

No. 2019

25/4

THE BRITISH CORPORATION FOR THE SURVEY

AND

REGISTRY OF SHIPPING.



Report No.

1834

No. in Register Book

3144

S.S.

"WILLIAM C. WARREN"

Makers of Engines

A. Rowan & Co Ltd

Works No.

818

Makers of Main Boilers

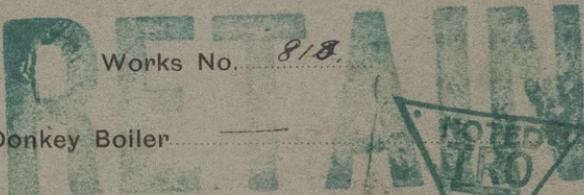
A. Rowan & Co Ltd

Works No.

818

Makers of Donkey Boiler

Works No.



MACHINERY.



Lloyd's Register
Foundation

No.

THE BRITISH CORPORATION FOR THE SURVEY

AND

REGISTRY OF SHIPPING.

Report No. 1834 No. in Register Book 3147

Received at Head Office 29th April 1925

Surveyor's Report on the New Engines, Boilers, and Auxiliary
Machinery of the ^{Single Triple} ~~Twin Quadruple~~ Screw Steamship

"WILLIAM C. WARREN"

Official No.

Port of Registry Glasgow.

Registered Owners

Eastern Steamship Co Ltd

Engines Built by

S. Rowan & Co Ltd

at

Glasgow.

Main Boilers Built by

S. Rowan & Co Ltd

at

Glasgow.

Donkey

at

Date of Completion

4/25.

First Visit

9/12/24

Last Visit

18/4/25

Total Visits

34

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RECIPROCATING ENGINES.

Works No. *818* No. of Sets *One* Description *Triple Expansion*

inverted cylinder, surface condensing.

No. of Cylinders each Engine *3* No. of Cranks *3*

Diams of Cylinders *14", 28 1/2", and 44"* Stroke *33"*

Cubic feet in each L.P. Cylinder *33.1*

Are Spring-loaded Relief Valves fitted to Top and Bottom of each Cylr? *On H.P.; 1 P. & L.P. bottom only*

" " " each Receiver? *1 P. & L.P.*

Type of H.P. Valves, *Piston valves with inside steam*

" 1st I.P., *Andrew & Cameron balanced*

" 2nd I.P., *—*

" L.P. *double-ported "D" slide valve*

" Valve Gear *Stephenson link motion*

" Condenser *Surface* Cooling Surface *1000* sq. ft.

Diameter of Piston Rods (plain part) *4 1/2"* Screwed part (bottom of thread) *3 1/2" aft.*

Material " *Mild Steel*

Diam. of Connecting Rods (smallest part) *4 1/4"* Material *Mild Steel*

" Crosshead Gudgeons *5"* Length of Bearing *7 1/2"* Material " "

No. of Crosshead Bolts (each) *2* Diam. over Thrd. *2 1/2"* Thrds. per inch *4* Material *Steel*

" Crank Pin " " *2* " *2 1/2"* " *4* " "

" Main Bearings *6* Lengths *9"*

" Bolts in each *2* Diam. over Thread *2"* Threads per inch *4"* Material *Steel*

" Holding Down Bolts, each Engine *46* Diam. *1"* No. of Metal Chocks *46*

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

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

If not, how are they fitted? *—*

Connecting Rods, Forged by *S. Rowan & Co Ltd*

Piston " " " " " "

Crossheads, " " " " " "

Connecting Rods, Finished by *S. Rowan & Co Ltd*

Piston " " " " " "

Crossheads, " " " " " "

Date of Harbour Trial *16/4/25*

" Trial Trip *18/4/25*

Trials run at *Skelmorlie*

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

If so, what was the I.H.P.? *1212.* Revols. per min. *1016*

Pressure in 1st I.P. Receiver, *85* lbs., 2nd I.P., *—* lbs., L.P., *19 1/2* lbs., Vacuum, *26* ins.

Speed on Trial *9.492*

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

data:—

Builders' estimated I.H.P. *1,000*

Revs. per min. *87.*

Estimated Speed



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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

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.

No. of Turbine Shafts as bottom of Cabin
 Diam. of Turbine Shafts at bottom of Cabin
 Forward Coupling
 At Air Coupling
 No. of Couplings
 Diam. of Pinion Coupling
 Diam. of Propeller Pinion by Hole
 Actual
 10-3/4" At Couplings
 10-7/8" Actual



SHAFTING.

Are the Crank Shafts Built or Solid? *Built*

No. of Lengths in each *One* Angle of Cranks *120°*

Diar. by Rule *8.956*" Actual *9*" In Way of Webs *9 1/4*"

" of Crank Pins *9*" Length between Webs *9*"

Greatest Width of Crank Webs *1 1/4*" Thickness *5 7/8*"

Least " " *1 3/8*" " *5 7/8*"

Diar. of Keys in Crank Webs *1 1/2*" *dowels* Length *3 1/2*"

" Dowels in Crank Pins *1*" Length *2 1/2*" Screwed or Plain *Plain*

No. of Bolts each Coupling *6* Diar. at Mid Length *2 1/8*" Diar. of Pitch Circle *14 3/4*"

Greatest Distance from Edge of Main Bearing to Crank Web *about 1/2*"

Type of Thrust Blocks *Horse-shoe*

No. " Rings *4*

Diar. of Thrust Shafts at bottom of Collars *9 1/4*" No. of Collars *4*

" " Forward Coupling *9*" At Aft Coupling *8 5/8*"

Diar. of Intermediate Shafting by Rule *8.508*" Actual — No. of Lengths —

No. of Bolts, each Coupling — Diar. at Mid Length — Diar. of Pitch Circle —

Diar. of Propeller Shafts by Rule *10.18*" Actual *10.375*" At Couplings *9*"

Are Propeller Shafts fitted with Continuous Brass Liners? *Yes.*

Diar. over Liners *1 1/2*" aft *1 1/8*" fore Length of After Bearings *3'-6"*

Of what Material are the After Bearings composed? *Legnum 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? *Sea-water lubrication*

SKETCH OF CRANK SHAFT.

Same as No 813, & 814.

1/3 NORMAN B. HADPHERSON.

1/3 JOHN B. RICHARDS.



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PUMPS, ETC.

No. of Air Pumps *One* Diar. *13"* Stroke *18"*
 Worked by Main or Independent Engines? *by links from H.P. engine*
Edwards type
 No. of Circulating Pumps *One* Diar. *9 1/2"* Stroke *18"*
 Type of " *double-acting plunger.*
 Diar. of " Suction from Sea *6"*
 Has each Pump a Bilge Suction with Non-return Valve? *Yes* Diar. *6"*
 What other Pumps can circulate through Condenser? *Auxiliary circulating and*
Ballast pumps.
 No. of Feed Pumps on Main Engine *2* Diar. *2 1/2"* Stroke *18"*
 Are Spring-loaded Relief Valves fitted to each Pump? *Yes.*
 Can one Pump be overhauled while the others are at work? *Yes.*
 No. of Independent Feed Pumps *—* Diar. *—* Stroke *Injector.*
 What other Pumps can feed the Boilers? *Several donkey (Wais)*
 No. of Bilge Pumps on Main Engine *2* Diar. *3"* Stroke *18"*
 Can one Pump be overhauled while the others are at work? *Yes*
 No. of Independent Bilge Pumps *None*
 What other Pumps can draw from the Bilges? *Ballast pump, and auxiliary*
circulating pump.
 Are all Bilge Suctions fitted with Roses? *Yes, except straight pipes in engine room*
 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.*

BOILERS.

No. of Boilers *2*
 Type of Boilers *Water-tube*
 Date when first approved *1880*
 Approved Working Pressure *120 lbs.*
 Hydraulic Test Pressure *250 lbs.*
 Date of Hydraulic Test *28/3/1882*
 when Safety Valves set *115 lbs.*
 Pressure at which Safety Valves set *120 lbs.*
 Date of Accumulation Test *14/4/82*
 Maximum Pressure under Accumulation Test *250 lbs.*
 System of Drafting *Horizontal four draft*
 Can Boilers be worked separately? *Yes*
 Nature of Draft *Horizontal four draft*



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BOILERS.

Works No. *818*

No. of Boilers *2* Type *Cylindrical multitubular*

Single or Double-ended *Single*

No. of Furnaces in each *Two*

Type of Furnaces *Beighton*

Date when Plan approved *13/9/24*

Approved Working Pressure *180 lbs/°*

Hydraulic Test Pressure *320 lbs/°*

Date of Hydraulic Test *28/3/25*

„ when Safety Valves set *14/4/25*

Pressure at which Valves were set *185 lbs.*

Date of Accumulation Test *14/4/25*

Maximum Pressure under Accumulation Test *3 lbs/°*

System of Draught *Howden's forced draught.*

Can Boilers be worked separately? *Yes.*

Makers of Plates *Friedrich Krupp, Essen* ✓

„ Stay Bars *Lanarkshire Steel Co Ltd* ✓

„ Rivets *N.W. Rivel, Bolt & nut Co Ltd*

„ Furnaces *John Marshall & Co* ✓

Greatest Internal Diam. of Boilers *11'-10"*

„ „ Length „ *10'-10 1/8"*

Square Feet of Heating Surface each Boiler *1425*

„ „ Grate „ „ *36.65*

No. of Safety Valves each Boiler *2* Rule Diam. *2 3/8"* Actual *2 1/2"*

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

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

„ Test Cocks „ *3* „ Salinometer Cocks *one*

TEST MARKS ON BOILERS.

B. C.
 No 4908
 TEST PRESS 320 lbs
 WORK. " 180 lbs
 G. H. L.
 28/3/25



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

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

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

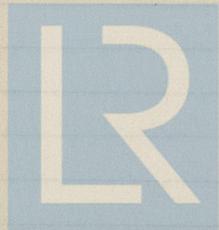
Are these Seams Hand or Machine Riveted?

Diar. of Rivet Holes Pitch

Size of Manholes in Shell

Dimensions of Compensating Rings

Scantlings as Nos 813 & 814
"NORMAN B. MACPHERSON"
"JOHN B. RICHARDS"



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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

Scantlings as Nos 813 & 814.

813 - 1/2" x 1/2" x 1/2" x 1/2" x 1/2" x 1/2"
814 - 1/2" x 1/2" x 1/2" x 1/2" x 1/2" x 1/2"

Threads per Inch

Diag. of Stay Approved

in Boilers

Thickness of Steam Space Stays Approved

in Boilers

Pitch of Stay Tubes in Spaces between Backs 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

Thin

Thickness of Stay Tubes

Thin

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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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

Scantlings as Nos 813 & 814.

1/8 " NORMAN B MACPHERSON "

1/8 " JOHN B. RICHARDS "

Threads per Inch

Diar. of Screwed Stays Approved

" " " in Boilers

Material " "

Thickness of Combustion Chamber Stays Approved

" " " in Boilers

Pitch of screwd stays in C.C. tops

Threads per Inch

Diar. " " Approved

" " " in Boilers

Material " "

Thickness of Combustion Chamber Backs Approved

" " " in Boilers

Pitch of screwd stays in C.C. Backs

Threads per Inch

Diar. " " Approved

" " " in Boilers

Material " "

Are all screwd stays fitted with Nuts inside C.C.?

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 lower handles



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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.C. Sides

Diar. " " Approved Threads per Inch

" " " in Boilers

Material " "

Thickness of Combustion Chamber Backs Approved

" " " " in Boilers

Pitch of Screwed Stays in C.C. Backs

Diar. " " 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 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

Scavenging as Nos 8/13 - 874

VERTICAL DONKEY BOILERS

No. of Boilers
Type
Greatest Int. Diar.
Height
Height of Boiler Crown above Fire Grate
Are Boiler Crowns Flat or Dishd?
Internal Radius of Dishd Boilers
Description of Boxen in Boiler Crowns
Diam. of Holes
Pitch
Width of Covering
Height of Firebox Crown above Fire Grate
Are Firebox Crowns Flat or Dishd?
Internal Radius of Dishd Crowns
No. of Crow Stays
Diar.
Material
Thickness of Plates
Kiln's Diam. of Firebox at Top
Base Diam.
No. of Water Tubes
Internal of Water Tubes
Size of Manhole in Shell
Dimensions of Compensating Ring
Location of each Boiler
Grate Surface

SUPERHEATERS

Description of Superheaters
Where situated?
Which Boilers are connected to Superheaters?
Are Superheaters at ends of shells or between?
No. of Stays in each Superheater
Diam. of Stays
Diam. of Firebox at Top
Diam. of Manhole in Shell
Last man hole diam. at top



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VERTICAL DONKEY BOILERS.

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

SUPERHEATERS.

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

MAIN STEAM PIPES.

No. of Lengths
 Material
 Internal, Welded or Flanged
 Internal Diar.
 Thickness
 How are Flanges secured?
 Date of Hydraulic Test
 Test Pressure
 No. of Lengths
 Material
 Internal, Welded or Flanged
 Internal Diar.
 Thickness
 How are Flanges secured?
 Date of Hydraulic Test
 Test Pressure



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MAIN STEAM PIPES.

No. of Lengths	2		
Material	Steel		
Brazed, Welded or Seamless	Seamless		
Internal Diam.	4"		
Thickness	1/4"		
How are Flanges secured?	Screwed with rambling thread		
Date of Hydraulic Test	10/4/25		
Test Pressure	540 lbs/sq"		
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. 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			



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EVAPORATORS.

No.	Type	Tons per Day
	<i>3</i>	
Makers	<i>See</i>	
Working Pressure	Test Pressure	Date of Test
Date of Test of Safety Valves under Steam		

FEED WATER HEATERS.

No.	Type	Size
<i>1</i>	<i>Surface heating</i>	
Makers	<i>Henry Watson, Newcastle on Tyne</i>	
Working Pressure	Test Pressure	Date of Test
<i>Shell 15 lbs Tubes 18.5</i>	<i>Shell 15.0 Tubes 4.32</i>	<i>Shell 24/2/25 Tubes 5/3/25</i>

FEED WATER FILTERS.

No.	Type	Size
<i>1</i>	<i>Suction filter</i>	
Makers	<i>Henry Watson, Newcastle on Tyne</i>	
Working Pressure	Test Pressure	Date of Test

LIST OF DONKEY PUMPS.

Ballast Pump: - Rowan's
Suctions: - Sea, tanks, bilges
Discharges: - Condenser, tanks, deck, overboard.

Aux. Circulating Pump: - Rowan's
Suctions: - Sea, bilge
Discharges: - Overboard, condenser, culinary tanks

Aux. Feed Pump: - Weir's
Suction: - Tank, hotwell or condenser, boilers.
Discharges: - Heater, or any feed range, ash gaskets
 - deck or overboard.

A steam injector is also fitted to the aux.
 feed range for boilers.



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REFRIGERATORS.

No. of Machines *2* Capacity of each *2* No. of Cylinders *12*
 Makers *1000* *2* *12*
 Description *1000* *12*
 H.P. Steam Horse *1* L.P. Horse *1*
 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

Not fitted

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.
<i>Machine of Direction</i>				
<i>Capacity</i>				
<i>Character & Description of Compressor</i>				
<i>Kind of Double Valve System</i>				
<i>Position of System</i>				
<i>Kind of Brine</i>				
<i>Kind of Thermometer</i>				
<i>Particulars of Valve Operation</i>				
<i>Chart</i>				
<i>1) Room aft 54</i>	<i>12</i>	<i>12</i>	<i>1/2 hr</i>	<i>100</i>
<i>2) " port 42</i>				
<i>3) " lower 20</i>				
<i>4) " fore</i>				

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 *None.*

Particulars of these Circuits	No. of Circuits to which Switches are provided on Main Switch Board	Position of Dynamometer	Single or Double Wire System	Current Alternating or Continuous	Capacity	Meters of Dynamometer	No. and Description of Dynamometer	Installation fitted by

Are Out-outs fitted as follows?—

On Main Switch Board, to Cables of Main Circuits *Yes.*

On Aux. " " each Auxiliary Circuit —

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. *3/019* S.W.G., Largest, No. *7/064* S.W.G.

How are Conductors in Engine and Boiler Spaces protected? *Lubing*

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

What special protection is provided in the following cases?—

(1) Conductors exposed to Heat or Damp *Lubing*

(2) " " passing through Bunkers or Cargo Spaces *Lubing*

(3) " " Deck Beams or Bulkheads *Lubing.*

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? —

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

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

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

Has the Insulation Resistance over the whole system been tested? *Yes, 400*

What does the Resistance amount to? *18 meg.* Ohms.

Is the Installation supplied with a Voltmeter? *Yes.*

" " " an Ampere Meter? *Yes.*

Date of Trial of complete Installation *18/4/25* Duration of Trial *6 hours.*

Have all the requirements of Section 42 been satisfactorily carried out? *Yes - see page 38.*



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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, except as below.*

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

Surveyor.

V.I.R. braided cable in conduits fitted in machinery spaces in lieu of lead covered. (see book 2009; S.S. 247.) Sanctioned by Chief Surveyor.

Are the Materials used in the Construction of Engines and Boilers, so far as could be seen, sound and trustworthy? *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. *"WILLIAM C WARREN"*

as ascertained by *me* from personal examination

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

Fees—

MAIN BOILERS.		£	s.	d.
H.S.	Sq. ft.	:	:	
G.S.	"	:	:	
DONKEY BOILERS.				
H.S.	Sq. ft.	:	:	
G.S.	"	:	:	
		£	:	:
ENGINES.				
L.P.O.	Cub. ft.	:	:	
		£	:	:
Testing, &c. ...		:	:	
		£	:	:
Expenses ...		:	:	
Total ...		£	:	:

It is submitted that this Report be approved,

Chief Surveyor.

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

Fees advised
 Fees paid

In order



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 Secretary.

GENERAL CONSTRUCTION

Have the Machinery and Electrical work been completed in accordance with the contract?

Approved this: Yes, except as below

It is recommended that the work be completed in accordance with the contract.

DOUGLAS BOWEN

V.I.R. braided cable in conduit filled in machinery spaces in lieu of lead-covered (see book 2009, sublet 209)

Sanctioned by C.Y. Swanson

L.P.O.

Exp. 4

WILLIAM C. WARREN
Exp. 4

Visits.

878

9/12/24.

15 "

16 "

17 "

18 "

23 "

30 "

9/1/25

14 "

20 "

22 "

26 "



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