

No. 2010

THE BRITISH CORPORATION FOR THE SURVEY  
AND  
REGISTRY OF SHIPPING.

Report No. 1836 No. in Register Book 3146

S.S. "JOHN B RICHARDS"

Makers of Engines B. Rowan & Co Ltd

Works No. 814

Makers of Main Boilers B. Rowan & Co Ltd

Works No. 814

Makers of Donkey Boiler —

Works No. —

MACHINERY.



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No.

THE BRITISH CORPORATION FOR THE SURVEY

AND

REGISTRY OF SHIPPING.

Report No. *1836* No. in Register Book *3146*

Received at Head Office *29<sup>th</sup> April 1925*

Surveyor's Report on the New Engines, Boilers, and Auxiliary Machinery of the *Single Triple* Screw Steamer

"JOHN B. RICHARDS"

Official No.

Port of Registry *Glasgow*

Registered Owners

*Eastern Steamship Co Ltd*

Engines Built by

*D. Rowan & Co Ltd*

at

*Glasgow*

Main Boilers Built by

*D. Rowan & Co Ltd*

at

*Glasgow*

Donkey

at

Date of Completion

*April 1926*

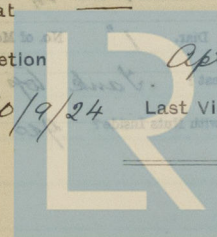
First Visit

*30/9/24*

Last Visit

*9/4/25*

Total Visits *36*



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## RECIPROCATING ENGINES.

Works No. *874* No. of Sets *One* Description *Triple exp.*

No. of Cylinders each Engine *3* No. of Cranks *3*  
 Diars. of Cylinders *17", 28½" and 47"* 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 valve with inside steam*" 1st I.P. " *Andrews & Cameron balanced*" 2nd I.P. " *—*" L.P. " *Double-ported "D" slide valve*" Valve Gear *Stephensons*" Condenser *Surface* Cooling Surface *1000* sq. ft.Diameter of Piston Rods (plain part) *4½"* Screwed part (bottom of thread) *3½" app.*Material " *H. Steel*Diar. of Connecting Rods (smallest part) *4¼"* Material *H. Steel*" Crosshead Gudgeons *5"* Length of Bearing *4½"* Material *"*No. of Crosshead Bolts (each) *2* Diar. over Thrd. *2½"* Thrds. per inch *4* Material *Steel*" Crank Pin " " *2* " *2½"* " " " "" Main Bearings *6* Lengths *9"*" Bolts in each *2* Diar. over Thread *2"* Threads per inch *4½"* Material *Steel*" Holding Down Bolts, each Engine *46* Diar. *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 *G. Rowan & Co Ltd*

Piston " " " " " "

Crossheads, " " " " " "

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

Piston " " " " " "

Crossheads, " " " " " "

Date of Harbour Trial *6/4/25*" Trial Trip *9/4/25*Trials run at *Skermorie*Were the Engines tested to full power under Sea-going conditions? *Yes light ship*If so, what was the I.H.P.? Revols. per min. *128.*Pressure in 1st I.P. Receiver, *33* lbs., 2nd I.P., *—* lbs., L.P., *9* lbs., Vacuum, *26.5* ins.Speed on Trial *9.25*

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

data:—

Builders' estimated I.H.P. *1000*Revols. per min. *87.*

Estimated Speed



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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 Astern	
1	1	1	1	1
2	1	1	1	1
3	1	1	1	1
4	1	1	1	1
5	1	1	1	1
6	1	1	1	1
7	1	1	1	1
8	1	1	1	1
9	1	1	1	1
10	1	1	1	1
11	1	1	1	1
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84	1	1	1	1
85	1	1	1	1
86	1	1	1	1
87	1	1	1	1
88	1	1	1	1
89	1	1	1	1
90	1	1	1	1
91	1	1	1	1
92	1	1	1	1
93	1	1	1	1
9				

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

Estimated Pressure per lineal inch

Diar. of 2nd Reduction Pinion		Pitch of Teeth
	} Width	

Estimated Pressure per lineal inch

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

At the beginning of the trial were seen that all power records were not obtained and following estimated

" " L.P. " "

1st Reduction Shaft

“ ” 2nd “ ”

" " Propeller Shaft

Total Shaft Horse Power

Date of Harbour Trial

" Trial Trip

Trials run at

Speed on Trial	Knots.	Propeller Revols. per min.	S.H.P.
----------------	--------	----------------------------	--------

Turbine Spindles forged by

„ Wheels forged or cast by

Reduction Gear Shafts forged by

Wheels forged or cast by

### DESCRIPTION OF INSTALLATION.

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### Description of Generators

Is Single or Double Reduction Gear employed ?

### Description of Motors

„ 1st „ Wheel

Width

Pitch of Teeth

Estimated Pressure per lineal inch

Diar. of 2nd Reduction Pinion

" 2nd " Wheel

Width

Pitch of Teeth

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

### 3 Trial Trip

Trials run at

### Speed on Trial

Knots. Propeller Revols. per min.

S.H.P.

## Makers of Turbines

## Generators

Meters

### Reduction Gear

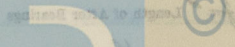
Turbine Spindles forged by

Wheels forged or cast by

Reduction Gear Shafts forged by

Wheels forged or cast by

### DESCRIPTION OF INSTALLATION.

The logo for the Lloyd's Register Foundation. It features a large, stylized 'L' and 'R' in white, set against a blue background. To the right of the letters, the text '© 2021' is displayed in a large, bold, black font. Below the 'L' and 'R', the words 'Lloyd's Register' are written in a smaller, black, sans-serif font, and below that, the word 'Foundation' is written in a larger, bold, black, sans-serif font.



## 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 " "

*13 1/8"*

"

*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

*Stone - 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" for*

Length of After Bearings

*3'-6"*

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?

*Sea-water lubrication*

## SKETCH OF CRANK SHAFT.

Same as No 813.  
 5/5 NORMAN B. HADPHERSON.



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No. of Blades each Propeller *4* Fitted or Solid? *Fitted*  
 Material of Blades *Steel* Boss *Cast Iron*  
 Diam. of Propellers *12'-6"* Pitch *12'-0"* Surface (each) *44* S. ft.  
 Coefficient of Displacement of Vessel at  $\frac{1}{2}$  Moulded Depth *'84.*

Crank Shafts Forged by *Vickers Ltd. Sheffield* Material *I. S.*  
 " Pins " " " " " "  
 " Webs " " " " " "  
 Thrust Shafts " " " " " "  
 Intermed. " " *(none)* " " " "  
 Propeller " " " " " "  
 Crank " Finished by *D. Rowan & Co. Ltd.*  
 Thrust " " " " " "  
 Intermed. " " " " " "  
 Propeller " " " " " "

STAMP MARKS ON SHAFTS.

B. C.  
 No 3260  
 G. H. L.  
 19.2.25.

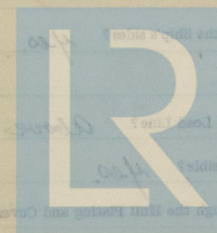
1 CRANK SHAFT

1 THRUST "

1 PROPELLER "

# SKETCH OF PROPELLER SHAFT.

Same as No 813  
 S/S NORMAN B. HADPHERSON.



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Worked by Main or Independent Engines? *by links from H.P. engine*

Edwards type

Type of " Double-acting plunger.

Has each Pump a Bilge Suction with Non-return Valve? *Neo* Diar. *6*<sup>4</sup>

What other Pumps can circulate through Condenser? *Any circulating, and*

ballast pumps

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 — 1

What other Pumps can feed the Boilers? *General donkey (Weir's)*

No. of Bilge Pumps on Main Engine 2      Diam. 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*

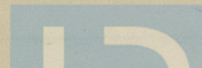
Are they placed so as to be easily accessible? *Yes.*

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.*



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## BOILERS.

Works No. **814**

No. of Boilers **2** Type **Cyl. multi.**

Single or Double-ended **Single.**

No. of Furnaces in each **Two**

Type of Furnaces **Brighton**

Date when Plan approved **13/9/24.**

Approved Working Pressure **180 lbs/□"**

Hydraulic Test Pressure **320 "**

Date of Hydraulic Test **2/3/25**

" when Safety Valves set **6/4/25**

Pressure at which Valves were set **185 lbs/□"**

Date of Accumulation Test **6/4/25**

Maximum Pressure under Accumulation Test **4 lbs**

System of Draught **closed ashpits (Hawdens forced draught)**

Can Boilers be worked separately? **Yes.**

Makers of Plates **Friedrich Krupp, Essen. ✓**

" Stay Bars **Lanarkshire Steel Co. Ltd. ✓**

" Rivets **N.W. Rivet, Bolt & Nut Co. Ltd.**

" Furnaces **John Marshall & Co. ✓**

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

" " Length " **10'-10 7/8"**

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**

## MARKS ON BOILERS.

**B. C.**  
**Nº 4901.**  
**TEST PRESS. 320 lbs.**  
**WORK. " 180 "**  
**G. M. L.**  
**2/3/25**



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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? *—*

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

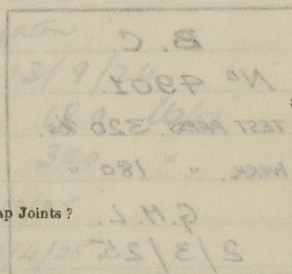
Are these Seams Hand or Machine Riveted?

Diar. of Rivet Holes

Pitch

Size of Manholes in Shell

Dimensions of Compensating Rings



*5/8" NORMAN B. MACPHERSON*

*Scantlings as N° 813.*



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Thickness of End Plates in Steam Space Approved *Plates*

" " " " " in Boilers *Boiler*

Pitch of Steam Space Stays *Boiler*

Diar. " " " " Approved Threads per Inch

" " " " " in Boilers " "

Material of " " " "

How are Stays Secured? *Approved*

Diar. and Thickness of Loose Washers on End Plates

" " " " Riveted " " "

Width " " Doubling Strips " "

Are the Bolt Groups Single or Double?

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 " " " " Pitch

Are Stays fitted with Nuts outside? *Boiler*

Are these Stays Fixed or Machine Secured?

Thickness of Back End Plates at Bottom Approved

" " " " " in Boilers

Pitch of Stays at Wide Spaces between Fireboxes

Thickness of Doublings in " "

Are the Rows of Stays in Back End Connections?

Thickness of Front End Plates at Bottom Approved

" " " " " in Boilers

No. of Longitudinal Stays in Spaces between Furnaces

Direction of Compensating Stays

*Scantlings as No 8/3.*

*% nominal & 1/2 inch*

Diag. 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 Diag. of Tubes

Material

Thickness of Furnace Plates Approved

" " " " in Boilers

Stays outside Diag. of Furnaces

Length between Tube Plates

Width of Compensation Chambers (Front to Back)

Thickness of " " " "

Pitch of second stays in C.C. tube



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*1/2 inch B. 1/2 inch*

*2 inch 1/2 inch*



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 O.C. Tops

*Scantlings as No 813.*

*S/S "NORMAN B. MACPHERSON."*

Threads per Inch

" " in Boilers

Material " " " "

Thickness of Combustion Chamber Plates Approved

" " in Boilers

Pitch of Screwed Stays in O.C. Tops

Threads per Inch

" " in Boilers

Material " " " "

Thickness of Combustion Chamber Plates Approved

" " in Boilers

Pitch of Screwed Stays in O.C. Tops

Threads per Inch

" " in Boilers

Material " " " "

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

Thickness of Combustion Chamber Plates

% of Grinders over each Wind Chamber

" " " "



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Diam. 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

Diam. " " Approved Threads per Inch

" " " in Boilers

Material " "

Thickness of Combustion Chamber Backs Approved

" " " " in Boilers

Pitch of Screwed Stays in C.O. Backs

Diam. " " 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

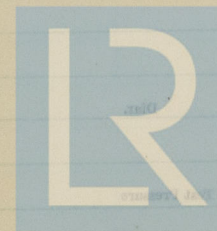
Size of Lower Manholes

*Scantlings as No 8/3.*

# VERTICAL DONKEY BOILERS

No. of boilers  
Type  
Greatest Int. Diam.  
Height of Boiler Crown above Fire Grate  
Are Boiler Crowns Flat or Dished?  
Internal Bending of Dished Ends  
Description of Seams in Boiler Crowns  
Diam. of River Holes  
Height of Firebox Crown above Fire Grate  
Are Firebox Crowns Flat or Dished?  
External Bending of Dished Crowns  
No. of Crown stays  
Diam.  
Material  
External Diam. of Firebox at Top  
Bottom  
Thickness of Plates  
No. of Water Tubes  
Material of Water Tubes  
Size of Manholes in Shell  
Dimensions of Combustion Flue  
Heating surface, each boiler  
Gross surface

## SUPERHEATERS



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## VERTICAL DONKEY BOILERS.

No. of Boilers in 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

Radius, Welded or Seamed

Internal Diar.

Thickness

How are Flanges secured?

Date of Hydraulic Test

Test Pressure

No. of Pipes

Material

Radius, Welded or Seamed

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 vanishing thread
Date of Hydraulic Test	2/4/25
Test Pressure	540 lbs/sq"

## SUPERHEATERS

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

## LIST OF EVAPORATORS.

No.	1
Description	Boiler for steam
Material	Steel
Working Pressure	100 lbs/sq"
Date of Test	2/4/25
Test Pressure	110 lbs/sq"

No.	2
Description	Boiler for steam
Material	Steel
Working Pressure	100 lbs/sq"
Date of Test	2/4/25
Test Pressure	110 lbs/sq"

## FEED WATER FILTERS

No.	1
Description	Boiler for steam
Material	Steel
Working Pressure	100 lbs/sq"
Date of Test	2/4/25
Test Pressure	110 lbs/sq"



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## EVAPORATORS.

No.	Type	Tons per Day
Makers	<i>None fitted</i>	
Working Pressure	Test Pressure	Date of Test
Date of Test of Safety Valves under Steam		

## FEED WATER HEATERS.

No.	Type		
Makers	<i>Surface Heating</i>		
Working Pressure	Test Pressure	Date of Test	
<i>Shell 15 lbs</i>	<i>Shell 150</i>	<i>25/2/25</i>	
<i>tubes 185</i>	<i>tubes 432</i>	<i>27/2/25</i>	

## FEED WATER FILTERS.

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

## LIST OF DONKEY PUMPS.

*Ballast Pump* :- *Rowans*  
*Suctions* :- *Sea, tanks, bilges.*  
*Discharges* :- *Condenser, tanks, deck, overboard.*

*Aux. Circulating Pump* :- *Rowans.*  
*Suctions* :- *Sea, bilge*  
*Discharges* :- *Overboard, condenser, culinary tank*

*Aux. Feed Pump* :- *Weirs*  
*Suctions* :- *Tanks, hotwell or condenser, boilers*  
*Discharges* :- *Heater or aux. feed range, ash ejector*  
*deck or overboard.*

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



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No. of Top End Bolts.	No. of Bot. End Bolts.	No. of Cylinder Cover Studs
" Coupling Bolts 1 set	" Main Bearing Bolts 2	" Valve Chest " } 12
" Junk Ring Bolts	" Feed Pump Valves 1 set	" Bilge Pump Valves 1 set
" H.P. Piston Rings /	" L.P. Piston Rings /	" L.P. Piston Rings /
" " Springs	" " Springs	" " Springs 1 set
" Safety Valve " /	" Fire Bars 1/4 set each boiler	" Feed Check Valves 2 main 2 aux
" Piston Rods	" Connecting Rods	" Valve Spindles
" Air Pump Rods	" Air Pump Buckets	" Air Pump Valves
" Cir. "	" Cir. "	" Cir. "
" Crank Shafts	" Crank Pin Bushes 1 pair	" Crosshead Bushes 1 pair
" Propeller Shafts	" Propellers	" Propeller Blades 2. C. S.
" Boiler Tubes	" Condenser Tubes 12	" Condenser Ferrules 24

Quantity bolts nuts round bar, iron & brass chets.



## REFRIGERATORS.

No. of Machines *2* Capacity of each *2 1/2 tons*  
 Makers *Refrigerating Co. Ltd. London*  
 Description *Two single cylinder vertical compressors with evaporators in brine tanks*  
 No. of Steam Cylinders, each Machine *1* No. of Compressors *2* No. of Cranks *2*  
 Particulars of Pumps in connection with Refrigerating Plant and whether worked by Refrigerating Machines or Independently *Two pumps for brine, one for water*

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.
Engine Room	54	54		
Capacity	37	100	100	
Current at beginning of Trial	100	100		
Single or Double Wire System	Double			
Position of Machinery	Engine Room			
Main Switch Board	Engine Room			
No. of Circuits to which Switches are connected on Main Switch Board	4			
Particulars of Tests				
Run up	54	100	100	
Test	58	100		
Engine Room	54	100		
Space				

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



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REPORT ON THE

Time required to start the engine	Time required to stop the engine	Time required to start the engine	Time required to stop the engine	Time required to start the engine

No. of Steam Cylinders, each Machine

Particulars of Engine in connection with Refrigeration Plant and whether carried by Refrigerating Machine

or Independent

# ELECTRIC LIGHTING.

Installation Fitted by

*Claude Hamilton*

No. and Description of Dynamos

*One direct coupled compound dynamo.*

Makers of Dynamos

*Newtons Ltd*

Capacity

*37*

Ampères, at

*110*

Volts,

*600*

Revol. per Min.

Current Alternating or Continuous

*Continuous*

Single or Double Wire System

*Double*

Position of Dynamo

*Engine room, starboard side*

„

Main Switch Board

*Beside dynamo.*

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

*4 1 spare.*

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>Accom aft.</i>	<i>34</i>	<i>16</i>	<i>12</i>	<i>7/036</i>	<i>1EE</i>	<i>100 gr.</i>	<i>600 meg.</i>
<i>" 40s</i>	<i>38</i>	<i>"</i>	<i>13.5</i>	<i>7/036</i>	<i>"</i>	<i>"</i>	<i>"</i>
<i>Engine room</i>	<i>20</i>	<i>"</i>	<i>7.5</i>	<i>7/036</i>	<i>"</i>	<i>"</i>	<i>"</i>
<i>Spare</i>	<i>—</i>	<i>—</i>	<i>—</i>	<i>—</i>	<i>—</i>	<i>—</i>	<i>—</i>

Total No. of Lights

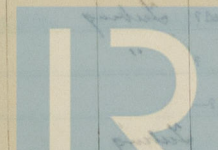
*92*

No. of Motors driving Fans, &c.

No. of Heaters

Current required for Motors and Heaters

—



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Positions of Auxiliary Switch Boards, with No. of Switches on each *None*

*Installation fitted by 2 Electricians*  
*No. and Description of Dynamos*  
*21*  
*Capacity*  
*Current Alternating or Continuous*  
*Single or Double Wire System*  
*Position of Dynamos*  
*Main Switch Board*  
*No. of Circuits to which Switches are provided on Main Switch Board*

Position of Dynamos	Capacity	Current Alternating or Continuous	Single or Double Wire System	Position of Dynamos	Main Switch Board	No. of Circuits to which Switches are provided on Main Switch Board
---------------------	----------	-----------------------------------	------------------------------	---------------------	-------------------	---

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. *3/029* S.W.G., Largest, No. *7/064* S.W.G.

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

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

What special protection is provided in the following cases?—

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

(2) " " passing through Bunkers or Cargo Spaces *No*

(3) " " Deck Beams or Bulkheads *No*

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 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? *Yes*

What does the Resistance amount to? *2 meg.*

Is the Installation supplied with a Voltmeter? *Yes*

" " " an Ampere Meter? *Yes*

Date of Trial of complete Installation *9/4/25* Duration of Trial *6 hours*

Have all the requirements of Section 42 been satisfactorily carried out? *Yes - See pp 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 stated below.*

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

*V.I.R. cable (braided) in conduits fitted in machinery spaces in lieu of lead-covered cable. (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*

Is the Workmanship throughout thoroughly satisfactory? *Yes*

The above correctly describes the Machinery of the S.S. *"JOHN B. RICHARDS"*

as ascertained by <sup>us</sup> ~~me~~ from personal examination

What special provision is provided in the following cases?

(1) Confinement exposed to Heat or Damp

(2) Exposure through Breakdown of Machinery

(3) Deck Damage or Disturbance

*Eco. 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.F.O.	Cub. ft.	:	:
--------	----------	---	---

£	:	:
---	---	---

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

£	:	:
---	---	---

Expenses ...	:	:
--------------	---	---

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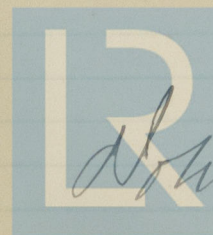
It is submitted that this Report be approved,

*John King*  
 Chief Surveyor.

Approved by the Committee for the Class of M.B.S.\* on the 10<sup>th</sup> February 1926

Fees advised

Fees paid



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 Secretary.



1874

## Visits

$$\overline{30} \overline{9} / 24.$$

30/10/24.

3/11/24.

21 "

9/12/24.

151

16

19

18 "

23 11

24

30

9/1/25

14

20

22

26

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← 29 vents





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