

No. 1966

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. 1456 No. in Register Book 3046

S.S. COLLIER
COLLIER NO. 1

Makers of Engines Mac Gally & Pollock Ltd.

Works No. 340

Makers of Main Boilers Vickers Ltd.

Works No. 610

Makers of Donkey Boiler ✓

Works No. ✓

MACHINERY.

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Foundation

002839-002646-0281

No.

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. No. in Register Book

Received at Head Office

20th June 1924

Surveyor's Report on the ~~Detu~~ Engines, Boilers, and Auxiliary
Machinery of the ~~Single Triple~~ ~~Twin Quadruple~~ Screw "COLLIER NO. 1."

Official No. 147662

Port of Registry

London

Registered Owners

Steamships Ltd. Canada.

Engines Built by

MacGill & Pollock Ltd

at

Sunderland.

Main Boilers Built by

Vickers Ltd.

at

Barrow-in-Furness.

Donkey " "

at

Date of Completion

6th June 1924

First Visit

3rd 11/24.

Last Visit

6th June 1924

Total Visits

60

Visits to MacGill & Pollock Ltd.

First visit 3rd 11/24 Last 5th 4/24 Total 32

" " Vickers Ltd.

" 4th 11/24 " 6th 4/24 " 28

Grand Total 60

RECIPROCATING ENGINES.

Works No. *340* No. of Sets *One* Description *Compound Expansion Surface Condensing*

No. of Cylinders each Engine *Two* No. of Cranks *Two*
 Diars of Cylinders *24" - 48"* Stroke *36"*
 Cubic feet in each L.P. Cylinder *37.7*
 Are Spring-loaded Relief Valves fitted to Top and Bottom of each Cylr.?

" " " each Receiver?

Type of H.P. Valves,

" 1st I.P. "

" 2nd I.P. "

" L.P. "

" Valve Gear

" Condenser

Diameter of Piston Rods (plain part) *5 1/4"* Screwed part (bottom of thread) *3.786"*

Material " *Ingot Steel*

Diar. of Connecting Rods (smallest part) *5 1/2"* Material *Ingot Steel*

" Crosshead Gudgeons *6"* Length of Bearing *8 7/8"* Material *Ingot Steel*

No. of Crosshead Bolts (each) *2* Diar. over Thrd. *2 7/8"* Thrds. per inch *6* Material *Steel*

" Crank Pin " *2* " *2 7/8"* " *6* " "

" Main Bearings *Four* Lengths *11 3/8"*

" Bolts in each *2* Diar. over Thread *2 1/2"* Threads per inch *6* Material *Steel*

" Holding Down Bolts, each Engine *48* Diar. *1 1/4"* No. of Metal Chocks *48*

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? *Fitted bolts through foundation plate.*

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.?

Pressure in 1st I.P. Receiver,

Speed on Trial

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

Life Forge Co

*Made from Steel Bar (Stock).
MacCall & Pollock Ltd.*

3rd June 1924

6th June 1924

Barrow-in-Furness

No

Revs. per min.

lbs., 2nd I.P., lbs., L.P., lbs., Vacuum, ins.

850

Revs. per min. *85*

9 Knots.



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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

Estimated Pressure per lineal inch

Diam. of 2nd Reduction Pinion

" 2nd " Wheel

Estimated Pressure per lineal inch

Revs. per min. of Generators at Full Power

" Motors "

" 1st Reduction Shaft

" 2nd "

" Propellers at Full Power

Total Shaft Horse Power

Date of Harbour Trial

" Trial Trip

Trials run at

Speed on Trial

Knots. Propeller Revs. per min.

S.H.P.

Makers of Turbines

Generators

Motors

Reduction Gear

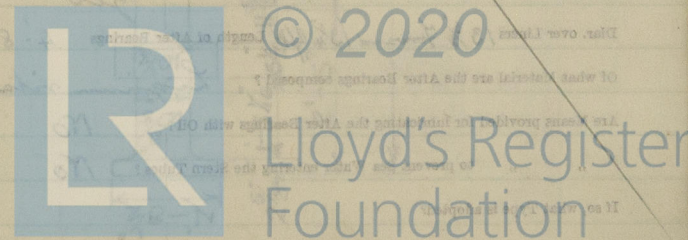
Turbine Spindles forged by

" Wheels forged or cast by

Reduction Gear Shafts forged by

" Wheels forged or cast by

DESCRIPTION OF INSTALLATION.



SHAFTING.

Are the Crank Shafts Built or Solid? *Built- (two cranks)*

No. of Lengths in each *One* Angle of Cranks *90°*

Diar. by Rule *10-26"* Actual *10³/₈"* In Way of Webs *10¹/₂"*

" of Crank Pins *10³/₈"* Length between Webs *11⁵/₈"*

Greatest Width of Crank Webs *1'-7¹/₈"* Thickness *6¹/₂"*

Least " " *1'-3¹/₄"* " *6¹/₂"*

Diar. of Keys in Crank Webs *1³/₄"* Length *5"*

" Dowels in Crank Pins *1"* Length *5"* Screwed or Plain *Screwed*

No. of Bolts each Coupling *6* Diar. at Mid Length *2¹/₂"* Diar. of Pitch Circle *1'-4"*

Greatest Distance from Edge of Main Bearing to Crank Web *1¹/₄"*

Type of Thrust Blocks *Horn-shoe type*

No. " Rings *Five*

Diar. of Thrust Shafts at bottom of Collars *10¹/₂"* No. of Collars *Six*

" " Forward Coupling *10¹/₂"* At Aft Coupling *10¹/₂"*

Diar. of Intermediate Shafting by Rule ☒ Actual ☒ No. of Lengths ☒

No. of Bolts, each Coupling *6* Diar. at Mid Length *2¹/₂"* Diar. of Pitch Circle *1'-4"*

Diar. of Propeller Shafts by Rule *11-39"* Actual *11³/₄"* At Couplings *10¹/₂"*

Are Propeller Shafts fitted with Continuous Brass Liners? *yes*

Diar. over Liners *13³/₈" Forward 13¹/₄" Aft* Length of After Bearings *4'-8¹/₂"*

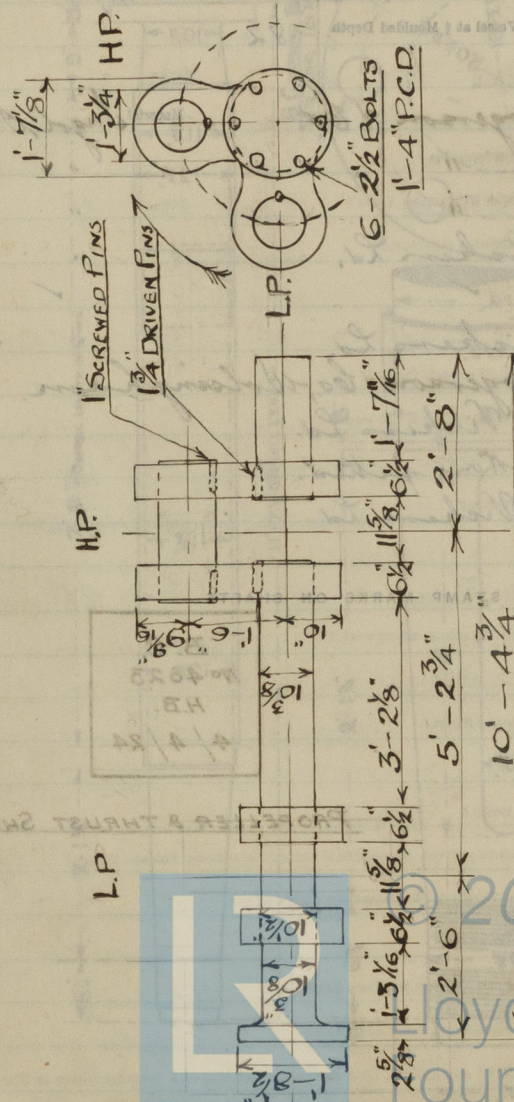
Of what Material are the After Bearings composed? *Lignum vitae*

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.



PUMPS, ETC.

No. of Air Pumps *One* Diar. *14 1/2"* Stroke *21"*

Worked by Main or Independent Engines? *Main*

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

Type of " *Centrifugal*

Diar. of " *Suction from Sea* *8"*

Has each Pump a Bilge Suction with Non-return Valve? *Yes* Diar. *7"*

What other Pumps can circulate through Condenser? *Ballast*

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 *Two* Diar. *6"* Stroke *13"*

What other Pumps can feed the Boilers? *auxiliary feed pumps*

No. of Bilge Pumps on Main Engine *Two* Diar. *3"* Stroke *21"*

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

No. of Independent Bilge Pumps *Two*

What other Pumps can draw from the Bilges? *Ballast*

Are all Bilge Suctions fitted with Roses? *Yes*

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

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

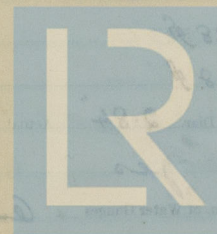
Are they placed so as to be easily accessible? *Yes*

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

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

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

on the Outside? *Yes*



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BOILERS.

Works No. 4 *610 P and 610 S.*

No. of Boilers *Two* Type *Single ended circular return tube*

Single or Double-ended *Single*

No. of Furnaces in each *Two*

Type of Furnaces *Seighlon withdrawable suspension*

Date when Plan approved *20/2/24.*

Approved Working Pressure *140 lbs*

Hydraulic Test Pressure *260 lbs.*

Date of Hydraulic Test *610 P - 5th/5/24. 610 S - 6th/5/24.*

" when Safety Valves set *3rd June 1924*

Pressure at which Valves were set *144 lbs per sq*

Date of Accumulation Test *3rd June 1924*

Maximum Pressure under Accumulation Test *153 lbs per sq*

System of Draught *Natural draught.*

Can Boilers be worked separately? *Yes*

Makers of Plates *W. Beardmore & Co. Parkhead Forge, Glasgow.*

" Stay Bars *United Strip & Bar Mills Ltd., The Laker Sheffield.*

" Rivets *North-West Rivet, Bolt & Nut Factory, Limerick.*

" Furnaces *W. Beardmore & Co. Parkhead Forge, Glasgow.*

Greatest Internal Diam. of Boilers *12'-10 ³/₄"*

" " Length " *11'-0"*

Square Feet of Heating Surface each Boiler *1578 ¹/₂*

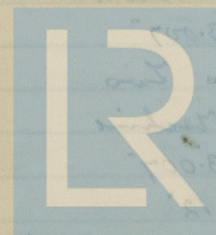
" " Grate " " *48 ¹/₂*

No. of Safety Valves each Boiler *Two* Rule Diam. *2.84"* Actual *3"*

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

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

" Test Cocks " *Three* " " Salinometer Cocks *One*



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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? *Direct*

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

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

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

Plates in each Strake *Two*

Thickness of Shell Plates Approved *$\frac{39}{32}$*

in Boilers *$\frac{15}{16}$*

Are the Rivets Iron or Steel? *Mild 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 *$\frac{11}{16}$*

inside *$\frac{13}{16}$*

Are Longitudinal Seams Hand or Machine Riveted? *Machine*

Are they Single, Double, or Treble Riveted? *Treble*

No. of Rivets in a Pitch *Five*

Diam. of Rivet Holes *$\frac{31}{32}$* Pitch *$6\frac{3}{4}$*

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 *Two*

Are these Seams Hand or Machine riveted? *Machine*

Diam. of Rivet Holes *$\frac{31}{32}$* Pitch *3.007"*

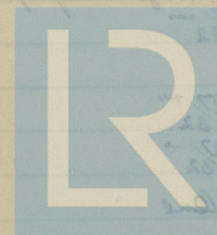
No. of Rows of Rivets in Back End Circumferential Seams *Two*

Are these Seams Hand or Machine Riveted? *Machine*

Diam. of Rivet Holes *$\frac{31}{32}$* Pitch *3.007"*

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

Dimensions of Compensating Rings *3'-0" x 2'-4" x 1" Flanged.*



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Thickness of End Plates in Steam Space Approved $1\frac{1}{2}$ "

" " " " " in Boilers $1\frac{1}{2}$ "

Pitch of Steam Space Stays $16"$ Vertically $18\frac{1}{2}"$ Horizontally (Mean)

Diar. " " " " Approved $2\frac{1}{2}"$ Threads per Inch 6

" " " " " in Boilers $2\frac{1}{2}"$ " 6

Material of " " " Mild steel

How are Stays Secured? Nuts & washers inside & out.

Diar. and Thickness of Loose Washers on End Plates $5\frac{1}{2}$ " dia by $\frac{3}{8}"$ thick

" " " Riveted " " " ✓

Width " " Doubling Strips " " ✓

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

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

Thickness of Doublings in Wide Spaces between Fireboxes ✓

Pitch of Stays at " " " $15"$ Horizontally $9"$ Vertically

Diar. of Stays Approved $1\frac{3}{4}"$ Threads per Inch 9

" " " in Boilers $1\frac{3}{4}"$ " 9

Material " Mild steel

Are Stays fitted with Nuts outside? Yes

Thickness of Back End Plates at Bottom Approved $\frac{3}{4}"$

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

Pitch of Stays at Wide Spaces between Fireboxes $15"$ Horizontally $9"$ Vertically

Thickness of Doublings in " " $\frac{27}{32}"$

Thickness of Front End Plates at Bottom Approved $\frac{27}{32}"$

" " " " " in Boilers $\frac{27}{32}"$

No. of Longitudinal Stays in Spaces between Furnaces One

Threads per Inch

Thickness of Back End Plates Approved

" " " " " in Boilers

Material

Thickness of Front End Plates Approved

" " " " " in Boilers

Pitch of Stay Tubes at Spaces between Spaces 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

Plain

Thickness of Stay Tubes

Plain

External Diam. of Tubes

Material

Thickness of Furnace Plates Approved

" " " " " in Boilers

Smallest outside Diam. of Furnaces

Length between Top Flanges

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Diarr. of Stay Approved $2\frac{3}{4}$ " Threads per Inch 6

" " in Boilers $2\frac{3}{4}$ " 6

Material, Mild steel

Thickness of Front Tube Plates Approved $\frac{27}{32}$ "

" " " " in Boilers $\frac{27}{32}$ "

Pitch of Stay Tubes at Spaces between Stacks of Tubes $17\frac{1}{2}$ " Horizontally $8\frac{3}{4}$ " Vertically

Thickness of Doublings in " " (Each chamber)

" Stay Tubes at " " One inner of corner tubes $\frac{1}{16}$ " thick with nut
One outer bottom " $\frac{3}{8}$ " " " nuts

Are Stay Tubes fitted with Nuts at Front End Flange to margin tubes $\frac{3}{8}$ " " " nuts
Three sides " $\frac{5}{16}$ " " " "
Thirteen between " $\frac{5}{16}$ " " without "

Thickness of Back Tube Plates Approved $\frac{25}{32}$ "

" " " in Boilers $\frac{25}{32}$ "

Pitch of Stay Tubes in Back Tube Plates $17\frac{1}{2}$ " Horizontally $8\frac{3}{4}$ " Vertically

" Plain " $4\frac{3}{8}$ " " $4\frac{3}{8}$ " "

Thickness of Stay Tubes See above

" Plain " No 9 L.S.G.

External Diarr. of Tubes $3\frac{1}{4}$ " Swelled to $3\frac{5}{16}$ " at front end.

Material, Wrought Iron

Thickness of Furnace Plates Approved $\frac{1}{2}$ "

" " " in Boilers $\frac{1}{2}$ "

Smallest outside Diarr. of Furnaces $4'-1"$

Length between Tube Plates $7'-8"$

Width of Combustion Chambers (Front to Back) $2'-6\frac{1}{4}"$

Thickness of " " Tops Approved $\frac{19}{32}$ "

" " " in Boilers $\frac{19}{32}$ "

Pitch of Screwed Stays in O.O. Tops $9\frac{1}{2}" \times 9"$



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Diam. of Screwed Stays Approved $1\frac{5}{8}$ Threads per Inch 9

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

Material " " Mild steel

Thickness of Combustion Chamber Sides Approved $\frac{19}{32}$

" " " in Boilers $\frac{19}{32}$

Pitch of Screwed Stays in C.O. Sides $9\frac{1}{2}$ Horizontally 9" Vertically

Diam. " " Approved $1\frac{5}{8}$ Threads per Inch 9

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

Material " " Mild steel

Thickness of Combustion Chamber Backs Approved $\frac{19}{32}$

" " " in Boilers $\frac{19}{32}$

Pitch of Screwed Stays in C.O. Backs $9\frac{1}{2}$ Horizontally 9" Vertically

Diam. " " Approved $1\frac{5}{8}$ Threads per Inch 9

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

Material " " Mild steel

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

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

No. of Girders over each Wing Chamber

Five

" " " Centre "

✓

Depth and Thickness of Girders

Two plates $7\frac{1}{4}$ x $\frac{5}{8}$ thick

Material of Girders

Steel plate

No. of Stays in each

Two

No. of Tubes, each Boiler

198, 42 of which are stay tubes

Size of Lower Manholes

16 x 12

VERTICAL DONKEY BOILERS

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

How fitted with Superheaters?

Date of Inspection

Date when safety valves set



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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

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

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 *Two*

Material *Copper*

Brazed, Welded or Seamless *Seamless*

Internal Diar. *4 1/2"*

Thickness *.160"*

How are Flanges secured? *Brazed*

Date of Hydraulic Test *23/5/24*

Test Pressure *280 lbs*

No. of Lengths

Material

Brazed, Welded or Seamless

Internal Diar.

Thickness

How are Flanges secured?

Date of Hydraulic Test

Test Pressure

SUPERHEATERS

No. of Lengths

Material

Brazed, Welded or Seamless

Internal Diar.

Thickness

How are Flanges secured?

Date of Hydraulic Test

Test Pressure

SPM EVAPORATORS. TEST

TYPE *Vertical*

SIZE *12 ft. x 2 ft.*

MAKERS *W. & A. Evans*

Date of Test *1/8/24*

Test Pressure *140 lbs*

Date of Test of Safety Valves under steam *1/8/24*

Working Pressure *140 lbs*

Remarks *See page 2*

FEED WATER HEATERS.

No. *2*

TYPE *Horizontal*

SIZE *12 ft. x 2 ft.*

MAKERS *W. & A. Evans*

Date of Test *1/8/24*

Test Pressure *140 lbs*

Date of Test of Safety Valves under steam *1/8/24*

Working Pressure *140 lbs*

Remarks *See page 2*

FEED WATER FILTERS.

No. *2*

TYPE *Horizontal*

SIZE *12 ft. x 2 ft.*

MAKERS *W. & A. Evans*

Date of Test *1/8/24*

Test Pressure *140 lbs*

Date of Test of Safety Valves under steam *1/8/24*

Working Pressure *140 lbs*

Remarks *See page 2*



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EVAPORATORS.

No. *200* Type *200* Tons per Day
 Makers *None fitted.*
 Working Pressure *200* Test Pressure *200* Date of Test
 Date of Test of Safety Valves under Steam

FEED WATER HEATERS.

No. *One* Type *Surface heating*
 Makers *Baird & Raynor*
 Working Pressure *140 lbs* Test Pressure *Shell 50 lbs
boils 280 lbs* Date of Test *1/5/24.*

FEED WATER FILTERS.

No. *One* Type *Gravitation (Triple filtration)* Size *3" Dia*
 Makers *Baird & Raynor*
 Working Pressure *5 lbs* Test Pressure *30 lbs* Date of Test *17/4/24.*

LIST OF DONKEY PUMPS.

TYPE.	SIZE.	MAKERS.
<i>Ans. feed pump</i>	<i>8" x 5" x 8"</i>	<i>Dawson & Downey</i>
<i>Ans circulating "</i>	<i>6" x 6" x 6"</i>	<i>" "</i>
<i>Ballast "</i>	<i>10" x 10" x 10"</i>	<i>" "</i>
<i>Sanitary "</i>	<i>4" x 2 3/4" x 5"</i>	<i>" "</i>
<i>Fresh water "</i>	<i>3 1/2" x 2 1/2" x 4"</i>	<i>" "</i>



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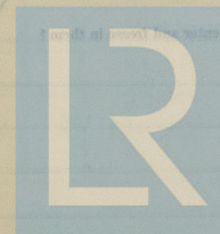
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SPARE GEAR

No. of Top End Bolts.	No. of Bot. End Bolts.	No. of Cylinder Cover Studs
2	2	
" Coupling Bolts 6	" Main Bearing Bolts 2	" Valve Chest " } 12
" Junk Ring Bolts ✓	" Feed Pump Valves 1 Set	" Bilge Pump Valves 1 Set
" H.P. Piston Rings ✓	" I.P. Piston Rings ✓	" L.P. Piston Rings ✓
" " Springs	" " Springs ✓	" " Springs ✓
" Safety Valve " One	" Fire Bars 25	" Feed Check Valves ✓
" Piston Rods ✓	" Connecting Rods ✓	" Valve Spindles ✓
" Air Pump Rods ✓	" Air Pump Buckets ✓	" Air Pump Valves 1 Set
" Cir. " ✓	" Cir. " ✓	" Cir. " ✓
" Crank Shafts ✓	" Crank Pin Bushes ✓	" Crosshead Bushes 1 Set
" Propeller Shafts ✓	" Propellers ✓	" Propeller Blades Four
" Boiler Tubes ✓	" Condenser Tubes ✓	" 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

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.

[illegible]

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

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ELECTRIC LIGHTING.

Installation Fitted by *Messrs Vickers Ltd. Barrow-in-Furness.*No. and Description of Dynamos *One 10 K.W.*Makers of Dynamos *Messrs Reader & Sons Ltd. Nottingham*Capacity " *91* Amperes, at *110* Volts = *10 K.W.* at *Revs. per Min. 450*Current Alternating or Continuous *Continuous*Single or Double Wire System *Double*Position of Dynamo *on flat, starboard side of engine room*" Main Switch Board *behind dynamo (Starboard side framing)*No. of Circuits to which Switches are provided on Main Switch Board *Five*

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>Brew forward</i>	<i>22</i>	<i>30 Watt</i>	<i>6.0</i>	<i>.007 24 Amps</i>	<i>99%</i>	<i>600 Megohms.</i>	
	<i>7</i>	<i>16 C.P.</i>	<i>3.6</i>				
	<i>2</i>	<i>60 Watt</i>	<i>1.0</i>				
<i>Navigation and Captain</i>	<i>3</i>	<i>32 C.P.</i>	<i>3.0</i>	<i>.007 24 Amps</i>	<i>99%</i>	<i>600 Megohms.</i>	
	<i>4</i>	<i>2½ C.P.</i>	<i>.50</i>				
	<i>10</i>	<i>30 Watt</i>	<i>2.7</i>				
<i>Midship</i>	<i>1</i>	<i>16 C.P.</i>	<i>.50</i>	<i>.007 24 Amps</i>	<i>99%</i>	<i>600 Megohms.</i>	
	<i>5</i>	<i>150 Watt</i>	<i>6.5</i>				
	<i>13</i>	<i>16 C.P.</i>	<i>6.5</i>				
<i>Brew aft</i>	<i>7</i>	<i>30 Watt</i>	<i>1.9</i>	<i>.007 24 Amps</i>	<i>99%</i>	<i>600 Megohms.</i>	
	<i>29</i>	<i>30 Watt</i>	<i>7.86</i>				
	<i>2</i>	<i>60 Watt</i>	<i>1.0</i>				
<i>Machinery</i>	<i>7</i>	<i>16 C.P.</i>	<i>3.5</i>	<i>.007 24 Amps</i>	<i>99%</i>	<i>600 Megohms.</i>	
	<i>1</i>	<i>32 C.P.</i>	<i>1.0</i>				
	<i>2</i>	<i>2½ C.P.</i>	<i>.25</i>				
	<i>27</i>	<i>30 Watt</i>	<i>7.34</i>				
	<i>4</i>	<i>16 C.P.</i>	<i>2.0</i>				

Total No. of Lights *146* No. of Motors driving Fans, &c. *None* No. of Heaters *None*Current required for Motors and Heaters *None*

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

1. *Brew's passage Starboard*
2. *Wheelhouse*
3. *Trolley engine room*
4. *Engineers stairway aft*
5. *Adjacent to Main switchboard.*

All above are nine way distribution boxes fitted with necessary switches.

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 Cut-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. *14* 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

Cables run in galvanised solid drawn tubes

Lead covered
Lead covered
Lead bushes through beams
Lead glands through W.T. B. head

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

is unimpaired?

No joints

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

No joints

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

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?

It was stated this would be done during the compass adjustment

Has the Insulation Resistance over the whole system been tested?

Yes

What does the Resistance amount to?

30000

Ohms.

Is the Installation supplied with a Voltmeter?

Yes

" " " an Ampere Meter?

Yes

Date of Trial of complete Installation

6th June 1924

Duration of Trial

6 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? *Yes*

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

Surveyor.

Fees—

MAIN BOILERS.

H.S. *3156* Sq. ft. : :

G.S. *96* " : :

DONKEY BOILERS.

H.S. ✓ Sq. ft. : :

G.S. ✓ " : :

£ : :

ENGINES.

L.P.C. *37.7* Cub. ft. : :

£ : :

Testing, &c. ... : :

£ : :

Expenses *L. Vickers Ltd* *23* : - : -

Total ... £ : :

It is submitted that this Report be approved,

Jack Barr for Chief Surveyor.

Approved by the Committee for the Class of M.B.S.* on the *25th June 1924*

Are the Materials used in the Construction of Engines and Boilers, so far as could be seen, sound and

trustworthy? *Yes*

Is the Workmanship throughout thoroughly satisfactory? *Yes*

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

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

as ascertained by *us* from personal examination

Bryan Hodgson

A. Burch.

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



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Fees advised

Fees paid

Lloyd's Register
Foundation
Secretary.

GENERAL INFORMATION

Form

State the Ministry and Police Force to which this document is submitted.

NAME DOCKET

H.S.

Sp. R.

Approved Name

State the Ministry and Police Force to which this document is submitted.

DOCKET NUMBER

H.S.

Sp. R.

ENDORS

L.P.O.

C.R. R.

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 1st day of 1914.

Approved by the Committee for the Class of M.B.S. on the 1st day of 1914.

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