

file in L.R. System

No. 1144

THE BRITISH CORPORATION FOR THE SURVEY  
AND  
REGISTRY OF SHIPPING.

Report No. 1122

No. in Register Book 1718

*Proteus*

*Lucas  
Traders*

S.S. "KELBERGEN"

Makers of Engines SCOTIA ENGINE WKS.

Works No. 2102

Makers of Main Boilers SCOTIA ENGINE WKS.

Works No. 2102

Makers of Donkey Boiler ✓

Works No. ✓

MACHINERY.



© 2020

Lloyd's Register  
Foundation



004049-004054-0029



No.

THE BRITISH CORPORATION FOR THE SURVEY  
AND  
REGISTRY OF SHIPPING.

Report No. *1122*, No. in Register Book *1718*.

Received at Head Office *27 JUL 1914*

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

Port of Registry

Registered Owners

Surveyor's District

Date of Completion of Engines

" " " Main Boilers

" " " Donkey

Trial Run at

First Visit

Total Number of Visits

*Kellbergen*

*Rotterdam*

*Thames Shipping & Agency  
Co.*

*Sunderland*

*6.1914*

*6.1914*

*North Sea*

*20. 6. 14*

*17. 12. 13*

*20. 6. 14*



© 2020

Lloyd's Register  
Foundation



## ENGINES.

Made by *Richardsons, Wedgwick & Co. Ltd.*  
 " at *Chanderland* Works No. *2102*  
 Description *Triple Expander, Surface Con., 3 Cyl.*  
 No. of Cylinders, each Engine *3* Diars. *25" 40" 68"* Stroke *48"*  
 Cub. feet in each L.P. Cyl. *100.88* Revols. per Min. *77* I.H.P.  
 Pressure in I.P. Receiver at full Power *63 lbs* 2nd I.P. *-* L.P. *12.5 lbs*  
 Thickness of Metal in I.P. Cylr. *1"* I.P. *1 1/4"* " *1 1/4"*  
 " " " " Liner *1 1/4"* " " " "  
 " " " " Valve Chest *1 1/8"*  
 Are Spring-loaded Relief Valves fitted to Top and Bottom of each Cylr.? *Yes*  
 " " " " each Receiver? *Yes*  
 Number of ~~Studs~~ in I.P. Cylr. Cover *22* I.P. *14* 2nd I.P. *-* L.P. *34*  
 Eff. Diar. " " " *1.067"* " *1.067"* " " *1.067"*  
 Pitch " " " *4.641"* " *5.93"* " " *6.79"*  
 Type of I.P. Valves (Piston or Slide) *Piston* " *Slide* " *Slide*  
 " Valve Gear *Stephenson's link motion*  
 Diameter of Piston Rods (plain part) *6 1/4"* At Bottom of Thread *4.48"*  
 Makers " *Remy Fisher* Material *Ln*  
 Diameter of Connecting Rods (smallest part) *6 1/2"* Material *Ln*  
 Makers " *Remy Fisher*  
 Diar. of Crosshead Gudgeons *8 1/4"* Length of Bearing *10 1/2"* Material *Ln*  
 No. of Top End Bolts (each Rod) *2* Effective Diar. *3.28"* Material *Steel*  
 " Bot. " " *2* " *3.28"* " "  
 " Main Bearings *6* Lengths *13 1/2"*  
 " Bolts in each *2* Effective Diar. *2.787"* Material "

No. of Holding Down Bolts, each Engine

No. of Metal Chocks

Eff. Diar. " " "

*1.162"*

Average Pitch

*2 1/2"*

Are the Engines bolted directly to the Tank Top?

*Yes*

Are the Bolts tapped through the Tank Top and fitted with Nuts inside

*Yes*

Date of Test of Tank by Water Pressure with Holding Down Bolts in place

*20. 6. 14*

## SKETCHES.



© 2020

Lloyd's Register  
Foundation



## SKETCHES.

SKETCHES.

## SHAFTING.

Are Crank Shafts Built?  $\frac{1}{2}$  No. of Lengths in each 6 Angle of Cranks  $120^\circ$   
 Diam. of Crank Shafts by Rule  $13.08"$  Actual  $13\frac{1}{2}"$  Diam. in Way of Webs  $14"$   
 Makers of " *Quincy Humphreys & Co.* Material *S.P.*  
 Diam. of Crank Pins  $14"$  Diam. in Way of Web  $14"$   
 Makers of " *Quincy Humphreys & Co.* Material *S.P.*  
 Width across Crank Webs at Centre of Shaft  $26"$  Thickness  $8\frac{1}{2}"$   
 " " " " Crank Pins  $26"$   $8\frac{1}{2}"$   
 " " " " Narrowest part  $20\frac{1}{8}"$   $8\frac{1}{2}"$   
 Makers of Crank Webs *Lanarkshire Steel Co.* Material *S.P.*  
 Diam. ~~of~~ Keys in Crank Webs  $3\frac{1}{4}"$  Length  $8"$   
 " of Dowel Pins in Crank Pins  $2\frac{1}{4}"$  Length  $8"$  ~~of~~ Plain  $18\frac{3}{4}"$   
 No. of Bolts in each Coupling 6 Diam. at Mid Length  $3"$  Diam. of Pitch Circle  $18\frac{3}{4}"$   
 Material of Coupling Bolts *Steel*  
 Crank Shafts Finished by *Richardson, Briggs & Co. L., N. York*  
 Greatest Distance from edge of Main Bearing to Crank Web  $\frac{1}{4}"$

Description of Thrust Blocks

*Adjustable*

Number " " Rings

6

Diam. of Thrust Shafts by Rule  $13.08"$  Actual (at bot. of Collars)  $13\frac{1}{2}"$  Over Collars  $21\frac{3}{4}"$   
 " " at Forward Coupling  $13"$  After Coupling  $13"$

No. of Thrust Collars 6 Thickness  $2\frac{1}{2}"$  Distance apart  $4\frac{1}{4}"$

Thrust Shafts Forged by *Quincy Humphreys & Co.* Material *S.P.*  
 " Finished by *R. W. & Co. L., Sunderland*

Diam. of Intermediate Shafting by Rule  $12.42"$  Actual  $12\frac{3}{4}"$

No. of Lengths, each Engine 6 No. of Tunnel Bearings 7

Diam. of Bearings  $13"$  Length  $18"$  Distance apart  $18"$



Rule Diar. of Crank Shaft=

8

Lloyd's Register  
Foundation



## TURBINE ENGINES.

Type

No. of H.P. Turbines

No. of L.P. Turbines

No. of Astern

How arranged

Revs. per Min.

Horse Power

Diam. of H.P. Turbine Drums

MATERIAL

THICKNESS OF METAL

Material of H.P. Turbine Casings

Lengths of Blades in H.P. Turbines

No. of Rows of Blades of each Length

Pitch of

Diam. of L.P. Turbine Drums

MATERIAL

THICKNESS OF METAL

Material of L.P. Turbine Casings

Lengths of Blades in L.P. Turbines

No. of Rows of Blades of each Length

Pitch of

Diam. of Astern Turbine Drums

MATERIAL

THICKNESS OF METAL

Material of Astern Turbine Casings

Lengths of Blades in Astern Turbines

No. of Rows of Blades of each Length

Pitch of

Diam. of Turbine Spindles

Length of Bearing

No. of Thrust Collars on each Spindle

Thickness

Distance apart

Diam. of Spindles at Bottom of Collars

Diam. over Collars

Spindles Forged by

Material

" Finished by

## SKETCHES.



© 2020

Lloyd's Register  
Foundation







## PUMPS, ETC.

No. of Air Pumps *One*  
 Type of *Edwards*  
 Diar. of Air Pump Rod *3 1/4"* Material *h. m.*  
 How are Air Pumps Worked? *By Lever from Main Engines*

No. of Centrifugal Circulating Pumps *-* Maker *-*  
 " Reciprocating " *One* Diar. *1 1/4"* Stroke *27"*  
 Diar. of Circulating Pump Rods *2 3/4"* Material *h. m.*  
 How are Circulating Pumps Worked? *By Lever from Main Engines*

Diar. of Circulating Pump Suction from Sea *9"*  
 Has each Circulating Pump a Bilge Suction with Non-return Valve? *Yes* Diar. *6"*

No. of Feed Pumps on each Engine *2* Diar. *3 1/4"* Stroke *27"*  
 Where do they pump from? *Hotwell*  
 " " discharge to? *Boilers*  
 Are Spring-loaded Relief Valves fitted to each Pump? *Yes*  
 Can one Pump be overhauled while the others are at work? *Yes*

No. of Bilge Pumps on each Engine *2* Diar. *3 3/4"* Stroke *27"*  
 Where do they pump from? *Bilges*  
 " " discharge to? *Overboard, on deck*  
 Can one Pump be overhauled while the others are at work? *Yes*

No. of Bilge Injections connected to Condensers *-* Diar. *-*  
 Are all Bilge Suctions fitted with Roses? *Yes*  
 Are the Valves, Cocks, and Pipes so arranged as to prevent unintentional connection between Sea and Bilges? *Yes*

Are all Sea Connections made with Valves or Cocks fitted direct to the Hull Plating? *Yes*

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

Are the Discharge Chests placed above the Deep Load Line? *Yes*

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*



© 2020

Lloyd's Register  
Foundation



## BOILERS.

Boilers made by

*Richardsons, Westgarth & Co. Ltd.*  
*Cardiff*

at

Works No.

*2102*

Date when Plan approved

Boiler Plates, Iron or Steel

Makers of Shell Plates

*Hill*  
*J. Spencer & Sons*

Internal Plates

Furnaces

*Leeds Forge*  
*J. Spencer & Sons*

Stay Bars

Rivets

Material tested by (B.C., B.T., etc.)

*B. C.*

No. of Boilers

*3*  
*L.F.*  
*3*

Single or Double-ended

No. of Furnaces, each Boiler

Type of Furnaces

*Horison*

Approved Working Pressure

*180 lbs.*

Hydraulic Test Pressure

*360 lbs.*

Date of Hydraulic Test

*20. 3. 14*

when Safety Valves set

*5. 6. 14*

Pressure on Valves

*185 lbs.*

Date of Steam Accumulation Test

*5. 6. 14*

Max. Pressure under Accumulation Test

*190 lbs.*

System of Draught

*Natural*

Can Boilers be worked separately?

*Yes*

Greatest inside Diam. of Boilers

*14' 6"*

Length

*10' 9 1/8"*

Square Feet of Heating Surface, each Boiler

*2172*

Grate

*55*

© 2020

Lloyd's Register  
Foundation



No. of Safety Valves, each Boiler

Diar. " " "

Area " " "

Are the Valves fitted with Easing Gear?

No. of Pressure Gauges, each Boiler

" Water " "

" Test Cocks,

" Salinometer Cocks, "

Are Water Gauge Pillars attached by Pipes to Steam and Water Spaces?

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 by Rule

" " Approved

" " in Boilers

Are the Rivet Holes Punched or Drilled?

Are Rivets Iron or Steel?

Are the Longitudinal Seams Butt or Lap Joints?

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?

Diar. of Rivet Holes

Pitch "

Width of Overlap

Percentage of Strength in Longitudinal Seams

2  
3"  
14' 14" □  
Yes  
The  
The  
2  
The  
ho  
-  
Valves

Came as P. I. Penetration  
Packed with 178

No. of Rows of Rivets in Longitudinal Seams

Are these Seams Hand or Machine Riveted?

Diar. of Rivet Holes

Pitch "

Width of Overlap

No. of Rows of Rivets in End (Transverse) Seams

Are these Seams Hand or Machine Riveted?

Diar. of Rivet Holes

Pitch "

Width of Overlap

Size of Shanks in Shell

Dimensions of Corner-Connecting Rings

Thickness of End Plates in Steam Space by Rule

" " " Approved

" " " in Boilers

Pitch of Steam Space Straps

Diar. of Rivet Holes

Pitch " " Approved

" " " in Boilers

Pitch of "

How are Straps Secured?

Diar. and Thickness of Loose Washers on End Plates

Riveted

© 2020



Lloyd's Register  
Foundation



No. of Rows of Rivets in Centre Circumferential Seams

Are these Seams Hand or Machine Riveted?

Diam. of Rivet Holes

Pitch "

Width of Overlap

No. of Rows of Rivets in End Circumferential Seams

Are these Seams Hand or Machine Riveted?

Diam. of Rivet Holes

Pitch "

Width of Overlap

Size of Manholes in Shell

Dimensions of Compensating Rings

Thickness of End Plates in Steam Space by Rule

" " " " " Approved

" " " " " in Boilers

Pitch of Steam Space Stays

Eff. Diam. " " " by Rule

" " " " " Approved

" " " " " in Boilers

Material of " " "

How are Stays Secured?

Diam. and Thickness of Loose Washers on End Plates

" " Riveted " " "

Width " " Doubling Strips " " "

Thickness of Middle Back End Plate by Rule

" " " " " Approved

" " " " " in Boilers

*Come as L. L. Ben heater  
Pickertrees 178*

Thickness of Doublings in Wide spaces between Flanges

Pitch of Stays "

Eff. Diam. of Stays by Rule

Approved " " "

" " " in Boilers

Material "

Are stays fitted with nuts outside?

Thickness of Back End Plates at Bottom by Rule

Approved " " "

" " " in Boilers

Pitch of Stays in Wide spaces between Flanges

Thickness of Doublings in " " "

Thickness of Front End Plates at Bottom by Rule

Approved " " "

" " " in Boilers

No. of Long Stays in space between Flanges

Eff. Diam. of Stays by Rule

Approved " " "

" " " in Boilers

Material of " " "

Thickness of Front End Plates at Bottom by Rule

Approved " " "

" " " in Boilers

Thickness of Doublings in Wide spaces between Flanges

Thickness of Doublings in " " "



© 2020

Lloyd's Register  
Foundation



Thickness of Doublings in Wide Spaces between Fireboxes

Pitch of Stays at " " " "

Eff. Diar. of Stays by Rule

" " " Approved

" " " in Boilers

Material "

Are Stays fitted with Nuts outside?

Thickness of Back End Plates at Bottom by Rule

" " " " " Approved

" " " " " in Boilers

Pitch of Stays at Wide Spaces between Fireboxes

Thickness of Doublings in " "

Thickness of Front End Plates at Bottom by Rule

" " " " " Approved

" " " " " in Boilers

No. of Long Stays in Spaces between Furnaces

Eff. Diar. of Stays by Rule

" " " " Approved

" " " " in Boilers

Material of "

Thickness of Front Tube Plates by Rule

" " " " Approved

" " " " in Boilers

Pitch of Stay Tubes at Spaces between Stacks of Tubes

Thickness of Doublings in " " "

" Stay Tubes at " " "

*Done as I. S. Ben-Harish  
P. S. 178*

Thickness of Doublings in Wide Spaces between Fireboxes

Thickness of Back End Plates at Bottom by Rule

Approved

in Boilers

Pitch of Stay Tubes at Wide Spaces between Fireboxes

Thickness of Doublings in " "

Thickness of Stay Tubes

Thickness of Back End Plates at Bottom by Rule

Approved

in Boilers

Thickness of Front End Plates at Bottom by Rule

Approved

in Boilers

Thickness of Doublings in Wide Spaces between Fireboxes

Thickness of Stay Tubes

Thickness of Back End Plates at Bottom by Rule

Approved

in Boilers

Thickness of Front End Plates at Bottom by Rule

Approved

in Boilers

Thickness of Doublings in Wide Spaces between Fireboxes



© 2020

Lloyd's Register  
Foundation



Are Stay Tubes fitted with Nuts at Front End?

Thickness of Back Tube Plates by Rule

" " " 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 by Rule

" " " Approved  
" " " in Boilers

Smallest outside Diar. of Furnaces

Length between Tube Plates

Width of Combustion Chambers (Front to Back)

Thickness of " " Tops, by Rule  
" " " " Approved  
" " " " in Boilers

Pitch of Screwed Stays in C.C. Tops

Ext. Diar. " " by Rule

" " " Approved  
" " " in Boilers

Material " "

Thickness of Combustion Chamber Sides by Rule

*Same as L. S. Header  
Pitch 178*

Thickness of Combustion Chamber Sides Approved

" " " in Boilers

Pitch of screw stays in C.C. sides

Ext. Diar. " " by Rule

" " " Approved

" " " in Boilers

Material

Thickness of Combustion Chamber Back by Rule

" " " Approved

" " " in Boilers

Pitch of screw stays in C.C. back

Ext. Diar. " " by Rule

" " " Approved

" " " in Boilers

Material

Are all screw stays fitted with Nuts at both ends?

Thickness of Combustion Chamber Bottom

No. of Girders over each Top Chamber

" " " " "

Height and thickness of Girders

Material of Girders

No. of stays to each



© 2020

Lloyd's Register  
Foundation



Thickness of Combustion Chamber Sides Approved

" " " " in Boilers

Pitch of Screwed Stays in C.C. Sides

Eff. Diar. " " by Rule

" " " Approved

" " " in Boilers

Material " "

Thickness of Combustion Chamber Backs by Rule

" " " " Approved

" " " " in Boilers

Pitch of Screwed Stays in C.C. Backs

Eff. Diar. " " by Rule

" " " 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

" " " Centre "

Depth and Thickness of Girders

Material of Girders

No. of Stays in each

No. of Stay Tubes, each Boiler

" " Plain " " "

Size of Lower Manholes

*Same as L.L. Boiler  
Petrograd 178*

# VERTICAL DONKEY BOILERS

1. The Donkey Boilers are Vertical the following particulars should be stated in addition to those on

Questions apply to such Boilers:-

Type of Boilers

Height of Boiler Crown above Top Grate

Are Boiler Crowns Flat or Dish?

Internal Radius of Dish Crowns

Description of Stays in Boiler Crowns

Dist. of Rivet Holes

Height of Firebox Crown above Top Grate

Are Firebox Crowns Flat or Dish?

External Radius of Dish Crowns

No. of Crown stays

External Dist. of Firebox at Top

No. of Water Tubes

Material of Water Tubes

No. of Screwed stays in Firebox sides

Are they fitted with Nuts inside?

## SUPERHEATERS

Description of superheaters

Where situated

Which points are connected to superheaters

Can superheaters be used with or without

No. of Safety Valves on superheaters

State of Hydraulic Test

Lloyd's Register  
Foundation



© 2020







## MAIN STEAM PIPES.

No. of Lengths	2	3		
Material	Copper			
Brazed, Welded, or Seamless	Lotia drawn			
Internal Diam.	4 1/2"	4 1/2"		
Thickness	5 W.G.	5 W.G.		
How are Flanges Secured?	Braced			
Date of Hydraulic Test	25.5.14	4.6.14		
Test Pressure	400 lbs.			

## REFRIGERATORS.

No. of Machines      Makers  
Description

When any part of the Vessel is to be used for the Carriage of Refrigerated Cargo the following particulars should be stated:—

Total Cubic Capacity of Refrigerated Spaces

Nature, Construction, Thickness, &c., of Insulation

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

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

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

Are Sluice Valves fitted on any of the Bulkheads of Insulated Spaces?

Are these fitted with Brass Non-return Valves?

Are they always accessible?

Are the Bilges and Bilge Rose Boxes always accessible?

Are the Steam Suctions to Bilges fitted with Non-return Valves?

Is the Machine Room effectively separated from Insulated Spaces?

" " properly Ventilated and Drained?

No. of Steam Cylinders, each Machine      Diars.

" Compressors, " " "

Diam. of Crank Shafts      No. of Cranks

Give particulars of Pumps in connection with Refrigerating Plant, and state whether worked by Refrigerating Machines or independently

No. of Machines	Name of Machine	Capacity of Machine	Capacity of Engine	Capacity of Condenser	Capacity of Evaporator	Capacity of Receiver	Capacity of Separator	Capacity of Accumulator	Capacity of Suction Pipe	Capacity of Discharge Pipe
17	16	16	16	16	16	16	16	16	16	16

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

Date of Test under Working Conditions

Fall of Temperature in Insulated Spaces

Time required to obtain this Result

Articles of Spare Gear for Refrigerating Plant carried on board



© 2020

Lloyd's Register  
Foundation







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

Lamp Room 4  
 Salon Parlor 2  
 Wheelhouse 6  
 Engine Room 1  
 Engine Room 6

Number of Lamps	Name of Circuit	No. of Circuit	Number of Lamps	Name of Circuit	No. of Circuit
17	Salon	1	17	Salon	1
10	Parlor	1	10	Parlor	1
10	Wheelhouse	1	10	Wheelhouse	1
10	Engine Room	1	10	Engine Room	1
10	Engine Room	1	10	Engine Room	1

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. 1/18 S.W.G., Largest, No. 7/14 S.W.G.

How are Conductors in Engine and Boiler Spaces protected? Wire Armoured &amp; Braided

" " Saloons, State Rooms, &amp;c., " ? Lead Covered

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

Iron Pipe

Armoured

W. T. Glass

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? Type

What does the Resistance amount to? Ohms, M

Is the Installation supplied with a Voltmeter? Yes

" " " an Ampere Meter? Yes

Date of Trial of complete Installation 20. 6. 14 Duration of Trial 6 Hours

DONKEY



© 2020

Lloyd's Register  
Foundation



## EVAPORATORS.

No. *The* Type *Horison* Tons per Day *25*  
 Makers *Richardsons, Westgarth & Co. Ltd.*  
 Working Pressure *10 lbs.* Test Pressure *Both 50 lbs.* Date of Test *9.1.14*  
*Each 400 lbs.*  
 Date of Test of Safety Valves under Steam

## FEED WATER HEATERS.

No. Type  
 Makers  
 Working Pressure Test Pressure Date of Test

## DONKEY

- *Ballast* -  
 No. of Donkeys *the*  
 Type *Horizontal*  
 Makers *Watson*  
 Single or Duplex *Duplex*  
 " Double-Acting *O.A.*  
 " *9"*  
 " *11"*  
 " *10"*  
 " Pumps  
 Stroke of "  
 Where do they pump from? *Sea, Tanks, Bilge, Bilge direct.*

Where do they discharge to? *Overboard, thro' main Condenser & Cascade filter.*

Capacity, Tons per Hour of Ballast Donkey

*150*

Diar. of Pipe required by Rule for

## FEED WATER FILTERS.

No. *The* Type *Cascade, Gravity* Size *No 3*  
 Makers *Richardsons, Westgarth & Co. Ltd.*  
 Working Pressure Test Pressure Date of Test

## FORCED DRAUGHT FANS.

No. of Fans. Diar. Revols. per min.  
 How are Fans driven?

## PUMPS.

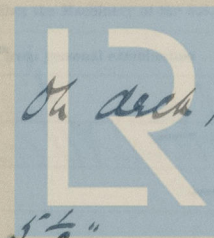
- *Feed* -  
 No. of Pumps *the*  
 Type *Horizontal*  
 Makers *Watson*  
 Single or Duplex *Duplex*  
 " Double-Acting *O.A.*  
 " *7 1/2"*  
 " *5"*  
 " *6"*  
 " Pumps  
 Stroke of "  
 Where do they pump from? *Sea, Hotwell, Tanks, Boilers*

*Boilers, On deck, Overboard*

Largest Ballast Tank

*5 1/2"*

Velocity of Water in Pipe

*530 ft. per min*

© 2020

Lloyd's Register  
Foundation



## SPARE GEAR.

No. of Top End Bolts	2	No. of Bot. End Bolts	2
" Main Bearing Bolts	2	" Coupling Bolts	1 set
" Cylr. Cover <sup>Double</sup> Studs	6	" Valve Chest Cover <sup>Double</sup> Studs	6
" Feed Pump Valves	1 set	" Bilge Pump Valves	1 set
" Safety Valve Springs	1	" Fire Bars	50
" Piston Rings	1 set for H.P.	" Junk Ring Bolts	6
" Piston Rods		" Connecting Rods	
" Valve Spindles		" Air Pump "	
" Air Pump Valves	1/2 set	" " Buckets	
" Crank Pin Bushes		" Crosshead Bushes	
" Crank Shafts		" Propeller Shafts	1
" Propellers	1	" " Blades	3
" Boiler Tubes	6	" Condenser Tubes	3

## OTHER ARTICLES OF SPARE GEAR:—

6 Piston Valve Bolts  
 1/2 set Cir. Pump Valves  
 1 set Feed Check Valves  
 50 Condenser Funnels  
 Bolts & Nuts Assorted  
 Plate & Bar Iron

## GENERAL CONSTRUCTION.

Have all the Requirements under Sections 31 and 32 of the Rules been complied with? *Yes*

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

Are the Steam Pumping Arrangements in accordance with the approved Plan? *Yes*

If not, state in what respects they differ and when such differences were sanctioned by the 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.

as ascertained by me from personal examination

"KELBERGEN"

*W.D. Carson*

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



Fees—

GENERAL CONSTRUCTION

## MAIN BOILERS.

H.S.

657/6

Sq. ft.

21 : 0 : 0

G.S.

165

## DONKEY BOILERS.

H.S.

-

Sq. ft.

:

:

G.S.

-

124 for H.P.

:

:

## ENGINES.

L.P.C.

100.88

Cub. ft.

21 : 0 : 0

Testing, &amp;c.

£

:

:

Expenses

£

:

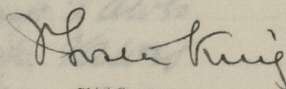
:

Total

£

42 : 0 : 0

It is submitted that this Report be approved,



Chief Surveyor.

Approved by the Committee,

for the class of M.B.S.\*

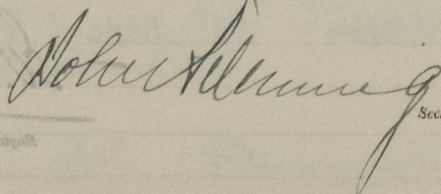
24/7/14,

Fees applied for

15/6/14

Fees paid

10/7/14



Secretary.



© 2020

Lloyd's Register  
Foundation



Page

Main Balance

65/6 21 0 0  
 165

Double Balance

M.C. 20 00

G.S.

Balance

100/11 21 0 0

Balance

Expense

200 142 0 0

It is submitted that this Report be approved.

Chris King  
 Clerk

Approved by the Committee

for the year of 1983

20/1/84

Transmitted on

15/1/84

Date paid

10/2/84

Robert Manning



© 2020

Lloyd's Register  
 Foundation





© 2020

Lloyd's Register  
Foundation





© 2020

Lloyd's Register  
Foundation





© 2020

Lloyd's Register  
Foundation