

No. 584

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. 554 No. in Register Book 1077

S.S. "Canadian"

Makers of Engines *Wallsend Slipway & Eng*
C^o. Ltd

Works No. 645

Makers of Main Boilers *Wallsend Slipway*
& Eng C^o. Ltd

Works No. 645

Makers of Donkey Boiler ✓

Works No. ✓

MACHINERY.



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Report No. 554 No. in Register Book 1077

Received at Head Office 11th September 1904

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

Port of Registry Newcastle on Tyne

Registered Owners J. W. Norcross

Surveyor's District Newcastle

Date of Completion of Engines 8-07

" " " Main Boilers 8-07

" " " Donkey " ✓

Trial Run at off Whitley Bay Date 12-8-07

First Visit 20-3-07 Last Visit 13-8-07

Total Number of Visits 24

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ENGINES.

Made by *Wallernd Slipway & Eng Co. Ltd.*
 " at *Wallernd* Works No. *645*
 Description *Invented direct acting triple expansion S. E.*
 No. of Cylinders, each Engine *3* Diars. *19" 32" 52"* Stroke *26"*
 Cub. feet in each L.P. Cylr. *44' 2* Revs. per Min. *93* I.H.P. *1100*
 Pressure in I.P. Receiver at full Power *65* 2nd I.P. *✓* L.P. *13'*
 Thickness of Metal in H. P. Cylr. *1"* I.P. *1 1/4"* " *✓* " *1 1/4"*
 " " " " Liner *1 1/8"* " *✓* " *✓* " *✓*
 " " " " Valve Chest *1"* " *1"* " *✓* " *1"*
 Are Spring-loaded Relief Valves fitted to Top and Bottom of each Cylr.? *yes*
 " " " " each Receiver? *yes*
 Number of Bolts in H.P. Cylr. Cover *19* I.P. *19* 2nd I.P. *✓* L.P. *21*
 " " " " " *1 1/4"* " *1 1/4"* " *✓* " *1 1/4"*
 Pitch " " " *4 1/2"* " *5 7/8"* " *✓* " *8 7/16"*
 Type of H.P. Valves (Piston or Slide) *piston*
 " Valve Gear *ordinary link motion*
 Diameter of Piston Rods (plain part) *5"* At Bottom of Thread *3' 68*
 Makers " *J. Spencer & Sons* Material *1. S.*
 Diameter of Connecting Rods (smallest part) *5"* Material *1. S.*
 Makers " " *J. Spencer & Sons*
 Diar. of Crosshead Gudgeons *5 1/4"* Length of Bearing *9 3/4"* Material *1. S.*
 No. of Top End Bolts (each Rod) *2* Effective Diar. *2' 68* Material *1. S.*
 " Bot. " " *2* " *2' 68* " *1. S.*
 " Main Bearings *6* Lengths *10 1/4"*
 " Bolts in each *2* Effective Diar. *2' 18* Material *1. S.*

No. of Holding Down Bolts, each Engine *48* No. of Metal Checks *48*
 " " " " *1 1/4"* Average Pitch *14" 120"*
 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 *10 1/2"*

SKETCHES.



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SKETCHES.

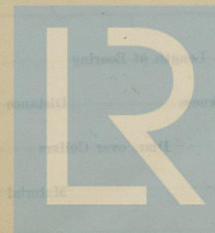
SHAFTING.

Are Crank Shafts Built? *yes* No. of Lengths in each *3* Angle of Cranks *120°*
 Diar. of Crank Shafts by Rule *9.88* Actual *10 1/2"* Diar. in Way of Webs *10 3/4"*
 Makers of " *John Spencer & Sons* Material *1. S.*
 Diar. of Crank Pins *10 1/2"* Diar. in Way of Web *10 1/2"*
 Makers of " *John Spencer & Sons* Material *1. S.*
 Width across Crank Webs at Centre of Shaft *2 1/2"* Thickness *7"*
 " " " " Crank Pins *2 1/2"* *7"*
 " " " " Narrowest part *2 1/2"* *7"*
 Makers of Crank Webs *John Spencer & Sons* Material *1. S.*
 Diar. or Breadth of Keys in Crank Webs *2 1/4"* Length *4 1/4"*
 " of Dowel Pins in Crank Pins ☒ Length ☒ Screwed or Plain ☒
 No. of Bolts in each Coupling *6* Diar. at Mid Length *2 5/8"* Diar. of Fitch Circle *15 1/2"*
 Material of Coupling Bolts *2. S.*
 Crank Shafts Finished by *Wallernd Slipway & Eng Co. Ltd*
 Greatest Distance from edge of Main Bearing to Crank Web *1/4"*
 Description of Thrust Blocks *Horse Shoe*
 Number " " Rings *four*
 Diar. of Thrust Shafts by Rule *9.88* Actual (at bot. of Collars) *10 1/2"* Over Collars *19"*
 " " at Forward Coupling *10 1/2"* After Coupling *10 1/2"*
 No. of Thrust Collars *4* Thickness *2 1/4"* Distance apart *4"*
 Thrust Shafts Forged by *John Spencer & Sons* Material *1. S.*
 " Finished by *Wallernd Slipway*
 Diar. of Intermediate Shafting by Rule *none* Actual ☒
 No. of Lengths, each Engine ☒ No. of Tunnel Bearings ☒
 Diar. of Bearings ☒ Length ☒ Distance apart ☒

No. of Bolts, each Coupling ✓ Diar. at Mid Length ✓ Diar. of Pitch Circle ✓
 Intermediate Shafts Forged by ✓
 " " Finished by ✓
 Diar. of Propeller Shafts by Rule ~~11-065~~ ¹¹⁻²⁹ Actual $11\frac{1}{2}"$ At Couplings $10\frac{1}{2}"$
 Are Propeller Shafts fitted with Continuous Brass Liners? *yes*
 Diar. over Liners $12\frac{7}{8}"$ Length of After Bearings $3'10"$
 Of what Material are the After Bearings composed? *lignum vitae*
 Distance from After Bearing in Stern Tube to nearest Tunnel Bearing $4'4\frac{1}{2}"$
 Are the After Bearings lubricated with Oil or Sea Water? *Sea water*
 What means are adopted to prevent Sea Water entering the Stern Tubes? *none*
 Propeller Shafts Forged by *John Spencer & Sons* Material *I. S.*
 " " Finished by *Walland Slipway & Dry Dock Co. Ltd*

No. of Propellers *One* Diar. $13'0"$ Pitch $12'9"$
 " Blades, each Propeller *4* Fitted or Solid *fitted*
 Material of Blades *cast iron* Boss *cast iron*
 Surface, each Propeller *60 #* Diar. of Propeller Rule Diar. of Crank Shaft = *15*
 Coefficient of Displacement of Vessel at $\frac{1}{2}$ Moulded Depth *.828*

SKETCHES.



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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.



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SKETCHES.

SKETCHES.

No. of Air Pumps 10
 Type of " Simplex
 Dis. of Air Pump Rod 2 1/4"
 How are Air Pumps Worked? by hand

No. of Compressor Pumps 10
 Type of " Simplex
 Dis. of Compressor Pump Rod 2 1/4"
 How are Compressor Pumps Worked? by hand

No. of Charging Pumps 10
 Type of " Simplex
 Dis. of Charging Pump Rod 2 1/4"
 How are Charging Pumps Worked? by hand

No. of Lift Pumps 10
 Type of " Simplex
 Dis. of Lift Pump Rod 2 1/4"
 How are Lift Pumps Worked? by hand

No. of Bilge Pumps 10
 Type of " Simplex
 Dis. of Bilge Pump Rod 2 1/4"
 How are Bilge Pumps Worked? by hand

No. of Bilge Pumps 10
 Type of " Simplex
 Dis. of Bilge Pump Rod 2 1/4"
 How are Bilge Pumps Worked? by hand

No. of Bilge Pumps 10
 Type of " Simplex
 Dis. of Bilge Pump Rod 2 1/4"
 How are Bilge Pumps Worked? by hand



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PUMPS Etc

No. of Air Pumps *one* Diar. *16"* Stroke *20"*
 Type of " *Single acting*
 Diar. of Air Pump Rod *2 3/4"* Material *gunny metal*
 How are Air Pumps Worked? *by main Engines*

No. of Centrifugal Circulating Pumps *one* Maker *Hy Watson & Co.*
 " Reciprocating " *✓* Diar. *✓* Stroke *✓*
 Diar. of Circulating Pump Rods *Spindle 2 1/4"* Material *brass*
 How are Circulating Pumps Worked? *direct off Single Cylinder Engine.*

Diar. of Circulating Pump Suction from Sea *8"*
 Has each Circulating Pump a Bilge Suction with Non-return Valve? *yes* Diar. *5 1/2"*

No. of Feed Pumps on each Engine *none* Diar. Stroke
 Where do they pump from?
 " " discharge to?
 Are Spring-loaded Relief Valves fitted to each Pump?
 Can one Pump be overhauled while the others are at work?

No. of Bilge Pumps on each Engine *2* Diar. *3"* Stroke *20"*
 Where do they pump from? *all bilges and Sea,*
 " " discharge to? *to deck and overboard.*
 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*

Warrington Vertical Duplex, main Feed Pumps 7 1/2" x 5" 12"
Pumps from hotwell & Condenser and discharges to main Boilers & overboard.



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BOILERS.

Boilers made by *Wallernd Slipway & Eng Co^o Ltd.*
 " at *Wallernd.*
 Works No. *645*
 Date when Plan approved *5-3-07*
 Boiler Plates, Iron or Steel *Steel*
 Makers of Shell Plates *John Spencer & Sons*
 " Internal Plates " " "
 " Furnaces " " "
 " Stay Bars " " "
 " Rivets *J. Miller & Co^o*
 Material tested by (B.C., B.T., etc.) *B.C. & B.T.*
 No. of Boilers *Two*
 Single or Double-ended *Single ended*
 No. of Furnaces, each Boiler *3*
 Type of Furnaces *Plain*
 Approved Working Pressure *180 lbs*
 Hydraulic Test Pressure *360 lbs*
 Date of Hydraulic Test *2-5-07*
 " when Safety Valves set *4-8-07*
 Pressure on Valves *180 lbs*
 Date of Steam Accumulation Test *4-8-07*
 Max. Pressure under Accumulation Test *185 lbs*
 System of Draught *Natural*
 Can Boilers be worked separately? *Yes*
 Greatest Inside Diam. of Boilers *12' 9 3/4"*
 " " Length " *9' 11 1/8"*
 Square Feet of Heating Surface, each Boiler *1500*
 " Grate " " *51*



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No. of Safety Valves, each Boiler *2*Diar. " " " *2 3/4"*Area " " " *11.8*Are the Valves fitted with Easing Gear? *yes*No. of Pressure Gauges, each Boiler *One*" Water " " *One*" Test Cocks, " *Two*" Salinometer Cocks, " *One*Are Water Gauge Pillars attached by Pipes to Steam and Water Spaces? *no*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 *One*" Plates in each Strake *Two*Thickness of Shell Plates by Rule *16.3*
76" " Approved *1 1/8"*" " in Boilers *1 1/8"*Are the Rivet Holes Punched or Drilled? *drilled*Are Rivets Iron or Steel? *Steel*Are the Longitudinal Seams Butt or Lap Joints? *Butt*Are the Double Butt Straps of equal width? *yes*Thickness of outside Butt Straps *1 1/8"*" inside " *1 1/16"*Are Longitudinal Seams Hand or Machine Riveted? *machine*Are they Single, Double, or Treble Riveted? *Treble*Diar. of Rivet Holes *1 1/32*Pitch " *8 3/8"*Width of Overlap *18"*Percentage of Strength in Longitudinal Seams *85.4% Plate 92.3% Rivet*

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

Are these Seams Hand or Machine Riveted? *Back machine, Front hand*

Diam. of Rivet Holes *1 5/16"*

Pitch *4.47*

Width of Overlap *6 1/4"*

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

Are these Seams Hand or Machine Riveted? *Back machine, Front hand*

Diam. of Rivet Holes *1 5/16"*

Pitch *4.47*

Width of Overlap *6 1/4"*

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

Dimensions of Compensating Rings *in c. heels door & doubling*

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? *nuts & washers in & out.*

Diam. and Thickness of Loose Washers on End Plates *1/4"*

" " Riveted " " " ✓

Width " " Doubling Strips " " " ✓

Thickness of Middle Back End Plate by Rule ✓

" " " " " Approved ✓

" " " " " in Boilers ✓



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Thickness of Doublings in Wide Spaces between Fireboxes ✓

Pitch of Stays at " " " " ✓

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 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. Diam. 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 " " "

No 3² x 9⁴13³ x 9⁴

1.69

1.71

Steel

yes

13.9

7/8"

7/8"

one 2 3/4" stay

15.7

1"

1"

one

2.00

2.547

2.547

Steel

13

7/16"

1"

1"

13 1/2" centres

✓

5/16"

The 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

" " " " "

Thickness of Stay Tubes

" " " " "

External Diam. of Tubes

Material " " "

" " " " "

Thickness of Furnace Plates by Rule

" " " Approved

" " " in Boilers

Smallest outside Diam. of Furnace

Length between Tube Plates

" " " " "

Width of Combustion Chambers (Front to back)

Thickness of " " " by Rule

" " " Approved

" " " in Boilers

Pitch of Stay Tubes in C.C. Tube

" " " by Rule

" " " Approved

" " " in Boilers

" " " " "

Thickness of Doublings in " " "



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Thickness of Combustion Chamber Sides Approved *centre 2 1/2" wings 2 2/3"*

" " " " in Boilers

Pitch of Screwed Stays in C.C. Sides

9" x 8 1/2"

Eff. Diar. " " by Rule

1.54

" " " Approved

1 3/4"

" " " in Boilers

Material " "

Steel

Thickness of Combustion Chamber Backs by Rule

10 7/16"

" " " Approved

11 1/16"

" " " in Boilers

Pitch of Screwed Stays in C.C. Backs

Centre 9 1/4" x 7 1/8" wings 9 1/4" x 9 1/4"

Eff. Diar. " " by Rule

1.54

" " " Approved

centre rows 17/8" inner 1 3/4"

" " " in Boilers

Material " "

Steel

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

*yes
7/8"*

Thickness of Combustion Chamber Bottoms

No. of Girders over each Wing Chamber

*Three
Two*

" " " Centre "

Depth and Thickness of Girders

8" x 3/4"

Material of Girders

Steel

No. of Stays in each

2

No. of Stay Tubes, each Boiler

Wings 29 Centre 33.

" " Plain " "

" 44 " 41

Size of lower Manholes

16" x 12"

If the Donkey Boilers are Vertical the following particulars should be stated in addition to those on

previous pages applicable to such boilers.

Type of Boiler

Height of Boiler Crown above Fire Grate

Are Boiler Crown Flat or Dishd?

Internal Radius of Dishd Ends

Description of Booms or Boiler Crown

Dist. of Heat Hole

Height of Firebox Crown above Fire Grate

Are Firebox Crown Flat or Dishd?

External Radius of Dishd Crown

No. of Crown Stays

External Dist. of Firebox at Top

Thickness of Plates

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

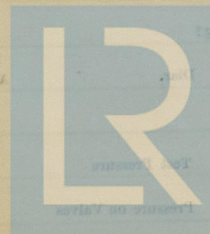
Which Boilers are connected to superheaters?

Can superheaters be used on other boilers and why?

No. of Safety Valves on superheaters

Are they fitted with lifting gear?

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MAIN STEAM PIPES.

Stampful JK

No. of Lengths	4		
Material	Ingot Steel		
Brazed, Welded, or Seamless	Solid drawn		
Internal Diam.	4"		
Thickness	1/4"		
How are Flanges Secured?	Screwed & Expanded		
Date of Hydraulic Test	Nov 14 2 18.7.07	Nov 3 & 4 19.7.07	
Test Pressure	650 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

SUPERHEATERS.

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

Machine	No. of Cylinders	Diars.	Compressors	Diam. of Crank Shafts	No. of Cranks	Particulars of Pumps
1. Ingersoll	45	16	22	5 7/16	1050	100%

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



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SKETCHES.

ELECTRIC LIGHTING.

Installation Fitted by *Falconer, Cross & Co. Newcastle*
 No. and Description of Dynamos *One multipolar compound wound*
 Makers of Dynamos *Boothroyd Hyslop & Co. Liverpool*
 Capacity " *59* Amperes, at *110* Volts, *350* Revols. per Min.
 Current Alternating or Continuous *Continuous*
 Position of Dynamos *Top platform in Eng Room on Star. Side*
 " Main Switch Board *near dynamo*
 No. of Circuits to which Switches are provided on Main Switch Board *4*

Particulars of these Circuits:—

No. of Circuit.	Name of Circuit.	Number of Lights.	Candle Power.	Current Required, Amps.	Size of Conductor.	Current Density.	Conductivity of Conductor.	Insulation Resistance per Mile.
1	<i>Forecastle</i>	45	16	22.5	7/16	<i>amps 1000</i>	100%	
2	<i>Eng. Room</i>	19	16	9.5	7/20	"	"	
3	<i>Cargo Lights</i>	22	16	11	7/20	"	"	
4	<i>Saloon & Cabins</i>	23	16	11	7/20	"	"	

Total No. of Lights

108

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 *independant*

Switches in each cabin

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. *18* S.W.G., Largest, No. *18* 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 *armoured & lead covered*
- (2) " " passing through Bunkers or Cargo Spaces *Iron pipes*
- (3) " " Deck Beams or Bulkheads *Armoured cables*

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

is unimpaired?

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?

What does the Resistance amount to?

Is the Installation supplied with a Voltmeter?

" " " an Ampere Meter?

Date of Trial of complete Installation *12-8-07* Duration of Trial *3 1/2 hours*



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EVAPORATORS. ✓

No. Type Tons per Day
 Makers
 Working Pressure Test Pressure Date of Test
 Date of Test of Safety Valves under Steam

FEED WATER HEATERS. ✓

No. Type
 Makers
 Working Pressure Test Pressure Date of Test

DONKEY

No. of Donkeys *Ballast Donkey*
 Type *One*
 Makers *Vertical*
Workington & Co.
 Single or Duplex *Duplex*
 " Double-Acting *double acting*
 Diar. of Steam Cylinders *6"*
 " Pumps *9"*
 Stroke of " *6"*
 Where do they pump from? *all tanks, bilges & Sea.*

Where do they discharge to? *through condenser*
and overboard.

Capacity, Tons per Hour of Ballast Donkey ✓

Diar. of Pipe required by Rule for

FEED WATER FILTERS. ✓

No. Type Size
 Makers
 Working Pressure Test Pressure Date of Test

FORCED DRAUGHT FANS. ✓

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

PUMPS

Feed Donkey
One
Vertical
Workington & Co.
Duplex
double acting
9"
6"
6"
from Sea, tanks, hotwell & Condenser.

to boilers, deck, overboard and
ash ejector.

largest Ballast Tank

Velocity of Water in Pipe

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SPARE GEAR.

No. of Top End Bolts	2	No. of Bot. End Bolts	2
" Main Bearing Bolts	2	" Coupling Bolts	one set
" Cylr. Cover Bolts	6	" Valve Chest Cover Bolts	6
" Feed Pump Valves	one set	" Bilge Pump Valves	one set
" Safety Valve Springs	one set	" Fire Bars	one set
" Piston Rings	✓	" Junk Ring Bolts	6
" Piston Rods	✓	" Connecting Rods	✓
" Valve Spindles	✓	" Air Pump "	✓
" Air Pump Valves	one set	" " Buckets	✓
" Crank Pin Bushes	✓	" Crosshead Bushes	✓
" Crank Shafts	✓	" Propeller Shafts	✓
" Propellers	✓	" " Blades	two
" Boiler Tubes	✓	" Condenser Tubes	✓

OTHER ARTICLES OF SPARE GEAR:-

20 condenser ferrules
 one set feed donkey and ballast
 donkey valves, 2 check valve lids
 a quantity of assorted plate and bar
 iron, bolts nuts and studs.

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.

Canadian

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

Fees—

MAIN BOILERS.

H.S. 3000 Sq. ft. 15 : 0 : 0

G.S. 102 " 6 : : :

DONKEY BOILERS.

H.S. ✓ Sq. ft. : : :

G.S. ✓ " : : :

£ 15 : 0 : 0

ENGINES.

L.P.C. 442 Cub. ft. 13 : 0 : 0

Testing, &c. : : :

Expenses ... : : :

Total ... £ 28 : 0 : 0

It is submitted that this Report be approved,

W. J. King
Chief Surveyor.

Approved by the Committee,

*for the Clerk of M.B.S.**
on the 11th September 1904

Fees applied for 15-8-7

Fees paid 17-8-7

Walter Manning
Secretary.

*Lees Ash Ejector fitted in
Stokkhold.*



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Ben has Spectator from
Stockholm.

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