNCAN.

Piston

Do.

Crossheads,

Do.

Date of Harbour Trial

24-6-25.

" Trial Trip

2-7-25

Trials run at

off Aberdeen - North Sea -

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

yes.

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

Revs. per min.

Pressure in 1st H.P. Receiver

140
135

lbs., 2nd L.P.,

35
30

lbs., L.P., 2 1/2"

Revs. per min.

218
23
25 1/2

Speed on Trial

13.5

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

OIL HEATED TO

210° FAHRENHEIT

100 lbs PRESSURE

TAMPICO OIL. 9035G.

FAN PRESSURE 34".



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TURBINE ENGINES.

Works No. _____ Type of Turbines _____

No. of H.P. Turbines _____ No. of I.P. _____ No. of L.P. _____ No. of Stern _____

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

Is Single or Double Reduction Gear employed? _____

Diam. of 1st Reduction Pinion _____ Width _____ Pitch of Teeth _____

" 1st " Wheel _____

Estimated Pressure per lineal inch _____

Diam. of 2nd Reduction Pinion _____ Width _____ Pitch of Teeth _____

" 2nd " Wheel _____

Estimated Pressure per lineal inch _____

Revol. per min. of H.P. Turbines at Full Power _____ S.H.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 Revol. 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 _____

Revol. 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 Revol. per min. _____ S.H.P. _____



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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.

Type of Turbine No. of Turbine Shafts at bottom of Collar
 Diam. of Turbine Shaft at bottom of Collar
 Forward Coupling
 At Air Coupling
 No. of Collars
 Diam. of Intermediate Shafting by Rule
 No. of Bolts each Coupling
 Diam. at Mid Length
 Diam. of Propeller Shafts by Rule
 At Couplings
 Actual
 Are Propeller Shafts fitted with Continuous Thrust Lines?
 Diam. over Thrust
 Of what Material are the After Bearings composed?
 Are Means provided for lubricating the After Bearings with Oil?
 To prevent Sea Water entering the After Bearings?
 If so what is the Method?

SHAFTING.

Are the Crank Shafts Built or Solid?

Solid

No. of Lengths in each

1924. *6.72* *One*

Angle of Cranks

120°

Diar. by Rule

6.19

Actual

6 3/4"

In Way of Webs

" of Crank Pins

7 1/4

Length between Webs

12 1/4"

Greatest Width of Crank Webs

8"

Thickness

4 3/8"

Least

"

"

8"

"

"

Diar. of Keys in Crank Webs

-

Length

-

" Dowels in Crank Pins

-

Length

Screwed or Plain

-

No. of Bolts each Coupling

6

Diar. at Mid Length

1 1/8"

Diar. of Pitch Circle

10 5/8"

Greatest Distance from Edge of Main Bearing to Crank Web

1 1/8"

Type of Thrust Blocks

Horse Shoe Type

No. " Rings

6

Diar. of Thrust Shafts at bottom of Collars

6 3/4"

No. of Collars

5

" " Forward Coupling

-

6 3/4"

At Aft Coupling

6 3/4"

Diar. of Intermediate Shafting by Rule

6.4"

Actual

6 1/2"

No. of Lengths

3 each

No. of Bolts, each Coupling

6

Diar. at Mid Length

1 1/8"

Diar. of Pitch Circle

10 5/8"

Diar. of Propeller Shafts by Rule

6.25"

Actual

7 1/4"

At Couplings

7 1/4"

Are Propeller Shafts fitted with Continuous Brass Liners?

*No**2 liners on each shaft.*

Diar. over Liners

8 1/2" 8 3/8"

Length of After Bearings

3'-10"

Of what Material are the After Bearings composed?

Gun Metal lined with Linum

Are Means provided for lubricating the After Bearings with Oil?

*No**in A Bracket*

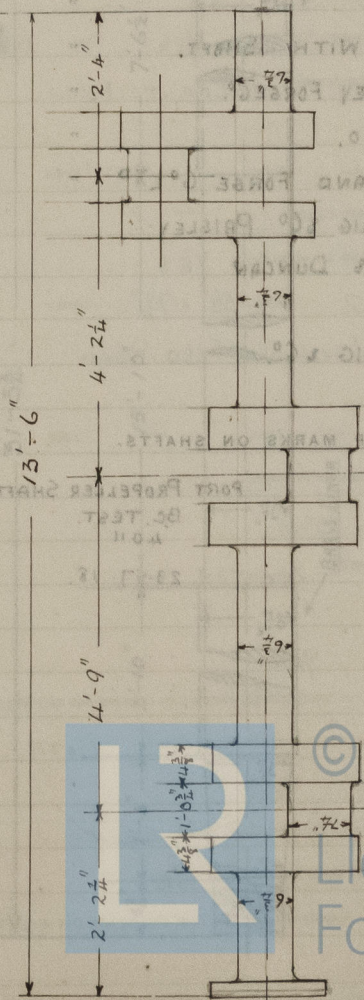
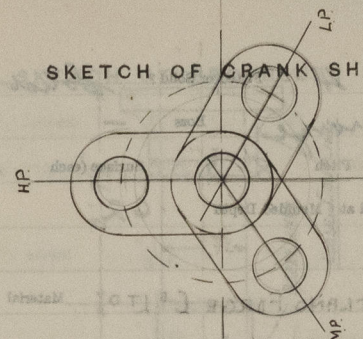
" " to prevent Sea Water entering the Stern Tubes?

-

No

If so, what Type is adopted?

SKETCH OF CRANK SHAFT.



BALANCE WEIGHTS FITTED TO ALL CRANKS

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No. of Blades each Propeller

4

Fitted or Solid?

Solid

Material of Blades

Brass

Boss

—

Diam. of Propellers

6'-6"

Pitch

8'-3"

Surface (each)

2/8

S. ft.

Coefficient of Displacement of Vessel at 3/4 Moulded Depth

.62

Crank Shafts Forged by

PORTLAND FORGE CO LTD

Material

STEEL

" Pins

"

" Webs

"

SOLID WITH SHAFT.

Thrust Shafts

"

LANGLEY FORGE CO.

Intermed., "

"

DO.

Propeller "

"

PORTLAND FORGE CO LTD

Crank " Finished by

A.F. CRAIG & CO PAISLEY.

Thrust "

"

ROSS & DUNCAN

Intermed., "

"

Propeller "

"

AF CRAIG & CO.

STAMP MARKS ON SHAFTS.

STAR PROPELLER SHAFT.

EX TSS "CHEAM"

BC

N° 5709

O

15-3-19.

PORT PROPELLER SHAFT

BC. TEST.

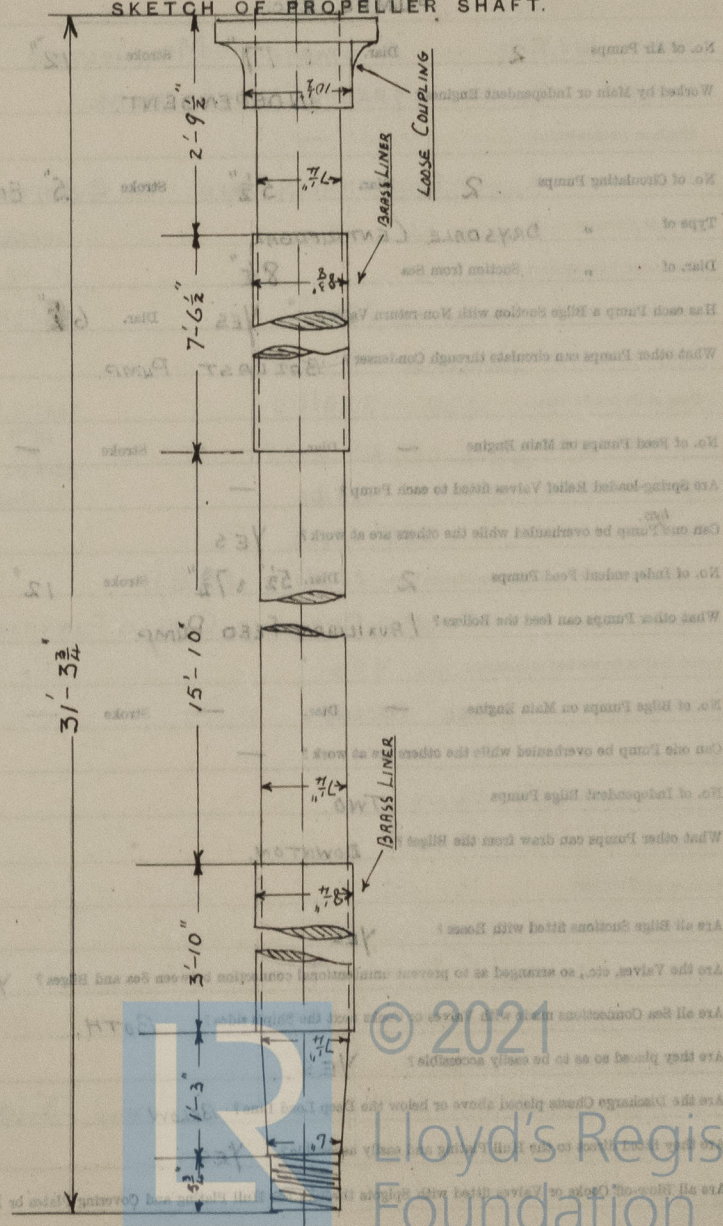
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JOB N°

1047.

23-7-18.

SKETCH OF PROPELLER SHAFT.



PUMPS, ETC.

No. of Air Pumps 2 Diar. 17" Stroke 12"

Worked by Main or Independent Engines? INDEPENDENT.

No. of Circulating Pumps 2 Diar. 5½" Stroke 5" ENGINE

Type of " DRYSDALE CENTRIFUGAL

Diar. of " Suction from Sea 8½"

Has each Pump a Bilge Suction with Non-return Valve? YES Diar. 6½"

What other Pumps can circulate through Condenser? BALLAST PUMP.

No. of Feed Pumps on Main Engine — Diar. — Stroke —

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

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

No. of Independent Feed Pumps 2 Diar. 5½" & 7¾" Stroke 12"

What other Pumps can feed the Boilers? AUXILIARY FEED PUMP.

No. of Bilge Pumps on Main Engine — Diar. — Stroke —

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

No. of Independent Bilge Pumps TWO.

What other Pumps can draw from the Bilges? DOWNTON.

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.

BOILERS

MANCHESTER

WATER TUBE

TESTED

TEST

TEST

TEST

TEST

TEST

TEST

TEST

TEST

TEST

TEST

TEST

TEST

TEST

TEST

TEST

TEST

TEST

TEST

TEST

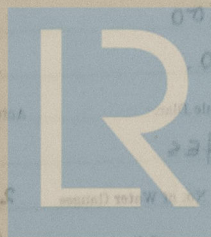
TEST

TEST

TEST

TEST

TEST



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BOILERS.

Works No. 14027. GALLOWAY LTD MANCHESTER
 No. of Boilers 2. Type YARROW WATER TUBE.
 Single or Double-ended —
 No. of Furnaces in each EXTERNALLY FIRED. OIL BURNING.
 Type of Furnaces —
 Date when Plan approved —
 Approved Working Pressure 200 lbs.
 Hydraulic Test Pressure 30.4.25
 Date of Hydraulic Test 350 lbs
 „ when Safety Valves set 25.6.25.
 Pressure at which Valves were set 200 lbs.
 Date of Accumulation Test 225.6.25.
 Maximum Pressure under Accumulation Test 225 lbs 222 lbs.
 System of Draught FORCED DRAUGHT CLOSED FURNACES.
 Can Boilers be worked separately? YES
 Makers of Plates SEE RECORDS
 „ Stay Bars „
 „ Rivets „
 „ Furnaces „
 Greatest Internal Diam. of Boilers
 „ „ Length „
 Square Feet of Heating Surface each Boiler 3500
 „ „ Grate „ 60.
 No. of Safety Valves each Boiler 2 Rule Diam. Actual 3" M.L.
 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 1

FIRST TEST.

LR TEST
 FORD N° 36.
 F.R.
 BOILER. 353 lbs
 23.12.18.
 APT. LR TEST
 N° 41
 F.R.
 BOILER. 353 lbs
 24.12.18

SECOND TEST

BC TEST

N° 4910.

TP 350 lbs

WP 200 lbs

R.L.G.

30.4.25.



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Are the Water Gauges fitted direct to the Boiler Shells or mounted on Pillars? *Pillars Direct To Drums*

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? *Cocks.*

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 Pitch

No. of Rows of Rivets in Centre Circumferential Seams

Are these Seams Hand or Machine Riveted?

Diar. of Rivet Holes Pitch

No. of Rows of Rivets in Front End Circumferential Seams

Are these Seams Hand or Machine riveted?

Diar. of Rivet Holes Pitch

No. of Rows of Rivets in Back End Circumferential Seams

Are these Seams Hand or Machine Riveted?

Diar. of Rivet Holes Pitch

Size of Manholes in Shell

Dimensions of Compensating Rings

Thickness of End Plates in Steam Space Approved

" " in Boilers

Pitch of Steam Space Strake

Diar. " " Approved

" " in Boilers

Material of " " "

How are Straps Secured?

Lean and Thickness of Loose Washers on End Plates

" " Divided

Within " " Doubling Straps

Thickness of Middle Back End Plates Approved

" " in Boilers

Thickness of Doublings in Wide Spaces between Firebricks

Pitch of Straps at

Diar. of Straps Approved

" " in Boilers

Material " "

Are Straps fixed with Nuts outside?

Thickness of Back End Plates at Bottom Approved

" " in Boilers

Pitch of Straps at Wide spaces between Firebricks

Thickness of Doublings at

Thickness of Front End Plates at Bottom Approved

" " in Boilers

No. of Longitudinal Straps in Space between Firebricks



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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

Threads per Inch

Dist. of Stay 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

" " " " Plain

Thickness of Stay Tubes

" " " " Plain

External Dist. of Tubes

Material

Thickness of Furnace Plates Approved

" " " " in Boilers

Smallest outside Dist. of Furnaces

Length between Tube Plates

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With at Comparison Columns (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.C. Tops

Diag. of Screwed Stays Approved Threads per Inch

" " " in Boilers

Material " " " "

Thickness of Combustion Chamber Tops Approved

" " " in Boilers

Pitch of Screwed Stays in C.C. Tops

Diag. " " " Approved Threads per Inch

" " " in Boilers

Material " " " "

Thickness of Combustion Chamber Backs Approved

" " " in Boilers

Pitch of Screwed Stays in C.C. Backs

Diag. " " " Approved Threads per Inch

" " " in Boilers

Material " " " "

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

Thickness of Combustion Chamber Bottoms

No. of Girders over each firing Chamber

" " " " " " " "

Depth and Thickness of Girders

Material of Girders

No. of Stays in each

No. of Tubes, each Boiler

Size of Tubes, each Boiler

Size of Tubes, each Boiler



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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
Greatest Int. Diam.	Height
Height of Boiler Crown above Fire Grate	Are Boiler Crowns Flat or Dished?
External Radius of Dished Ends	Thickness of Plates
Description of Beams in Boiler Crowns	Width of Overlap
Diam. of Rivet Holes	Pitch
Height of Firebox Crown above Fire Grate	Are Firebox Crowns Flat or Dished?
External Radius of Dished Crowns	Thickness of Plates
No. of Crown Stays	Material
External Diam. of Firebox at Top	Thickness of Plates
No. of Water Tubes	Ext. Diam.
Material of Water Tubes	
Size of Manhole in Shell	
Description of Compensation 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 Blasing Gear? —

Date of Hydraulic Test — Test Pressure —

Date when Safety Valves set — Pressure on Valves —

MAIN STEAM PIPES.

No. of Pipes —

Material —

Internal Diar. —

Thickness —

How are Pipes secured? —

Date of Hydraulic Test —

Test Pressure —

No. of Pipes —

Material —

Internal Diar. —

Thickness —

How are Pipes secured? —

Date of Hydraulic Test —

Test Pressure —



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MAIN STEAM PIPES.

No. of Lengths	9.
Material	STEEL
Brazed, Welded or Seamless	L.W.
Internal Diam.	4 1/2"
Thickness	1 1/4"
How are Flanges secured?	SCREWED & EXPANDED.
Date of Hydraulic Test	28.8.19 & 12.9.19. WHEN NEW.
Test Pressure	600 lbs 30.4.25.

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

SUPERHEATERS.

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

ECONOMIZERS.

No. of Lengths	ONE
Material	STEEL
Brazed, Welded or Seamless	L.W.
Internal Diam.	4 1/2"
Thickness	1 1/4"
How are Flanges secured?	SCREWED & EXPANDED.
Date of Hydraulic Test	28.8.19 & 12.9.19. WHEN NEW.
Test Pressure	600 lbs 30.4.25.

No. of Lengths	ONE
Material	STEEL
Brazed, Welded or Seamless	L.W.
Internal Diam.	4 1/2"
Thickness	1 1/4"
How are Flanges secured?	SCREWED & EXPANDED.
Date of Hydraulic Test	28.8.19 & 12.9.19. WHEN NEW.
Test Pressure	600 lbs 30.4.25.

No. of Lengths	ONE
Material	STEEL
Brazed, Welded or Seamless	L.W.
Internal Diam.	4 1/2"
Thickness	1 1/4"
How are Flanges secured?	SCREWED & EXPANDED.
Date of Hydraulic Test	28.8.19 & 12.9.19. WHEN NEW.
Test Pressure	600 lbs 30.4.25.

No. of Lengths	ONE
Material	STEEL
Brazed, Welded or Seamless	L.W.
Internal Diam.	4 1/2"
Thickness	1 1/4"
How are Flanges secured?	SCREWED & EXPANDED.
Date of Hydraulic Test	28.8.19 & 12.9.19. WHEN NEW.
Test Pressure	600 lbs 30.4.25.

No. of Lengths	ONE
Material	STEEL
Brazed, Welded or Seamless	L.W.
Internal Diam.	4 1/2"
Thickness	1 1/4"
How are Flanges secured?	SCREWED & EXPANDED.
Date of Hydraulic Test	28.8.19 & 12.9.19. WHEN NEW.
Test Pressure	600 lbs 30.4.25.



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MALE EVAPORATORS.

No. ONE Type Quiggins. 30 Tons per Day
 Makers LIVERPOOL ENGINEERING CO LTD
 Working Pressure 200 lbs. Test Pressure 50 lbs. SHELL Date of Test 18-6-25.
400 lbs COILS.
 Date of Test of Safety Valves under Steam 1-7-25.

FEED WATER HEATERS.

No. ONE Type SURFACE
 Makers CAIRD & RAYNOR.
 Working Pressure 200 lbs. Test Pressure 50 lbs. Body. Date of Test 26-2-25.
480 lbs COILS

FEED WATER FILTERS.

No. ONE Type GRAVITATION TWIN. Size 3 1/2'
 Makers J.H. CARRUTHERS & CO LTD
 Working Pressure ATMOS. Test Pressure W.P. Date of Test 2-7-25.

LIST OF DONKEY PUMPS.

BALLOAST PUMP G & T WEIR. STAR.
 SUCTION IND. BILGE, BILGE MAIN, SEA.
 DISCHARGE FIRE MAIN, OVERBOARD HOSE CONDENSERS.
BILGE PUMP: CARRUTHERS. NO 5873 PORT.
 SUCTION SEA SAVEDS P.B.S. BILGE MAIN. ENG ROOM BILGE
 DISCHARGE FIRE MAIN. OVERBOARD, SANITARY.
AIR PUMPS (2) G & T WEIR.
CIR. PUMPS (2) DRYSDALE.
FEED PUMPS (2) G & T WEIR.
AUX FEED (1) " " "
FAN ENGINES HOWDENS. FAN 72" DIA. ENGINE 6" x 5"
OIL FUEL UNITS. WALLSEND HOWDEN. TODD'S BURNERS.

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SPARE GEAR LIST

No. of Top End Bolts. 2	No. of Bot. End Bolts. 2	No. of Cylinder Cover Studs. 6
" Coupling Bolts 6	" Main Bearing Bolts 2	" Valve Chest "
" Junk Ring Bolts 6	" Feed Pump Valves	" Bilge Pump Valves
" H.P. Piston Rings 1 set	" I.P. Piston Rings 1 set	" L.P. Piston Rings 1 set
" " Springs	" " Springs	" " Springs
" Safety Valve "	" Fire Bars NONE	" Feed Check Valves 2
" Piston Rods 1	" Connecting Rods	" Valve Spindles 1 LP 1 HP.
" Air Pump Rods	" Air Pump Buckets	" Air Pump Valves
" Cr. " "	" Cr. " "	" Cr. " "
" Crank Shafts	" Crank Pin Bushes	" Crosshead Bushes 1 pair
" Propeller Shafts 1*	" Propellers	" Propeller Blades
" Boiler Tubes	" Condenser Tubes	" Condenser Ferrules

OTHER ARTICLES OF SPARE GEAR:-

- 2 sets eye block slippers
- 1 guide shoe.
- 6 thrust shoes.
- 1 pair top end bushes.
- 1 set HP valve rings.
- 1 eccentric rod complete with bushes
- 1 " " only.

Bilge & Sanitary Pump.

- 1 1/2 sets piston rings
- 2 " bucket rings
- 1 " valve actuating gear
- 1 piston rod 1 bucket rod 1 face plate
- 1 set suction & delivery valves.
- 1 piston rod crank bush 1 piston rod gland bush.

* This shaft has defective line
on after part of length "A" bracket.

Feed pump 2 sets valve actuating gear.

2 piston rods and crossheads complete. 1 steam chest complete.

Bilge pump.

1 set valve actuating gear.

1 piston rod & crosshead complete.

Steering Gear

1-piston rod with top end bushes complete.

1-control valve, 1-control spindle 1-piston valve

1-piston valve spindle 2-top end bolts 2-bottom end bolts.

Windlass

1-piston. 2 sets piston rings, 2-9.13. bushes, 1 slide valve

1 control valve 1 piston rod & nut, 1 valve spindle, 1 ecc strap & pulley.

Air Pumps.

1 set valve actuating gear. 1 piston rod complete.

Electric Engine

1 eccentric rod & strap 1 Ring for metallic packing.

1 valve spindle 1 oil pump 1 oil strainer 1 connecting rod.

Oil Fuel Units.

2 Thermometers 1 set spanner

1 set tools

12 gauge glasses

2 suction strainers

REFRIGERATORS.

No. of Machines

Capacity of each

Makers

Description

No. of Steam Cylinders, each Machine

No. of Compressors

No. of Cranks

Particulars of Pumps in connection with Refrigerating Plant and whether worked by Refrigerating Machines or Independently

System of Refrigeration

Insulation

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

Spaces?

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

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

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

Date of Test under Working Conditions

RESULTS OF TRIALS.

COMPARTMENT.	Temp. at beginning of Trial.	Temp. at end of Trial.	Time required to obtain this Result.	Rise of Temp. after hours.
Machine in operation	ASHWORTH & PARKER			
Capacity	125W	100 W	500	
Current, alternating or continuous	CANT			
Single or Double- Water System	DOUBLE			
Position of Dynamo	LOWE, PLATTEN			
With British Board				
No. of Minutes to which pressure is applied at Water British Board			1	
Particulars of each condition				
Uncool	Machine	Cond.	Temp.	Temp.
1. SHARP CORNER	24	30W	9/10	
2. UPPER DE. FISH	5	50P	9/10	
3. FISHMAN	17	100	10/10	
4. NAV. SLOTH	2	30P	7/8	
5. DESEA	17	30	10/10	
6. UPPER DE. FISH	12	50	10/10	

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



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ELECTRIC LIGHTING

Installation Fitted by: CONSTER CONSTRUCTION CO LTD

No. and Description of Dynamom 2 - COMPOUND 4-POLES.

Makers of Dynamos **ASHWORTH & PARKER LTD**

Capacity " 12 KW 120 Amperes, at 100 Volts, 500 Revols. per Min.

Current Alternating or Continuous CONTINUOUSSingle or Double Wire System *DOUBLE*

Position of Dynamos LOWER PLATFORM PORT & STARD SIDES ENG. RM.

Main Switch Board

No. of Circuits to which Switches are provided on Main Switch Board 8 CIRCUITS.

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.
1. SHORE CONNECTION	2 1/4	30W		19/20			600
2. UPPER D ⁴ FORWARD	4	50P	7	19/20			
	2 1/2	30					
3. FORWARD	6	100	10	19/20			
	5	60					
4. NAVIGATION.	2	30	5	7/8			
5. SPARE	-	25					
	3 1/2	30					
6. UPPER D ⁴ AFT	2	5	10	19/20			
7. ENG. RM.	3 1/2	30	10	7/8			
8. AFT	3 1/2	30	10	19/20			

Total No. of Lights 196 No. of Motors driving Fans, &c. 1 No. of Heaters 5

Current required for Motors and Heaters 20 \times

Positions of Auxiliary Switch Boards, with No. of Switches on each (2) FORWARD END WORKING

PASSAGE 3. (3) FORWARD END WORKING PASSAGE 6 (4) STARBOARD SIDE WHEEL
HOUSE 8 (6) AFT END WORKING PASSAGE 8. (7) STARBOARD SIDE ENG. ROOM 5
(8) AFT END WORKING PASSAGE 8

Location	Number of Switches	Location	Number of Switches
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. 1/18	S.W.G., Largest, No. 1/16	S.W.G.	
How are Conductors in Engine and Boiler Spaces protected?	RUN ON PERFORATED TRAY. LC.		
" Saloons, State Rooms, &c., " ?	LEAD COVERED RUN ON SURFACE.		
What special protection is provided in the following cases?—			
(1) Conductors exposed to Heat or Damp	RUN ON PERFORATED TRAY LC.		
(2) " passing through Bunkers or Cargo Spaces	RUN ON GIRDER IN HOLD.		
(3) " " Deck Beams or Bulkheads	WT GLAND LEAD BUSHES.		

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

is unimpaired? *NONE*

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

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

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

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

Has the Insulation Resistance over the whole system been tested?

What does the Resistance amount to?

600000 Ohms.

Is the Installation supplied with a Voltmeter? *2*

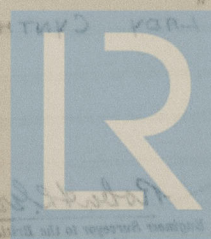
" " " an Ampere Meter? *2*

Date of Trial of complete Installation *27/6/25*

Duration of Trial *6 hours each*

Have all the requirements of Section 43 been satisfactorily carried out? *2/8/25*

Robert L. Greig.



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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. *None.*

Have all the requirements of Section 12 been satisfactorily carried out? *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. "LADY CYNTHIA" as ascertained by *me* from personal examination

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

Fees—

MAIN BOILERS.

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,

John King
Chief Surveyor.

Approved by the Committee for the Class of M.B.S.* on the *12th Aug. 1938.*

Fees advised

Fees paid



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Clifford M. ...
Secretary.
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GENERAL INSTRUCTIONS

MAINT. ENGINEER	1
1st Lt.	1
2nd Lt.	1
3rd Lt.	1
4th Lt.	1
5th Lt.	1
6th Lt.	1
7th Lt.	1
8th Lt.	1
9th Lt.	1
10th Lt.	1
11th Lt.	1
12th Lt.	1
13th Lt.	1
14th Lt.	1
15th Lt.	1
16th Lt.	1
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22nd Lt.	1
23rd Lt.	1
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92nd Lt.	1
93rd Lt.	1
94th Lt.	1
95th Lt.	1
96th Lt.	1
97th Lt.	1
98th Lt.	1
99th Lt.	1
100th Lt.	1

It is submitted that this Report be approved.

[Signature]

Approved by the Committee for the Class of M.B.S. on the 12th of July 1912.

RECEIVED

1st Lt.

2nd Lt.

3rd Lt.

4th Lt.

5th Lt.

6th Lt.

7th Lt.

8th Lt.

9th Lt.



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