

No. 2224

2224

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. *2242* No. in Register Book *3626*

E. P. MURPHY.

S.S. *"Ralph Gilchrist"*

Makers of Engines *Swan Hunter & W.R. Ltd*

Works No. *1328*

Makers of Main Boilers *Swan Hunter & W.R. Ltd*

Works No. *1328*

Makers of Donkey Boiler *None*

Works No. *-*

MACHINERY.

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No.

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. No. in Register Book

Received at Head Office

21st February 1930.

Surveyor's Report on the New Engines, Boilers, and Auxiliary
Machinery of the ~~Single Triple~~ ~~Two Quadruple~~ Screw Steamer
"Ralph Gilchrist".

Official No. 149493

Port of Registry

Newcastle.

Registered Owners

Sassia Steamships Ltd. Sassia,
Ontario

Engines Built by

Swan Hunter & W.R. Ltd.

at

Walker.

Main Boilers Built by

Swan Hunter & W.R. Ltd.

at

Walker.

Donkey "

"

None

at

Date of Completion

28.3.29

First Visit

13th Sept 1928.

Last Visit

28.3.29.

Total Visits.

56.

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RECIPROCATING ENGINES.

Works No. 1328. No. of Sets One Description Triple-expansion
Surface condensing.

No. of Cylinders each Engine three No. of Cranks three
Diars of Cylinders 15", 25" & 40" Stroke 33.
Cubic feet in each L.P. Cylinder 24.

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

" " each Receiver? Yes

Type of H.P. Valves, Piston Valve

1st I.P. " Eric Valve.

2nd I.P.,

L.P. "

" Valve Gear

" Condenser

Doubleported slide.
Stephenson Link,
Circular 2 flow.

Cooling Surface 400 sq. ft.

Diameter of Piston Rods (plain part)

Screw part (bottom of thread)

Material "

Diars. of Connecting Rods (smallest part)

Material

" Crosshead Gudgeons

Length of Bearing

Material

No. of Crosshead Bolts (each)

Diars. over Thrd.

Thrds. per inch

Material

" Crank Pin " "

" Main Bearings

Lengths

" Bolts in each

Diars. over Thread

Threads per inch

Material

" Holding Down Bolts, each Engine 61

Diars. 1 1/4"

No. of Metal Checks 61

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

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? Yes.

If so, what was the I.H.P.? 842

Revs. per min. 92.8

Pressure in 1st I.P. Receiver, 71 lbs., 2nd I.P.,

lbs., L.P., 12.1 lbs., Vacuum, 25" ins.

Speed on Trial 9.39

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

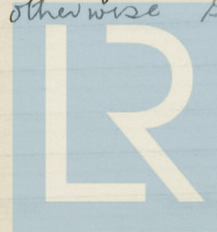
data:—

Builders' estimated I.H.P. ✓

Revs. per min. ✓

Estimated Speed ✓

This Machinery is a duplicate of that numbered 1324 and fitted in No 1369 (s/s "John O. McKellar") building at the same time and the details of which are similar unless otherwise stated.



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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

" 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 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 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

TURBO-ELECTRIC INSTALLATION OF ENGINEERING

1-3 1/2" Aux by Steam Stop Valve 360 H.P. 19-11-28.

G.H.B.

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

" 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 " "

" " Propeller Shaft

Total Shaft Horse Power

Date of Harbour Trial

" Trial Trip

Trials run at

Speed on Trial



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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 Revols. 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.

Sketch of Installation

Type of Thrust Blocks

Diam. of Thrust Shafts at Bottom of Collars

Forward Coupling

Diam. of Intermediate Shafting by Bolt

No. of Bolts each Coupling

Diam. of Propeller Shafts by Bolt

Are Propeller shafts fitted with Continuous Rings? I have?

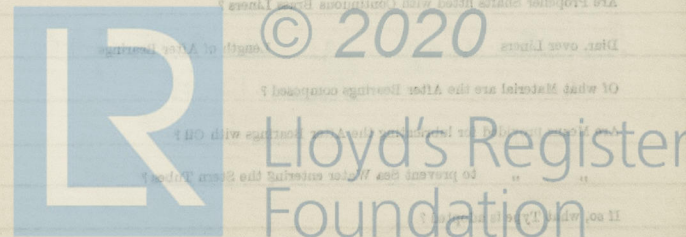
Diam. over Rings

Of what Material are the After Bearings composed?

Are the Bearings fitted with Continuous Rings? I have?

To prevent the Water entering the Stern Tubes?

If so, with what Material?



SHAFTING.

Are the Crank Shafts Built or Solid?

Built.

No. of Lengths in each

Angle of Cranks

Diar. by Rule

Actual

In Way of Webs

" of Crank Pins

Length between Webs

Greatest Width of Crank Webs

Thickness

Least

Diar. of Keys in Crank Webs

Length

" Dowels in Crank Pins

Length

Screwed or Plain

No. of Bolts each Coupling

Diar. at Mid Length

Diar. of Pitch Circle

Greatest Distance from Edge of Main Bearing to Crank Web

Type of Thrust Blocks

Multi Collar Horse Shoe.

No. " Rings

Diar. of Thrust Shafts at bottom of Collars

No. of Collars

" " "

Forward Coupling

At Aft Coupling

Diar. of Intermediate Shafting by Rule

Actual

No. of Lengths

No. of Bolts, each Coupling

Diar. at Mid Length

Diar. of Pitch Circle

No intermediate shafting.

Diar. of Propeller Shafts by Rule

Actual

At Couplings

Are Propeller Shafts fitted with Continuous Brass Liners?

Diar. over Liners

Length of After Bearings

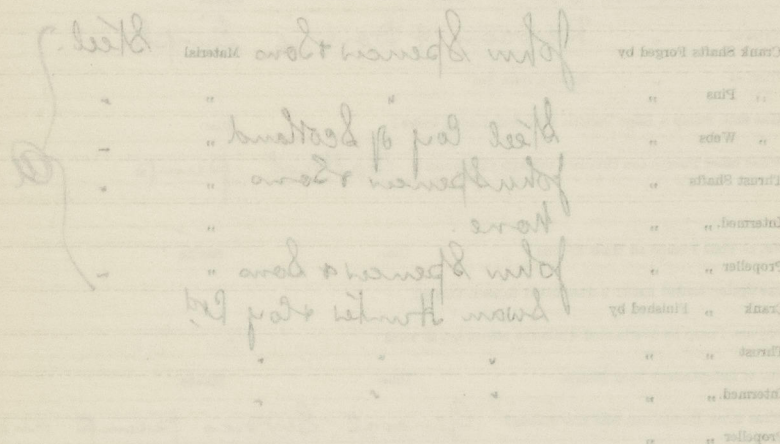
Of what Material are the After Bearings composed?

Are Means provided for lubricating the After Bearings with Oil?

" " to prevent Sea Water entering the Stern Tubes?

If so, what Type is adopted?

SKETCH OF CRANK SHAFT.

*See 3/s 'Kingdoc'**Swan Hunter No 1236 built 1997.*

STAMP MARKS ON SHAFTS.

Stamp marks on shafts:
 1. 1/2 inch gap between webs
 2. 1/2 inch gap between pins
 3. 1/2 inch gap between webs and pins

Stamp marks on shafts:
 1. 1/2 inch gap between webs
 2. 1/2 inch gap between pins
 3. 1/2 inch gap between webs and pins



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No. of Blades each Propeller

Material of Blades

Diam. of Propellers

Pitch

Surface (each

S. It.)

Coefficient of Displacement of Vessel at $\frac{1}{2}$ Moulded Depth

Crank Shafts Forged by

Material

Pins

Webs

Thrust Shafts

Intermed.,

Propeller

Crank Finished by

Thrust

Intermed.,

Propeller

John Spencer & Sons
Steel Coy of Scotland
John Spencer & Sons
None
John Spencer & Sons
Swan Hunter & Coy Ltd

Steel.

STAMP MARKS ON SHAFTS.

Crank shaft.

391 GHB. 14.9.98.
J. L. 4.12.98.

Thrust shaft.

391. GHB 21.9.98
J. L. 4.12.98.

Propeller shaft.

391. 24.9.98 GHB
J. L. 4.12.98.

SKETCH OF PROPELLER SHAFT.

See S/s Kingdoc

Swan Hunter 1236. built 1927.



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PUMPS, ETC. SKETCH OF THE SHAFT

No. of Air Pumps *One* Diar. StrokeWorked by Main or Independent Engines? *See the sketch*No. of Circulating Pumps *One* Diar. StrokeType of *Dawson & Downie Simplex.*

Diar. of Suction from Sea

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

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?

No. of Independent Feed Pumps Diar. Stroke

What other Pumps can feed the Boilers? *General Service pump and injector*

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

What other Pumps can draw from the Bilges? *Circulating pump and ballast pump.*Are all Bilge Suctions fitted with Roses? *Yes or Mudboxes.*

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

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

Are they placed so as to be easily accessible?

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

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

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

on the Outside?

BOILERS

Works No. *1928*No. of Boilers *Two*

Single or Double-ended

No. of Furnaces in each

Type of Furnaces

Date when Plan approved

Approved Working Pressure

Hydraulic Test Pressure

Date of Hydraulic Test

" when Safety Valves set

Pressure at which Valves were set

Date of Accumulation Test

Maximum Pressure under Accumulation Test

System of Drafting

Can Boilers be worked separately?

Makers of Plates

"

"

"

Distance between Diaphragms of Boilers

"

"

"

"

"

"

"



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BOILERS.

1328.

Works No. 1328.

No. of Boilers Two Type Cylindrical Multitubular.

Single or Double-ended Single-ended.

No. of Furnaces in each Two

Type of Furnaces Brighton

Date when Plan approved 31. 8. 28.

Approved Working Pressure 180 lbs.

Hydraulic Test Pressure 320 ..

Date of Hydraulic Test 22. 1. 29.

„ when Safety Valves set 6. 3. 29.

Pressure at which Valves were set 185 lbs.

Date of Accumulation Test no accumulation test taken.

Maximum Pressure under Accumulation Test ✓

System of Draught Forced - Howdens C.A.

Can Boilers be worked separately? Yes

Makers of Plates Steel Coy of Scotland.

„ Stay Bars „

„ Rivets Rivet, Bolt and Nut Coy.

„ Furnaces Broomside Boiler works.

Greatest Internal Diam. of Boilers

„ „ Length „

Square Feet of Heating Surface each Boiler

„ „ Grate „

No. of Safety Valves each Boiler Rule Diam. Actual

Are the Safety Valves fitted with Lifting Gear?

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

„ Test Cocks „

„ „ Salinometer Cocks

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

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?

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



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Are the Water Gauge Stems direct to the Boiler Shell or connected by Pipes?

Thickness of End Plates in Steam Space Approved

Are the Water Gauge Tubes direct to the Boiler Shell or connected by Pipes?

" " " " in Boilers

Are these Pipes connected by Galvanic Cells or otherwise?

Pitch of Steam Space Stays

Are these Stays direct to the Boiler Shell or connected by Pipes?

Diam. " " " " Approved Threads per Inch

No. of Stays of such Plates in each Boiler

" " " " in Boilers "

Pitch in each Space

Material of " " "

Thickness of Shell Plates Approved

How are Stays Secured?

" " " " in Boilers

Diam. and Thickness of Loose Washers on End Plates

Are the Stays fitted with Nuts?

" " Riveted " "

Are the Longitudinal Stays Right or Lap Joints?

Width " " Doubling Strips "

Are the Shell Straps Single or Double?

Are the Double Shell Straps of equal width?

Thickness of Middle Back End Plates Approved

Thickness of Middle Back End Plates

" " " " in Boilers

Are these Plates connected by Pipes?

Thickness of Doublings in Wide Spaces between Fireboxes

Are these Doublings direct to the Boiler Shell or connected by Pipes?

Pitch of Stays at " " " "

Are they Single, Double, or Triple Straps?

Diam. of Stays Approved Threads per Inch

No. of Stays in each Space

" " " " in Boilers "

Diam. of Rivet Heads Pitch

Material " "

No. of Stays of Nuts in Centre of Longitudinal Spaces

Are Stays fitted with Nuts outside?

Are these Nuts fitted with Washers?

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Diam. 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 Diam. of Tubes

Material "

Thickness of Furnace Plates Approved

" " " in Boilers

Smallest outside Diam. of Furnaces

Length between Tube Plates

Width of Combustion Chambers (Front to Back)

Thickness of " " Tops Approved

" " " " in Boilers

Pitch of Screwed Stays in C.C. Tops

Threads per Inch

Diam. of Screwed Stays Approved

" " in Boilers

Material "

Thickness of Combustion Chamber Stays Approved

" " in Boilers

Pitch of Screwed Stays in C.C. Sides

Threads per Inch

Diam. " Approved

" " in Boilers

Material "

Thickness of Combustion Chamber Backs Approved

" " in Boilers

Pitch of Screwed Stays in C.C. Backs

Threads per Inch

Diam. " Approved

" " in Boilers

Material "

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

Thickness of Combustion Chamber Bottoms

No. of Girders over each Wing Chamber

" " Girders

Depth and Thickness of Girders

Material of Girders

No. of Stays in each



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 Diameter

Thickness

Date of Hydraulic Test

Test Pressure



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MAIN STEAM PIPES.

No. of Lengths	3		
Material	Steel		
Brazed, Welded or Seamless	Seamless.		
Internal Diam.	3½"		
Thickness	¼"		
How are Flanges secured?	Screwed.		
Date of Hydraulic Test	24.2.79.		
Test Pressure	540 lbs		
Are Flanges Covered Flat or Elliptical?			
External Radius of Elliptical Covers			
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			

SUPERHEATERS.

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

LIST OF CONDENSER PUMPS.

No.	Type	Material	Working Pressure	Date of Test of Safety Valves under steam
Same as	John A. McKittrick	Cast Iron	180 lbs	18.12.78

FEED WATER HEATERS.

No.	Type	Material	Working Pressure	Date of Test of Safety Valves under steam
Same as	John A. McKittrick	Cast Iron	180 lbs	18.12.78

FEED WATER FILTERS.

No.	Type	Material	Working Pressure	Date of Test of Safety Valves under steam
Same as	John A. McKittrick	Cast Iron	180 lbs	18.12.78



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SPARE GEAR.

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

OTHER ARTICLES OF SPARE GEAR:—

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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.

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

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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?

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

Date of Test under Working Conditions

RESULTS OF TRIALS.

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

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

Particulars of these Circuits—	No. of Circuits to which Switches are provided on Main Switch Board	Main Switch Board	Location of Dynamos	Single or Double Wire System	Current Alternating or Continuous	Capacity	Makers of Dynamos	No. and Description of Dynamos	Installation Fitted by

Are Cut-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. S.W.G., Largest, No. S.W.G.

How are Conductors in Engine and Boiler Spaces protected?

" " Saloons, State Rooms, &c., " ?

What special protection is provided in the following cases?—

(1) Conductors exposed to Heat or Damp

(2) " " passing through Bunkers or Cargo Spaces

(3) " " Deck Beams or Bulkheads

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

is unimpaired? Have the Machinery and Bolts been constructed in accordance with the requirements of the Regulations?

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?

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

Has the Insulation Resistance over the whole system been tested? Yes.

What does the Resistance amount to? 400,000. Ohms.

Is the Installation supplied with a Voltmeter? Yes

" " " an Ampere Meter Yes

Date of Trial of complete Installation 6.3.29. 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. *Yes*

Fees—

MAIN BOILERS.

	£	s.	d.
H.S. Sq. ft.	:	:	:
G.S. "	:	:	:

DONKEY BOILERS.

H.S. Sq. ft.	:	:	:
G.S. "	:	:	:
	£	:	:

ENGINES.

L.P.O. Cub. ft.	:	:	:
	£	:	:
Testing, &c. ...	:	:	:
	£	:	:
Expenses ...	:	:	:
Total ...	£	:	:

It is submitted that this Report be approved,

James Barr for Chief Surveyor.

Approved by the Committee for the Class of M.B.S.* on the 23rd December 1929.

Fees advised

Fees paid



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Secretary.

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.

as ascertained by *me* from personal examination

"*Ralph Gilchrist*"

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

MAIN BOLTERS.

2.6

41.02

25

DONKEY BOLLERS

2.8

11-05

B.D.

L.P.G.

Testino, G.

Experiences

[830]

It is submitted that this Report be approved.

Chief Engineer.

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

Zachary W.

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